Virginia Board of Education Agenda Item

Agenda Item: F **Date:** April 28, 2016

Title	First Review of Recommendation of the Advisory Board on Teacher Education and Licensure (ABTEL) to Revise the *Licensure Regulations for School Personnel* (8VAC20-23-10 et seq.) (Final Stage)		
Presenter	Mrs. Patty S. Pitts, Assistant Superintendent for Teacher Education and Licensure		
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Purpose of Presentation:
Action required by Board of Education regulation.

Previous Review or Action:
Previous review and action. Specify date and action taken below:

Date: September 27, 2012
Action: First Review of a Notice of Intended Regulatory Action (NOIRA) to Revise the *Licensure Regulations for School Personnel*

Date: October 25, 2012
Action: Final Approval of a Notice of Intended Regulatory Action (NOIRA) to Revise the *Licensure Regulations for School Personnel*

Date: May 23, 2013
Action: First Review of Recommendation of the Advisory Board on Teacher Education and Licensure (ABTEL) to Revise the *Licensure Regulations for School Personnel* (Proposed Stage)

Date: June 27, 2013
Action: Final Review of Recommendation of the Advisory Board on Teacher Education and Licensure (ABTEL) to Revise the *Licensure Regulations for School Personnel* (Proposed Stage)

Date: October 22, 2015
Action: Public Hearing on the Proposed *Licensure Regulations for School Personnel*

Action Requested:
Action will be requested at a future meeting. Specify anticipated date below:
May 26, 2016

Alignment with Board of Education Goals: Please indicate (X) all that apply:

	Goal 1: Accountability for Student Learning
	Goal 2: Rigorous Standards to Promote College and Career Readiness
	Goal 3: Expanded Opportunities to Learn
	Goal 4: Nurturing Young Learners

X	Goal 5: Highly Qualified and Effective Educators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:
Goal 5: The *Licensure Regulations for School Personnel* set forth the requirements for teachers and administrators to become licensed in Virginia. These regulations will establish policies and standards for the qualifications of instructional personnel, further ensuring educational quality for Virginia public school students.

The *Constitution of Virginia* and the *Code of Virginia* provide authority for the Board of Education to promulgate *Licensure Regulations for School Personnel*:

Article VIII, Section 4 of the *Constitution of Virginia states, in part, the following:*

> "The general supervision of the public school system shall be vested in a Board of Education…."

The Board of Education has the statutory authority to prescribe licensure requirements. Section 22.1-298.1 of the *Code of Virginia*, states:

> § 22.1-298.1. **Regulations governing licensure.**
> A. As used in this section:
>
> "Alternate route to licensure" means a nontraditional route to teacher licensure available to individuals who meet the criteria specified in the regulations issued by the Board of Education.
>
> "Industry certification credential" means an active career and technical education credential that is earned by successfully completing a Board of Education-approved industry certification examination, being issued a professional license in the Commonwealth, or successfully completing an occupational competency examination.
>
> "Licensure by reciprocity" means a process used to issue a license to an individual coming into the Commonwealth from another state when that individual meets certain conditions specified in the Board of Education's regulations.
>
> "Professional teacher's assessment" means those tests mandated for licensure as prescribed by the Board of Education.
>
> "Provisional license" means a nonrenewable license issued by the Board of Education for a specified period of time, not to exceed three years, to an individual who may be employed by a school division in the Commonwealth and who generally meets the requirements specified in the Board of Education's regulations for licensure, but who may need to take additional coursework or pass additional assessments to be fully licensed with a renewable license.

"Renewable license" means a license issued by the Board of Education for five years to an individual who meets the requirements specified in the Board of Education's regulations.

A. The Board of Education shall prescribe, by regulation, the requirements for the licensure of teachers and other school personnel required to hold a license. Such regulations shall include requirements for the denial, suspension, cancellation, revocation, and reinstatement of licensure.

The Board of Education shall revoke the license of any person for whom it has received a notice of dismissal or resignation pursuant to subsection F of § 22.1-313 and, in the case of a person who is the subject of a founded complaint of child abuse or neglect, after all rights to any appeal provided by § 63.2-1526 have been exhausted. Regardless of the authority of any other agency of the Commonwealth to approve educational programs, only the Board of Education shall have the authority to license teachers to be regularly employed by school boards, including those teachers employed to provide nursing education.

The Board of Education shall prescribe by regulation the licensure requirements for teachers who teach only online courses, as defined in § 22.1-212.23. Such license shall be valid only for teaching online courses. Teachers who hold a five-year renewable license issued by the Board of Education may teach online courses for which they are properly endorsed.

C. The Board of Education's regulations shall include requirements that a person seeking initial licensure:

1. Complete professional assessments as prescribed by the Board of Education;
2. Complete study in attention deficit disorder;
3. Complete study in gifted education, including the use of multiple criteria to identify gifted students; and
4. Complete study in methods of improving communication between schools and families and ways of increasing family involvement in student learning at home and at school.

D. In addition, such regulations shall include requirements that:

1. Every person seeking initial licensure or renewal of a license demonstrate proficiency in the use of educational technology for instruction;
2. Every person seeking initial licensure and persons seeking licensure renewal as teachers who have not completed such study shall complete study in child abuse recognition and intervention in accordance with curriculum guidelines developed by the Board of Education in consultation with the Department of Social Services that are relevant to the specific teacher licensure routes;
3. Every person seeking initial licensure or renewal of a license shall receive professional development in instructional methods tailored to promote student academic progress and effective preparation for the Standards of Learning end-of-course and end-of-grade assessments;
4. Every person seeking renewal of a license shall complete all renewal requirements, including professional development in a manner prescribed by the Board, except that no person seeking renewal of a license shall be required to satisfy any such requirement by completing coursework and earning credit at an institution of higher education;
5. Every person seeking initial licensure or renewal of a license shall provide evidence of completion of certification or training in emergency first aid, cardiopulmonary resuscitation, and the use of automated external defibrillators. The certification or training program shall be based

on the current national evidence-based emergency cardiovascular care guidelines for cardiopulmonary resuscitation and the use of an automated external defibrillator, such as a program developed by the American Heart Association or the American Red Cross. The Board shall provide a waiver for this requirement for any person with a disability whose disability prohibits such person from completing the certification or training;
6. Every person seeking licensure with an endorsement as a teacher of the blind and visually impaired shall demonstrate proficiency in reading and writing Braille; and
7. Every teacher seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education shall have an industry certification credential in the area in which the teacher seeks endorsement. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the Board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

E. The Board's regulations shall require that initial licensure for principals and assistant principals be contingent upon passage of an assessment as prescribed by the Board.

F. The Board shall establish criteria in its regulations to effectuate the substitution of experiential learning for coursework for those persons seeking initial licensure through an alternate route as defined in Board regulations.

G. Notwithstanding any provision of law to the contrary, the Board may provide for the issuance of a provisional license, valid for a period not to exceed three years, pursuant to subdivision D 7 or to any person who does not meet the requirements of this section or any other requirement for licensure imposed by law.

H. The Board's licensure regulations shall also provide for licensure by reciprocity:

1. With comparable endorsement areas for those individuals holding a valid out-of-state teaching license and national certification from the National Board for Professional Teaching Standards or a nationally recognized certification program approved by the Board of Education. The application for such individuals shall require evidence of such valid licensure and national certification and shall not require official student transcripts;
2. For individuals who have obtained a valid out-of-state license, with full credentials and without deficiencies, that is in force at the time the application for a Virginia license is received by the Department of Education. The individual must establish a file in the Department of Education by submitting a complete application packet, which shall include official student transcripts. An assessment of basic skills as provided in § 22.1-298.2 and service requirements shall not be imposed for these licensed individuals; however, other licensing assessments, as prescribed by the Board of Education, shall be required; and
3. The Board may include other provisions for reciprocity in its regulations.

Code of Virginia, Section 22.1-16. Bylaws and regulations generally.
Code of Virginia, Section 22.1-299. License required of teachers.
Code of Virginia, Section 22.1-305.2. Advisory Board on Teacher Education and Licensure.

On October 25, 2012, the Board of Education approved the Notice of Intended Regulatory Action (NOIRA), which is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA) and Executive Order 14 (2010). The NOIRA was filed with the Virginia Registrar, and the public comment period for the NOIRA concluded on January 16, 2013.

The Advisory Board on Teacher Education and Licensure received the proposed revisions to the *Licensure Regulations for School Personnel* on April 22, 2013. The Advisory Board unanimously recommended that the Board of Education accept the proposed revisions to the regulations in the proposed stage of the Administrative Process Act process.

On June 27, 2013, the Board of Education approved proposed revisions to the *Licensure Regulations for School Personnel*. Due to the significant number of revisions, the Board recommended repealing the current regulations (8VAC20-22-10 et seq.) and promulgating new, revised regulations (8VAC20-23-10 et seq.).

Highlighted below are the major proposed revisions to the *Licensure Regulations for School Personnel* (Proposed Stage) recommended in 2013.

8VAC20-23-10. Definitions. (page 4)
The amendments revised the definitions section of these regulations to align with proposed revisions throughout the *Licensure Regulations for School Personnel*.

8VAC20-23-40. Conditions for licensure. (page 9)
The amendments included the following:

- Added the requirement that individuals seeking initial licensure provide evidence of training or certification in emergency first aid, cardiopulmonary resuscitation, and the use of automated external defibrillators (Required by the 2013 General Assembly).

- Added "The teacher of record for verified credit courses for high school graduation must hold a Virginia license with the appropriate content endorsement."

8VAC20-23-50. Types of licenses; dating licenses. (page 12)
The amendments revised this section to include the following:

- Issue a Provisional License for two years (with the exception of the Provisional Career Switcher License). Individuals may apply for a third year on the Provisional License by submitting documentation indicating that all licensure assessments prescribed by the Virginia Board of Education have been taken. *[Note: In the final stage, ABTEL has recommended that this amendment be stricken based on public comment.]*

- Issue the International Educator License for a five-year, instead of a three-year, exchange program.

- Discontinue the Local Eligibility License (Required by the 2013 General Assembly).

- Add the Online Teacher License as a five-year, renewable license valid only for teaching online courses.

- Add the Teach for America License (Required by the 2013 General Assembly).

8VAC20-23-90. Alternate routes to licensure. (page 24)

- The amendments increased the requirements from three semester hours to nine semester hours of specified coursework prior to issuance of a Provisional (Special Education) License to individuals without a five-year Virginia teaching license. *[Note: In the final stage, ABTEL has recommended that this amendment be stricken based on public comment.]*

8VAC20-23-110. Requirements for renewing a license. (page 33)
The amendments revised this section to include the following:

- Added the requirement that any individual licensed and endorsed to teach a) middle school civics or economics or b) high school government or history who is seeking renewal of such license demonstrate knowledge of Virginia history or state and local government by completing a module or professional development course specifically related to Virginia history or state and local government (Required by the 2013 General Assembly).

- Added the requirement that individuals seeking initial licensure or renewing a license, effective July 1, 2013, provide evidence of training or certification in emergency first aid, cardiopulmonary resuscitation, and the use of automated external defibrillators (Required by the 2013 General Assembly)

8VAC20-22-130. Professional studies requirements. (page 39)

- The amendments included changing professional study coursework titles and course content. An additional course requirement, Assessment of and for Learning is proposed. *[Note: In the final stage, ABTEL has recommended that that "Foundations of Education" be changed to "Foundations of Education and the Teaching Profession" and "Reading" be changed to "Language and Literacy" based on public comment.]*

8VAC20-23-140 – 8VAC20-22-670
The amendments revised the following endorsement areas:

- **8VAC20-23-140. Early childhood for three- and four-year-olds (add-on endorsement).** Amended the regulations to allow individuals who hold the early childhood special education endorsement to add this endorsement. (page 47)

- **8VAC20-23-150. Early/primary education preK-3.** Increased the coursework requirements in mathematics and science and provided an option for specified requirements and testing. (page 47)

- **8VAC20-23-160. Elementary education preK-6.** Increased the coursework requirements in mathematics and science and provided an option for specified requirements and testing. (page 49)
- **8VAC20-23-170. Middle education 6-8.** Increased the coursework requirements in mathematics. (page 50)

- **Career and technical education – industrial cooperative training (add-on endorsement).** Discontinued the endorsement.

- **8VAC20-23-130. Engineering.** Established a new endorsement. (page 79)

- **8VAC20-23-560. Special education – general curriculum K-6 (add-on endorsement); 8VAC20-23-570. Special education – general curriculum middle grades 6-8 (add-on endorsement); 8VAC20-23-580. Special education – general curriculum secondary grades 6-12 (add-on endorsement).** Established new add-on endorsements. (pages 113-121)

- **8VAC20-23-620. Administration and supervision preK-12.** Revised the alternate route to add an option of a combination of graduate-level coursework and a research-based program approved by the Department of Education and added "Principal of Distinction" to the name of the Level II endorsement in administration and supervision preK-12. (page 127)

- **8VAC20-23-640. Mathematics specialist for elementary education.**
  8VAC20-23-650. Mathematics specialist for middle education.
  Established separate endorsements specific to the population of students being served. *[In the final stage, ABTEL is recommending the establishment of the mathematics specialist for elementary education endorsement and maintaining the mathematics specialist for elementary and middle education endorsement.]* (page 137)

- **Special education: speech language pathologist preK-12.** Discontinued issuing an initial license with an endorsement in speech/language pathology. Individuals will seek a license from the Virginia Board of Examiners for Audiology and Speech Pathology.

8VAC20-23-720 – 8VAC-22-800: Part VII-Revocation, Cancellation, Suspension, Denial, and Reinstatement of Teaching Licenses

- Amendments were proposed for Part VII-Revocation, Cancellation, Suspension, Denial, and Reinstatement of Licenses. *[In the final stage, ABTEL supports recommended revisions by the Attorney General's Office.]* (page 143)

Summary of Important Issues:
The proposed regulations were published in the *Virginia Register of Regulations* VOL. 32, ISS.1, on September 7, 2015. An online comment period was opened on the Virginia Register's Town Hall. Public comments were accepted through Friday, November 6, 2015. A public hearing on the proposed regulations was held on Thursday, October 22, 2015. Advisory Board on Teacher Education and Licensure members received a written summary of all comments received. The public comments received are included in **Attachment C**.

On November 16, 2015, the Advisory Board on Teacher Education and Licensure reviewed public comments on the proposed *Licensure Regulations for School Personnel*. On February 29, 2016, the Advisory Board continued review of public comments and proposed revisions to the *Licensure Regulations for School Personnel*. On March 21, 2016, the Advisory Board on Teacher Education and Licensure reviewed and discussed proposed revisions. The Advisory Board recommended that the proposed revisions to the *Licensure Regulations for School Personnel* be submitted to the Board of Education; authorized the Department Education staff to make technical edits to the regulation; approved any edits from the Attorney General's Office for Part VII: Revocation, Cancellation, Suspension, Denial, and Reinstatement of Teaching Licenses; and recommended a one-year transition period for the implementation of the regulations.

Attachment A contains a chart highlighting proposed revisions to the *Licensure Regulations for School Personnel*. Additional details and technical revisions are set forth in **Attachment B** Proposed *Licensure Regulations for School Personnel* (8VAC20-23-10 et seq.).

Impact on Fiscal and Human Resources:
The administrative impact of revising and implementing new regulations will be absorbed within existing resources.

Timetable for Further Review/Action:
The timetable for further action will be governed by the requirements of the Administrative Process Act.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education accept for first review the Advisory Board on Teacher Education and Licensure recommendation to revise the *Licensure Regulations for School Personnel* (Final Stage).

ATTACHMENT A

Proposed
Revisions to the Licensure Regulations for School Personnel
(Final Stage)

Presented to the Virginia Board of Education
April 28, 2016

Virginia Department of Education
Division of Teacher Education and Licensure
P. O. Box 2120
Richmond, Virginia 23218-2120

Proposed Revisions (Final Stage)
Licensure Regulations for School Personnel

SECTION	PROPOSED REVISION
DEFINITIONS	
8VAC20-23-10. Definitions. (Page 4) Revised definitions	**8VAC20-23-10. Definitions.** "Accredited virtual school or program" means a virtual school or program accredited by one of the accrediting agencies recognized by the Virginia Department of Education. [School divisions operating as multi-division online providers may be deemed as meeting accreditation requirements if a majority of its schools are fully accredited by the Virginia Board of Education.] "Collegiate Professional License" means a five-year, renewable [teaching] license available to an individual who has satisfied all requirements for licensure set forth in this chapter, including an earned baccalaureate degree from a regionally accredited college or university and the professional teacher's assessments prescribed by the Virginia Board of Education. ["Professional studies" means courses and other learning experiences designed to prepare individuals in the areas of human development and learning, curriculum and instruction, assessment of and for learning, classroom and behavior management, foundations of education and the teaching profession, language and literacy, and supervised clinical experiences;] "Provisional License" means a nonrenewable license valid for a specified period of time not to exceed three years issued to an individual who has allowable deficiencies for full licensure as set forth in this chapter. The individual must have a minimum of an undergraduate degree from a regionally accredited college or university, with the exception of those individuals seeking the Technical Professional License. The Provisional License [will be issued for a three-year validity period], with the exception of ~~those individuals seeking licensure through a~~ the Provisional Career S~~s~~witcher License ~~program who~~ that will be initially issued ~~a~~ for a one-year validity period ~~Provisional License~~ and ~~individuals seeking a~~ Teach for America P~~p~~rovisional L~~l~~icense~~, will be~~ issued for two years. ~~Individuals may apply for a third year on the Provisional License by submitting documentation indicating that all licensure assessments prescribed by the Virginia Board of Education have been taken~~.] Individuals must complete all requirements, including passing all licensure assessments, for a renewable license within the validity period of the license. "Technical Professional License" means a five-year, renewable license available to an individual who has graduated from an accredited high school (or possesses a [~~General Educational Development Certificate~~ Virginia Board of Education-approved high school equivalency credential)]; has exhibited academic proficiency, technical competency, and successful occupational experience; and meets the requirements specified in subdivision 4 of 8VAC20-23-50.

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LICENSURE	
8VAC20-23-40. Conditions for licensure. (Page 9) Amended requirements Amended to add clarity about individuals who earned a degree from an institution in another country	**8VAC20-23-40. Conditions for licensure.** A. Applicants for licensure must: 3. Have earned a baccalaureate degree, with the exception of the Technical Professional License, from a regionally accredited college or university and meet requirements for the license sought. Persons seeking initial licensure through approved programs from Virginia institutions of higher education shall only be licensed as instructional personnel [if the education endorsement programs have approval by the ~~by the Virginia Board of Education if the professional education programs offered at such institutions have been accredited by a national accrediting agency and the education (endorsement) programs have final approval by the~~] Virginia Board of Education; [individuals who have earned a degree from an institution in another country must hold the equivalent of a regionally accredited college or university degree in the United States, as verified by a Department of Education approved credential agency, for the required degree for the license;] and… D. Licensure by reciprocity is set forth in 8VAC20-23-100. A school leaders [licensure] assessment prescribed by the Virginia Board of Education must be met for all individuals who are seeking an endorsement authorizing them to serve as principals and assistant principals in the public schools. Individuals seeking an initial administration and supervision endorsement who are interested in serving as central office instructional personnel are not required to take and pass the school leaders [licensure] assessment prescribed by the Virginia Board of Education.
8VAC20-23-50. Types of licenses; dating licenses. (Page 12) Amended to issue a three-year Provisional License Changed "General Educational Development Certificate" to "Virginia	**8VAC20-23-50. Types of licenses; dating licenses.** 1. Provisional License. The Provisional License is a nonrenewable license valid for a period not to exceed three years issued to an individual who has allowable deficiencies for full licensure as set forth in this chapter. The Provisional License will be issued for [~~two~~three] years, with the exception[s] of[~~ those individuals seeking a~~ the] Provisional [(Career Switcher)] License [issued for one year~~through a career switcher program~~ and the Provisional Teach for America License issued for two years]. [~~Individuals may apply for a third year on the Provisional License by submitting documentation indicating that all licensure assessments prescribed by the Virginia Board of Education (http://doe.virginia.gov/teaching/licensure/prof_teacher_assessment.pdf) have been taken.~~] [~~The Provisional (Career Switcher) License will be dated as set forth in 8VAC20-23-90 A 2~~.] Individuals must complete the requirements including passing all licensure assessments, for the renewable five-year license within the validity period of the Provisional License. The individual must have a minimum of an undergraduate degree from a regionally accredited college or university, with the exception of those individuals seeking the Technical Professional License. 4. Technical Professional License. The Technical Professional License

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Board of Education-approved high school equivalency credential"	is a five-year, renewable license available to a person who has graduated from an accredited high school or possesses a [~~General Educational Development Certificate~~ Virginia Board of Education-approved high school equivalency credential]; has exhibited academic proficiency, skills in literacy and communication, technical competency, and successful occupational experience; [~~and~~] has completed nine semester hours of specialized professional studies credit from a regionally accredited college or university [and has completed one year of successful, full-time teaching experience in a public school or accredited nonpublic school in the area of endorsement]. The nine semester hours of professional studies coursework must include three semester hours of human development and learning, three semester hours of curriculum and instruction, and three semester hours of applications of instructional technology or classroom and behavior management. The Technical Professional License is issued at the recommendation of a[~~n~~ Virginia] employing educational agency of career and technological education, (3) Online Teacher (Technical Professional) License - a five-year, renewable teaching license available to an individual who has graduated from an accredited high school or possesses a [~~General Educational Development Certificate~~ Virginia Board of Education-approved high school equivalency credential)]; c. A nonrenewable Online Teacher (Provisional) License may be issued for a period not to exceed three years to an individual who has allowable deficiencies for full licensure as set forth in 8VAC20-23-90 B. The Online (Provisional) License will be issued for [~~two~~three] years. [~~Individuals may apply for a third year on the Online (Provisional) License by submitting documentation indicating that all licensure assessments prescribed by the Virginia Board of Education have been taken.~~] The individual must have a minimum of an undergraduate degree from a regionally accredited college or university, with the exception of those individuals seeking the Technical Professional License. Individuals must complete all requirements for a renewable Online Teacher License within the validity period of the license.
8VAC20-23-90. Alternate routes to licensure. (Page 24) Amended the section to issue a three-year Provisional License, instead of an initial two-year license with a one-year extension Reduced the number of years of work experience from five to three for the Provisional (Career	**8VAC20-23-90. Alternate routes to licensure.** A. Career switcher alternate route to licensure for career professions - Provisional (Career Switcher) License. An alternate route is available to career switchers who seek teaching endorsements preK through grade 12 with the exception of special education. 1. An individual seeking a Provisional (Career Switcher) License through the career switcher program must meet the following prerequisite requirements: d. At least [~~five~~three] years of full-time work experience or its equivalent; 2. The Provisional (Career Switcher) License is awarded at the end of Level I preparation [for an initial validity period of one school year]. All components of the career switcher alternate route for career

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Switcher) License	professions must be completed by the candidate. 3. The Level I requirements must be completed during the course of a single year and may be offered through a variety of delivery systems, including distance learning programs. If an employing agency recommends extending the Provisional (Career Switcher) License for a second year, the candidate will enter Level III of the program. Career switcher programs [must submit program documentation as set forth by the Virginia Department of Education for review and be certified every seven years~~must be certified~~] by the Virginia Department of Education. a. Level I preparation. Intensive Level I preparation includes a minimum of 180 clock hours of instruction, including field experience. This phase includes, but is not limited to, [human development and learning;] curriculum and instruction, including technology[~~,~~;] [~~reading~~ language and literacy], [~~and other~~] specific course content relating to the Standards of Learning; [foundations of education and the teaching profession~~differentiation of instruction~~; classroom and behavior management; and assessment of and for learning~~instructional design based on assessment data; and human development and learning~~].
Added the option for individuals employed by a Virginia educational agency to demonstrate meeting the endorsement requirements by passing a rigorous academic subject test prescribed by the Virginia Board of Education	B. An alternate route is available to individuals employed by a[~~n~~ Virginia] educational agency who seek teaching endorsements preK through grade 12. The employing Virginia educational agency may request a nonrenewable Provisional License on behalf of the individual if the individual has completed an allowable portion of professional studies and endorsement requirements. [An employed teacher may demonstrate meeting the teaching endorsement by passing a rigorous academic subject test for endorsements in which a test is prescribed by the Virginia Board of Education. This testing option does not apply to individuals (i) who are seeking an early/primary education preK-3 or elementary education preK-6 endorsement, special education endorsements, or a reading specialist endorsement or (ii) who hold a Technical Professional License, Vocational Evaluator License, Pupil Personnel Services License, School Manager License, or Division Superintendent License.] This route [~~is~~] also [is] applicable to individuals who are employed by a Virginia public school, a Virginia accredited nonpublic school, or an accredited virtual school or program and who are seeking the Online Teacher License that is issued to teachers who teach only online courses. The Provisional License will be issued for [~~two~~three] years. [~~Individuals may apply for a third year on the Provisional License by submitting documentation indicating that all licensure assessments prescribed by the Virginia Board of Education have been taken.~~] The Provisional License is a nonrenewable teaching license valid for a period not to exceed three years. Individuals must complete all licensure requirements to become eligible for the five-year, renewable license.
Amended text to remove the Provisional (Special	C. Alternate route in special education. The Provisional (Special Education) License is a nonrenewable teaching license issued [for a

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Education) license proposed requirement that individuals who do not hold a renewable license must complete nine semester hours of coursework to become eligible for this license	validity period of three years] to an individual employed as a special education teacher in a public school or a nonpublic special education school in Virginia who does not hold the appropriate special education endorsement. The Provisional (Special Education) License will be issued [only with endorsements in special education. ~~for two years. Individuals may apply for a third year on the Provisional License by submitting documentation indicating that all licensure assessments prescribed by the Virginia Board of Education have been taken.~~] The Provisional License is a nonrenewable teaching license valid for a period not to exceed three years. This alternate route to special education is not applicable to individuals seeking the Online Teacher License. To be issued the Provisional (Special Education) License through this alternate route, an individual must [~~meet the requirements through one of the two following options~~]: [~~1. Option I. The individual must hold a full, valid Collegiate Professional or Postgraduate Professional License and must:~~] [1~~a~~]. Be employed by a Virginia public or nonpublic school as a special educator and have the recommendation of the employing educational agency; [2~~b~~]. Have earned a baccalaureate degree from a regionally accredited college or university; [3~~c~~]. Have an assigned mentor with an active Virginia teaching license with an endorsement in special education; and [4~~d~~]. Have a planned program of study in the assigned endorsement area, make progress toward meeting the endorsement requirements each of the three years of the license, and have completed at least three semester hours of coursework in the competencies of foundations for educating students with disabilities and an understanding and application of the legal aspects and regulatory requirements associated with identification, education, and evaluation of students with disabilities. A survey course integrating these competencies would satisfy this requirement. The Provisional (Special Education) License through this alternate route shall not be issued without the completion of these prerequisites. [~~2. Option II. The individual must:~~] [~~a. Be employed by a Virginia public or nonpublic school as a special educator and have the recommendation of the employing educational agency;~~] [~~b. Have earned a baccalaureate degree from a regionally accredited college or university;~~]

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	[~~c. Have an assigned mentor endorsed in special education; and~~] [~~d. Have a planned program of study in the assigned endorsement area, make progress toward meeting the endorsement requirements each of the three years of the license, and have completed nine semester hours including courses in the following: characteristics of students with disabilities, individualized education program implementation, and classroom and behavior management at least three semester hours of coursework in the competencies of foundations for educating students with disabilities and an understanding and application of the legal aspects and regulatory requirements associated with identification, education, and evaluation of students with disabilities. A survey course integrating these competencies would satisfy this requirement.~~ ~~The Provisional (Special Education) License through this alternate route shall not be issued without the completion of these prerequisites.]~~
Reduced the number of years of work experience from five to three years for the experiential learning route to licensure	E. Experiential learning. Individuals applying for an initial teaching license through the alternate route as prescribed by the Virginia Board of Education must meet the following criteria to be eligible to request experiential learning to satisfy the coursework for the endorsement (teaching) content area: 1. Have earned a baccalaureate degree from a regionally accredited college or university; 2. Have at least [~~five~~three] years of documented full-time work experience that may include specialized training related to the endorsement sought; and 3. Have met the qualifying score on the content knowledge assessment prescribed by the Virginia Board of Education.
8VAC20-23-100. Conditions for licensure for out-of-state candidates by reciprocity. (Page 32) Amended text to make clear all *Code of Virginia* requirements must be met	**8VAC20-23-100. Conditions for licensure for out-of-state candidates by reciprocity.** A. An individual coming into Virginia from any state may qualify for a Virginia teaching license with comparable endorsement areas if the individual (i) has completed a state-approved teacher preparation program through a regionally accredited four-year college or university or (ii) holds a valid out-of-state teaching license (i.e., full credential without deficiencies) that must be in force at the time the application for a Virginia license is made. [An individual must meet licensure requirements set forth in the Code of Virginia.]
8VAC20-23-110. Requirements for renewing a license. (Page 33)	**8VAC20-23-110. Requirements for renewing a license.** B. An individual [~~who holds an expired license~~seeking renewal] must submit a completed licensure application at the time a [~~licensure~~] request is submitted.

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Deleted reporting of high-quality professional development from the licensure regulations [The statute requires that local school divisions shall provide teachers and principals with high-quality professional development programs.]	[~~C. Virginia public school divisions and public education agencies must report annually to the Virginia Department of Education that instructional personnel have completed high-quality professional development each year as set forth by the Virginia Department of Education.~~] [C~~D~~]. Any individual licensed and endorsed to teach (i) middle school civics or economics or (ii) high school government or history who is seeking renewal of such license is required to demonstrate knowledge of Virginia history or state and local government by completing a module or professional development course specifically related to Virginia history or state and local government that has a value of five professional development points. [~~This requirement applies for purposes of the individual's next or initial renewal occurring after July 1, 2014.~~]
Clarified that the statutory requirement of certification or training in emergency first aid, CPR, and use of AED is required for each renewal	[D~~E~~. ~~If the requirement has not been met for initial licensure or licensure renewal, individuals~~Every person] seeking renewal of a license shall provide evidence of completion of certification or training in emergency first aid, cardiopulmonary resuscitation, and the use of automated external defibrillators. The certification or training program shall be based on the current national evidence-based emergency cardiovascular care guidelines for cardiopulmonary resuscitation and the use of an automated external defibrillator, such as a program developed by the American Heart Association or the American Red Cross. The Virginia Board of Education shall provide a waiver for this requirement for any person with a disability whose disability prohibits such person from completing the certification or training.
Added the statutory language requiring training in instructional methods to promote academic progress for renewal	[E~~O~~. Training in instructional methods tailored to promote academic progress and effective preparation for the Standards of Learning tests and end-of-grade assessments is required for licensure renewal.] [F~~P~~. Persons seeking licensure renewal as teachers must complete study in child abuse recognition and intervention in accordance with curriculum guidelines developed by the Virginia Board of Education in consultation with the Virginia Department of Social Services that are relevant to the specific teacher licensure routes.]
Added a renewal requirement that individuals must complete professional development, including working with challenged populations, when provided by the state	[G. When provided by the state, individuals must complete professional development in knowledge, skills and dispositions needed in working with challenged populations and complete other professional development activities prescribed by the Board of Education.] [H~~F~~]. Professional development points may be accrued by the completion of professional development activities to improve and increase instructional personnel's knowledge of the academic subjects the teachers teach or the area assigned from one or more of the following eight options. 1. College credit. Acceptable coursework offers content that provides new information and is offered on campus, off campus, or through extension by any regionally accredited two-year or four-year college or university. College coursework

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	must develop further experiences in subject content taught, teaching strategies, uses of technologies, leadership, and other essential elements in teaching to high standards and increasing student learning. [~~Instructional personnel must complete coursework to improve and increase the knowledge of the academic subjects or endorsement areas in which they are assigned.~~] *No person seeking renewal of a license shall be required to complete coursework and earn credit at an institution of higher learning.*[~~Individuals who do not hold a graduate degree must refer to subsection G of this section.~~] [J~~K~~]. The proposed work toward renewal in certain options must be approved in advance by the chief executive officer or designee of the employing educational agency. Persons who are not employed by an educational agency may renew [~~or reinstate~~] their license by submitting to the Office of Professional Licensure, Department of Education, [a renewal application, fee,] the[~~ir~~] individualized renewal record and verification of [~~points~~ the completion of all renewal requirements], including official student transcripts of coursework taken at a regionally accredited two-year or four-year college or university. [K~~L~~]. Accrual of professional development points shall be determined by criteria set forth by the Virginia Department of Education in the Virginia Renewal Manual (http://doe.virginia.gov/teaching/licensure/licensure_renewal_manual.pdf). [L~~M~~]. Virginia school divisions and [accredited] nonpublic schools will recommend renewal of licenses using the renewal point system.[~~The renewal recommendation must include verification of demonstrated proficiency in the use of educational technology for instruction.~~] [M~~N~~]. Persons seeking license renewal as teachers must demonstrate proficiency in the use of educational technology for instruction. [~~O. Training in instructional methods tailored to promote academic progress and effective preparation for the Standards of Learning tests and end-of-grade assessments is required for licensure renewal.~~] [~~P. If they have not already met the requirement, persons seeking licensure renewal as teachers must complete study in child abuse recognition and intervention in accordance with curriculum guidelines developed by the Virginia Board of Education in consultation with the Virginia Department of Social Services that are relevant to the specific teacher licensure routes.~~]
LICENSURE REGULATIONS GOVERNING EARLY/PRIMARY EDUCATION, ELEMENTARY EDUCATION, AND MIDDLE EDUCATION ENDORSEMENTS	
8VAC20-23-130. Professional studies requirements [for early/primary education,	**8VAC20-23-130. Professional studies requirements [for early/primary education, elementary education, and middle education endorsements].** 1. Human development and learning (birth through adolescence): 3

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elementary education, and middle education endorsements]. (Page 39) Amended requirements Changed "The Teaching Profession" to "Foundations of Education and the Teaching Profession"	semester hours. b. The interaction of children with individual differences - economic, social, racial, ethnic, religious, physical, and [~~mental~~cognitive] - should be incorporated to include skills contributing to an understanding of developmental disabilities and developmental issues related to[,] but not limited to[,] low socioeconomic status[~~,~~;] attention deficit disorders[~~,~~;] developmental disorders[~~,~~;] gifted education[,] including the use of multiple criteria to identify gifted students[~~,~~;] substance abuse[~~,~~; ~~child abuse,~~trauma, including child abuse and neglect and other adverse childhood experiences;] and family disruptions. 2. Curriculum and instruction: 3 semester hours. a. Early/primary education preK-3 or elementary education preK-6 curriculum and instruction: 3 semester hours. (3) Instructional practices that are sensitive to culturally and linguistically diverse learners, including [English learners~~limited English proficient students~~], gifted and talented students, and those students with disabilities; and appropriate for the level of endorsement (i.e., preK-3 or preK-6) sought shall be included. (5) Study in (i) methods of improving communication between schools and families, (ii) communicating with families regarding social and instructional needs of children, (iii) ways of increasing family [engagement~~involvement~~] in student learning at home and in school, (iv) the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*], and (v) [~~Virginia Foundation Blocks for Early Learning: Comprehensive Standards for Four-Year-Olds~~*Virginia Foundation Blocks for Early Learning: Comprehensive Standards for Four-Year-Olds*] prepared by the department's Office of Humanities and Early Childhood shall be included. (7) Early childhood educators must understand the role of the informal and play-mediated settings for promoting students' skills and development and must demonstrate knowledge and skill in interacting in such situations to promote specific learning outcomes as reflected in [~~Virginia's Foundation Blocks for Early Learning~~ *Virginia's Foundation Blocks for Early Learning: Comprehensive Standards for Four-Year-Olds*]. b. Middle education 6-8 curriculum and instruction: 3 semester hours. (3) Instructional practices that are sensitive to culturally and linguistically diverse learners including [English learners~~limited English proficient students~~], gifted and talented students, and students with disabilities, and must be appropriate for the middle education endorsement shall be included. 3. Classroom and behavior management: 3 semester hours.

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	b. This area shall address diverse approaches based upon [culturally responsive] behavioral, cognitive, affective, social and ecological theory and practice. 5. [Foundations of education and ~~T~~t]he teaching profession: 3 semester hours. 6. [Language and Literacy~~Reading]~~: 6 semester hours. a. Early/primary preK-3 and elementary education preK-6 - language acquisition and reading and writing: (2) Reading and writing: 3 semester hours. Skills in this area shall be designed to impart a thorough understanding of the Virginia English Standards of Learning as well as the reciprocal nature of reading and writing. Reading shall include phonemic [and other phonological] awareness, concept of print, phonics, fluency, vocabulary development, [~~and~~]comprehension strategies[, and the ability to foster appreciation of a variety of fiction and nonfiction text and independent reading]. Writing shall include writing strategies and conventions as supporting the composing and [~~writing~~written] expression and usage and mechanics domains. Additional skills shall include proficiency in understanding the stages of spelling development[~~,~~ and] the writing process[~~, as well as the ability to foster appreciation of a variety of fiction and nonfiction texts and independent reading~~]. b. Middle education - language acquisition and reading development: (1) Language acquisition and reading development: 3 semester hours. Skills in this area shall be designed to impart a thorough understanding of the complex nature of language acquisition and reading, to include phonemic [and other phonological] awareness, phonics, fluency, vocabulary development, and comprehension strategies [~~as~~and ability to foster appreciation of a variety of fiction and nonfiction text and independent reading] for adolescent learners. 7. Supervised [~~clinical~~supervised] experience. Supervised clinical experiences shall be continuous and systematic and comprised of early field experiences and a minimum of 10 weeks of full-time student teaching [in the endorsement area sought] under the supervision of a cooperating teacher with demonstrated effectiveness in the classroom. The summative supervised student teaching experience shall include at least 150 clock hours spent in direct teaching at the level of endorsement. One year of successful full-time teaching experience in the endorsement area in a public or accredited nonpublic school may be accepted in lieu of the supervised teaching experience. For the Online Teacher License only, one year of successful online teaching experience in the endorsement area in a public school, an accredited nonpublic school, or an accredited virtual school or program may be accepted in lieu of the supervised teaching experience. A fully licensed, experienced teacher shall be available in the school building to assist a beginning teacher employed

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	through the alternate route.
8VAC20-23-150. Early/primary education preK-3. (Page 47) Amended requirements Added a history and social sciences methods course	**8VAC20-23-150. Early/primary education preK-3.** 2. The candidate for the early/primary education preK-3 endorsement must have earned a baccalaureate degree from a regionally accredited college or university in the liberal arts and sciences, or equivalent, and completed coursework that covers the early/primary education preK-3 competencies and [~~fulfills~~meets] the following [~~51~~] semester-hour requirements: d. History (must include American history and world history): [complete a methods in teaching elementary history and social sciences course,] and pass a rigorous elementary subject test prescribed by the Virginia Board of Education;
8VAC20-23-160. Elementary education preK-6. (Page 49) Amended requirements Added an additional three semester hours in science Added a history and social sciences methods course	**8VAC20-23-160. Elementary education preK-6.** Endorsement requirements. 2. The candidate for the elementary education preK-6 endorsement must have earned a baccalaureate degree from a regionally accredited college or university majoring in the liberal arts and sciences (or equivalent) and [~~fulfill~~meets] the following [~~57~~] semester-hour requirements: c. [Laboratory ~~S~~sciences] (including a laboratory course): 15 semester hours in at least three science disciplines and at least a three credit science methods course; or complete [~~6~~9] semester hours (in two science disciplines), complete a methods in teaching elementary science course (3 semester hours), and pass a rigorous elementary subject test prescribed by the Virginia Board of Education; d. History (must include America history and world history): [complete a methods in teaching elementary history and social sciences course,] and pass a rigorous elementary subject test prescribed by the Virginia Board of Education;
8VAC20-23-170. Middle education. (Page 50) Increased middle education science requirements	**8VAC20-23-170. Middle education.** 2. An applicant seeking the middle education 6-8 endorsement must have earned a baccalaureate degree from a regionally accredited college or university in the liberal arts and sciences, or equivalent; and completed the minimum number of semester hours, as indicated, in at least one area of academic preparation (i.e., concentration) that will be listed on the license. The applicant will be restricted to teaching only in the area or areas of concentration listed on the teaching license. c. [Laboratory] Science[s]. Science concentration (must include courses in each of the following: biology, chemistry, physics, and Earth and space science; and a laboratory course is required in [~~two~~each] of the four areas): [~~21~~24] semester hours.

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8VAC20-23-190. Professional studies requirements [for PreK-12 endorsements, special education, secondary grades 6-12 endorsements, and adult education]. (Page 52) Amended requirements Changed "The teaching profession" to "Foundations of education and the teaching profession" and "Language and reading" to "Language and literacy"	**8VAC20-23-190. Professional studies requirements [for PreK-12 endorsements, special education, secondary grades 6-12 endorsements, and adult education].** 1. Human development and learning (birth through adolescence): b. The interaction of children with individual differences - economic, social, racial, ethnic, religious, physical, and [~~mental~~cognitive] - should be incorporated to include skills contributing to an understanding of developmental disabilities and developmental issues related to[,] but not limited to[,] low socioeconomic status[~~,~~;] attention deficit disorders[~~,~~;] developmental disabilities[~~,~~;] gifted education[,] including the use of multiple criteria to identify gifted students[~~,~~;] substance abuse[~~,~~; ~~child abuse,~~trauma, including child abuse and neglect and other adverse childhood experiences;] and family disruptions. 2. Curriculum and instruction: c. Instructional practices that are sensitive to culturally and linguistically diverse learners, including [English learners~~limited English proficient students~~]; gifted and talented students and those students with disabilities; and appropriate for the level of endorsement sought shall be included. 4. [Foundations of education and ~~T~~t]he teaching profession: 3 semester hours. 5. Classroom and behavior management: a. Skills in this area shall contribute to an understanding and application of research-based classroom and behavior management techniques, classroom community building, positive behavior supports, and individual interventions, including techniques that promote emotional well-being and teach and maintain [culturally responsive] behavioral conduct and skills consistent with norms, standards, and rules of the educational environment. 6. [Language and Literacy~~Reading~~]. (2) Reading and writing: 3 semester hours. Skills in this area shall be designed to impart a thorough understanding of the Virginia English Standards of Learning as well as the reciprocal nature of reading and writing. Reading shall include phonemic [and other phonological] awareness, concept of print, phonics, fluency, vocabulary development, [~~and~~]comprehension strategies[, and the ability to foster appreciation of a variety of fiction and

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	nonfiction text and independent reading]. Writing shall include writing strategies and conventions as supporting the composing and [~~writing~~written] expression and usage and mechanics domains. Additional skills shall include proficiency in understanding the stages of spelling development[~~,~~ and] the writing process[~~, as well as the ability to foster appreciation of a variety of fiction and nonfiction texts and independent reading~~].
Clarified supervised classroom experience is required for the endorsement area sought	7. Supervised classroom experience. Supervised clinical experiences shall be continuous and systematic and comprised of early field experiences and a minimum of 10 weeks of full-time student teaching [in the endorsement area sought,]
LICENSURE REGULATIONS GOVERNING PREK-12 ENDORSEMENTS, SPECIAL EDUCATION, SECONDARY GRADES 6-12 ENDORSEMENTS, AND ADULT EDUCATION	
8VAC20-23-200. Adult education. (Page 58) Amended requirements Changed "General Educational Development Certificate" to "Virginia Board of Education-approved high school equivalency credential"	**8VAC20-23-200. Adult education.** 2. A minimum of 15 semester hours in adult education that must include the following competencies and one semester of supervised successful full-time, or an equivalent number of hours of part-time experience, teaching of adults: b. Understanding of the knowledge, skills, and processes needed for the selection, evaluation, and instructional applications of the methods and materials for [~~adult basic skills~~adults to become college and career] ready including: (1) Curriculum development in adult basic education or [~~General Educational Development (GED)~~high school equivalency (HSE)] instruction; (2) [~~Beginning reading for adults~~Literacy Skills for adults]; (3) [~~Beginning mathematics for adults~~Numeracy skills for adults]; (4) Reading comprehension for adult education; [~~(5) Foundations of adult education; and~~] ([~~6~~5]) Other adult basic skills instruction.
8VAC20-23-320. Driver education (add-on endorsement). (Page 78) Clarified an individual's degree must be earned from a regionally accredited college or university	**8VAC20-23-320. Driver education (add-on endorsement).** 3. [An earned baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and c~~C~~]ompleted 6 semester hours of coursework distributed in the following areas: 4. A current, valid Virginia driver's license. [School divisions are to ensure that teachers of driver education hold a valid Virginia driver's license.]

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Amended the driver education endorsement to reiterate that teachers must hold valid a Virginia driver's licenses	
8VAC20-23-350. English as a second language preK-12. (Page 81) Amended requirements	**8VAC20-23-350. English as a second language preK-12.** 2. Earned a baccalaureate degree from a regionally accredited college or university and completed 24 semester hours of coursework distributed in the following areas: a. Teaching of reading and writing. Courses must include [~~the five areas of reading instruction:~~] phonemic [and other phonological] awareness[~~,~~;pre-reading, during reading, and post-reading strategies; vocabulary development and guided reading. Ability to structure interactive tasks that engage students in using oral language to develop language and reading skills. Ability to determine students' reading levels and design instruction for multi-level classrooms by incorporating appropriate scaffolding or language supports ~~phonics, fluency, vocabulary and text comprehension as well as the similarities and differences between reading in a first language and reading in a second language and a balanced literacy approach~~]; one course must address teaching reading to English language learners: 6 semester hours;
<u>8VAC20-23-360. Foreign language preK-12.</u> (Page 82) Accept a major in the foreign language to meet the endorsement content requirement	A. The specific language of the endorsement will be noted on the license. B. Endorsement requirements for foreign language preK-12 - languages other than Latin [and American Sign Language]. The candidate must have: 1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in a foreign language; or 2. Earned a baccalaureate degree from a regionally accredited college or university[;] and completed [a major in the foreign language or] 30 semester hours of coursework above the intermediate level in the foreign language distributed in the following areas: a. Advanced grammar and composition; b. Conversation, culture and civilization, and literature; and c. In addition to the 30 semester hours, completed a minimum of 3 semester hours of methods of teaching foreign languages at the elementary and secondary levels. 3. Endorsement in a second [foreign] language may be obtained with 24 semester hours of coursework above the intermediate level.
8VAC20-23-370. Gifted education (add-on endorsement). (Page 85)	**8VAC20-23-370. Gifted education (add-on endorsement).** 3. Completed the following requirements: [a. An earned baccalaureate degree from a regionally accredited

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Amended requirements	college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and] [b.] Completed 12 semester hours of graduate-level coursework in gifted education distributed in the following areas: (1) [~~Academic and social-emotional characteristics and special populations of gifted learners~~Introduction and identification of giftedness:] 3 semester hours; (2) [~~Curriculum models and differentiation of instruction for~~Social and emotional development and guidance of] gifted learners: 3 semester hours; (3) [~~Identification and assessment of~~]Curriculum and instructional strategies for gifted learners: 3 semester hours; and (4) [~~Current trends and issues in the field of gifted education~~Advanced course work with in one of the following areas]: 3 semester hours; [~~and~~] [a. Advanced curriculum, instruction, and assessment design;] [b. Advanced program development and evaluation;] [c. Advanced study in underrepresented populations; and] [d.] Completed a practicum of at least 45 instructional hours.
8VAC20-23-380. Health and physical education preK-12. (Page 86) Amended the health and physical education preK-12 endorsement requirements	**8VAC20-23-380. Health and physical education preK-12.** a. Personal health [~~and~~] safety, [and care of athletic injuries]: 3 semester hours; b. Human anatomy, physiology[, exercise physiology] and [~~kinesiology~~biomechanics of human movement]: 9 semester hours; c. General health and physical education theory, including curriculum design and development in health and physical education: 3 semester hours; d. Instructional methods and skills for secondary physical education: 3 semester hours; e. [Concepts of motor learning, ~~I~~instructional] methods and skills for elementary physical education: 3 semester hours; f. [Instruction methods for elementary and secondary ~~S~~school health ~~methods course~~]: 3 semester hours; g. Health and physical education electives: 9 semester hours; h. [Instructional methods and strategies for ~~A~~adapted] physical

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	education: 3 semester hours; i. Technology in health and physical education: 3 semester hours; j. [Principles of Human] Nutrition: 3 semester hours; and k.[~~Measurement~~Assessment] and evaluation in the content area: 3 semester hours.
8VAC20-23-430. Mathematics. (Page 91) Added a computer science requirement to the mathematics endorsement requirements	**8VAC20-23-430. Mathematics.** 2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in mathematics or 36 semester hours of coursework distributed in each of the following areas: f. Calculus. Experience shall include multivariable calculus; [~~and~~] g. Mathematical modeling[; and~~.~~] [h. Computer science, including two programming languages.]
8VAC20-23-490. Science – Earth science. (Page 95) Clarified requirements	**8VAC20-23-490. Science – Earth science.** 3. Earned an endorsement in another science discipline and at least 18 semester hours in Earth sciences, including at least one course in each of the following areas: structural geology, petrology, paleontology, oceanography, meteorology, and astronomy/space [~~or planetary~~] science.
8VAC20-23-520. Special education blindness and visual impairments preK-12. (Page 100) Amended special education blindness and visual impairments preK-12 endorsement requirements to include Unified English Braille	**8VAC20-23-520. Special education blindness and visual impairments preK-12.** 2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in special education blindness and visual impairments or 30 semester hours in education of students with visual impairments, distributed with at least one course in each of the following areas: d. Braille reading and writing: 3 semester hours. Includes instruction in the various technologies used by students who use Braille; basic instruction on transcription of advanced Braille codes, [including uncontracted and contracted Unified English Braille,] music, foreign language, chemistry, [~~computer Braille,~~] and Nemeth code (Braille mathematics code);
8VAC20-23-550. Special education – general curriculum K-12. (Page 108) **8VAC20-23-570. Special education – general**	**8VAC20-23-550. Special education – general curriculum K-12.** **8VAC20-23-570. Special education – general curriculum middle grades 6-8 (add-on endorsement).** **8VAC20-23-580. Special education – general curriculum secondary grades 6-12 (add-on endorsement).** [3.Completed a practicum of at least 45 instructional hours. This practicum shall include a minimum of 45 instructional hours of

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curriculum middle grades 6-8 (add-on endorsement). Page (117) **8VAC20-23-580. Special education – general curriculum secondary grades 6-12 (add-on endorsement).** Page (121) Revised requirements to add a practicum of at least 45 instructional hours	successful teaching experiences with students with disabilities accessing the general curriculum in a public or an accredited nonpublic school. In lieu of the practicum, one year of successful, full-time teaching experience with students with disabilities accessing the general curriculum in a public or an accredited nonpublic school may be accepted provided the teacher is assigned a mentor holding a valid license with an endorsement in special education.]
8VAC20-23-200. through 8VAC20-23-700. Amended to clarify the requirement that a baccalaureate degree is required from a regionally accredited college or university, except for individuals seeking the Technical Professional License	**8VAC20-23-200 through 8VAC20-23-700.**
LICENSURE REGULATIONS GOVERNING SUPPORT PERSONNEL	
8VAC20-23-630. Division Superintendent License. (Page 131) Amended the division superintendent license requirements to require <u>three years</u> of successful experience in a senior leader position for Option IV	**8VAC20-23-630. Division Superintendent License.** 4. Option IV. The individual must: a. Hold an earned master's degree or its equivalent from a regionally accredited college or university; b. Have [~~held~~a minimum of three years of successful, full-time experience in] a senior leadership position[,] such as chief executive officer or senior military officer; and c. Be recommended by a school board interested in employing the individual as superintendent.

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8VAC20-23-640. Mathematics specialist for elementary education. (Page 137) Amended requirements for clarity	**8VAC20-23-640. Mathematics specialist for elementary education.** Endorsement requirements. The candidate must have: [~~1. Earned a baccalaureate degree from a regionally accredited college or university and an endorsement in a teaching area;~~] [1~~2~~]. Completed at least three years of successful, full-time teaching experience in a public or accredited nonpublic school in which the teaching of mathematics was an important responsibility; and [2~~3~~]. Either: a. Graduated from a[~~n~~graduate-level] approved mathematics specialist for elementary preparation program - master's [degree from a regionally accredited college or university required~~level~~]; or b. Completed a [~~master's~~graduate-~~]~~level program in mathematics, mathematics education, or related education field [-master's degree from a regionally accredited college or university required-] with at least 21 semester hours of [~~undergraduate or~~]
8VAC20-23-650. Mathematics specialist for [elementary and] middle education. (Page 137) Amended the mathematics specialist proposed endorsements. [Currently, Virginia offers one mathematics specialist endorsement -- mathematics specialist for elementary and middle education. In the <u>proposed</u> regulatory process, the one endorsement was recommended to be changed to two endorsements, mathematics specialist for elementary education and mathematics specialist for middle education. In the <u>final stage</u>, the following endorsements are recommended: mathematics specialist for elementary education and mathematics specialist for	**8VAC20-23-650. Mathematics specialist for [elementary and] middle education.** Endorsement requirements. The candidate must have: [~~1. Earned a baccalaureate degree from a regionally accredited college or university and an endorsement in a teaching area;~~] [1~~2~~]. Completed at least three years of successful, full-time teaching experience in a public or accredited nonpublic school in which the teaching of mathematics was an important responsibility; [2~~3~~]. [Hold ~~the secondary~~a M~~m~~athematics – ~~A~~algebra I (add-on) or Mathematics (secondary)] teaching endorsement (6-12); and [3~~4~~]. Either: a. Graduated from a[~~n~~graduate-level] approved mathematics specialist for [elementary and] middle education preparation program [~~–~~] master's [degree from a regionally accredited college or university required~~level~~]; or b. Completed a [graduate- ~~master's~~]level program in mathematics, mathematics education, or related education field [– master's degree from a regionally accredited college or university required –] with at least 21semester hours of [~~undergraduate or~~] graduate mathematics coursework distributed in the following areas;

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elementary and middle education.] Amended the mathematics specialist for elementary and middle education endorsement to require either a mathematics – algebra I or mathematics endorsement	
8VAC20-23-700. School social worker. (Page 141) Revised the requriements for the school social worker endorsement to recognize an earned advanced standing master's of social work degree from a regionally accredited college or university with a minimum of 30 graduate-level semester hours.	**8VAC20-23-700. School social worker.** 1. Earned a master's of social work degree from a regionally accredited college or university [~~school of social work~~] with a minimum of 60 graduate-level semester hours; [or earned an advanced standing master's of social work degree from a regionally accredited college or university with a minimum of 30 graduate-level semester hours;]
REVOCATION, CANCELLATION, SUSPENSION, DENIAL, AND REINSTATEMENT OF [~~TEACHING~~] LICENSES	
8VAC20-23-720. Revocation. (Page 143) Amended to clarify the process	**8VAC20-23-720. Revocation.** A. A license issued by the Virginia Board of Education may be revoked for the following reasons: 5. Conviction of any misdemeanor involving a [~~minor~~]child [(minor)]or drugs[~~,~~] [(]not[~~ including~~] alcohol[)]; 10. Revocation, suspension, surrender, cancellation, invalidation, or denial of, or other adverse action against, a teaching, administrator, pupil personnel services, or other education-related certificate or license by another state, territory, or country; [or denial of an application for any such certificate or license;] 11. Founded case of child abuse or neglect[~~, after all appeal rights have been exhausted~~]; B. Procedures. 1. A complaint may be filed by anyone, but it shall be the duty of a division superintendent, principal, or other responsible school employee to file a complaint in any case in which he has knowledge that a holder of a license is guilty of any offense set forth in subsection A of this section. The person making the

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	complaint shall submit the complaint in writing to the appropriate division superintendent. [If the subject of the complaint is the division superintendent, the person making the complaint may submit the complaint to the chair of the local school board.] C. Petition for revocation. Should the division superintendent or local school board conclude that there is reasonable cause to believe that a [~~complaint against the holder of a license is well founded~~basis for revocation of the license exists], 4. A statement of rights of the person [~~charged under this chapter~~against whom the petition is being filed]. The statement of rights shall [notify the person that any adverse action against a license, including revocation, will be reported to division superintendents in Virginia and, through a national clearinghouse, to chief state school officers of the other states and territories of the United States. The statement also shall] include notification to the person of the right to cancel the license if he chooses not to contest the allegations in the petition. The statement must notify the individual that he shall receive a notice of cancellation that will include the statement: "The license holder voluntarily returned the license in response to a petition for revocation." The individual also shall be notified that the cancellation of the license will be reported to division superintendents in Virginia and[, through a national clearinghouse,] to chief state school officers of the other states and territories of the United States; H. Reinstatement of license. A license that has been revoked may be reinstated by the Virginia Board of Education after five years if the board is satisfied that reinstatement is in the best interest of the public schools of the Commonwealth of Virginia. The individual seeking reinstatement must submit a written request and completed application to the board. [~~The request for reinstatement will be reviewed by the Superintendent's Investigative Panel pursuant to 8VAC20-23-780.~~]
	8VAC20-23-730. Cancellation. A. A license may be canceled by the voluntary return of the license by the license holder [in response to a petition for revocation or suspension or pursuant to a court order]. B. [~~However, if the request for cancellation is in response to a petition for revocation, t~~T]he individual [also]shall acknowledge that he understands that the notice of cancellation will include the statement: "The license holder voluntarily returned the license in response to a petition for revocation [or suspension or a court order]. C. Petition for revocation. Should the division superintendent or local school board conclude that there is reasonable cause to believe that a [~~complaint against the holder of a license is well founded~~basis for revocation of the license exists], the license holder shall be notified of the complaint by a written petition for revocation of a license signed by the division superintendent. A copy of such petition shall be sent by certified

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	mail, return receipt requested, to the license holder's last known address.
	8VAC20-23-740. Suspension. B. Procedures. 1. [If the subject of the complaint is the division superintendent, the person making the complaint may submit the complaint to the chair of the local school board.] C. Petition for suspension. Should the division superintendent or local school board conclude that there is reasonable cause to believe that a [~~complaint against the holder of a license is well founded~~basis for suspension of the license exists], the license holder shall be notified of the complaint by a written petition for suspension of a license signed by the division superintendent. A copy of such petition shall be sent by certified mail, return receipt requested, to the license holder's last known address. D. Form of petition. The petition for the suspension of a license shall set forth: 1. The name and last known address of the person against whom the petition is being filed; 2. The type of license and the license number held by the person against whom the petition is being filed; 3. The offenses alleged and the specific actions that comprise the alleged offenses; 4. A statement of the rights of the person against whom the petition is being filed. The statement of rights shall notify the person [that the license may be suspended for up to five years with the period of suspension starting either as of the date of the board's order or retroactively from the date of the offense giving rise to the suspension, depending on the terms of the board's order and that any adverse action against a license, including suspension, will be reported to division superintendents in Virginia and, through a national clearinghouse, to chief state school officers of the other states and territories of the United States. The statement also shall notify the person] of the right to cancel the license if he chooses not to contest the allegations in the petition [and notify the individual that if he cancels the license,] he shall receive a notice of cancellation that will include the statement: "The license holder voluntarily returned the license in response to a petition for suspension." The individual also shall be notified that the cancellation [~~and period of suspension~~] will be reported to division superintendents in Virginia and[, through a national clearinghouse,] to chief state school officers of the other states and territories of the United States;
	8VAC20-23-760. Expired license[s~~]~~. ~~[A. The holder of a license that has expired must apply for a license according to the procedures set forth in 8VAC20-23-110 or 8 VAC20-23-~~

SECTION	PROPOSED REVISION
	~~40. Such application may be denied renewal by the Superintendent of Public Instruction for any of the reasons specified in 8VAC20-23-750 A. No such denial will be ordered unless the license holder is given the opportunity for the hearing specified in 8VAC20-23-780 C.~~ ~~B. A.~~ Action against a] license issued by the Virginia Board of Education may be [~~revoked or suspended~~taken] for any of the reasons listed in 8VAC20-23-720 A or 8VAC20-23-740 A, even if the license is expired, as long as the basis for action occurred prior to the issuance of the license or while the license was active.
	8VAC20-23-770. Right to counsel and transcript. A shall be recorded, and[,] upon written request[,] the license holder or applicant shall be provided a transcript of the hearing at his own expense. Any such hearing before the Virginia Board of Education shall be recorded, and[,] upon written request[,] the license holder or applicant shall be provided a transcript of the hearing at no charge.
	8VAC20-23-780. Action by the Superintendent of Public Instruction and the Virginia Board of Education. B. The Superintendent of Public Instruction is authorized to approve the issuance of licenses for individuals who have a misdemeanor conviction[~~s~~] related to drugs, not including alcohol, based on a review of the cases. No individual [~~would~~will] be denied a license without a hearing of the Virginia Board of Education as required in this section. C. [The applicant or license holder and representatives of the local school division are entitled to be present with counsel and witnesses, if so desired, at the hearing of the Virginia Board of Education.] The Virginia Board of Education, or its duly designated committee, shall consider the recommendation of the Superintendent of Public Instruction and such relevant and material evidence as the applicant or license holder may desire to present at the hearing[; however, the applicant or license holder may not introduce evidence that was not presented or available to the Superintendent's Investigative Panel unless requested by the Panel or the Board]. At its discretion, the Virginia Board of Education may ask the applicant or license holder questions. At the conclusion of the hearing, the Virginia Board of Education will announce its decision.
	8VAC20-23-790. Right of applicant or license holder to appear at hearing. The local school board or Virginia Board of Education, at its discretion, may continue such hearings for a reasonable time if the applicant or license holder is prevented from appearing in person for reasons such as [a]documented medical [condition]or mental impairment.
	8VAC20-23-800. Notification. Notification of the revocation, suspension, cancellation, denial, or reinstatement of a license shall be made by the Superintendent of Public Instruction, or his designee, to division superintendents in Virginia and[, through a national clearinghouse,] to chief state school officers of the other states and territories of the United States.

ATTACHMENT B

Proposed *Revisions to the Licensure Regulations for School Personnel*

Presented to the Virginia Board of Education
April 28, 2016

Virginia Department of Education
Division of Teacher Education and Licensure
P. O. Box 2120
Richmond, Virginia 23218-2120

PROPOSED *LICENSURE REGULATIONS FOR SCHOOL PERSONNEL*

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Project 3476 - Proposed

STATE BOARD OF EDUCATION

CHAPTER 23

LICENSURE REGULATIONS FOR SCHOOL PERSONNEL

Part I

Definitions

8VAC20-23-10. Definitions.

The following words and terms when used in this chapter shall have the *following* meanings indicated unless the context clearly implies otherwise:

"Accredited institution" means an institution of higher education accredited by a regional accrediting agency recognized by the United States Department of Education.

"Accredited virtual school or program" means a virtual school or program accredited by one of the accrediting agencies recognized by the Virginia Department of Education. [School divisions operating as multi-division online providers may be deemed as meeting accreditation requirements if a majority of its schools are fully accredited by the Virginia Board of Education.]

"Alternate route to licensure" means a nontraditional route to licensure available to individuals who meet the criteria specified in 8VAC20-23-90.

"Approved program" means a professional education program recognized as meeting state standards for the content and operation of such programs so that graduates of the program will be eligible for state licensure. The Virginia Board of Education has the authority to approve programs in Virginia.

"Cancellation" means the withdrawal of a teaching license following the voluntary return of the license by the license holder.

"Certified provider" means a provider certified by the Virginia Department of Education to provide preparation and training for applicants seeking the Provisional License specified in 8VAC20-23-90.

"Collegiate Professional License" means a five-year, renewable [teaching] license available to an individual who has satisfied all requirements for licensure set forth in this chapter, including an earned baccalaureate degree from a regionally accredited college or university and the professional teacher's assessments prescribed by the Virginia Board of Education.

"Content area coursework" means courses at the undergraduate level (i.e., two-year or four-year institution) or at the graduate level that will not duplicate previous courses, or the level of coursework, taken in humanities, English, history and social sciences, sciences, mathematics, health and physical education, and fine arts. These courses are usually available through the college or department of arts or sciences.

"Denial" means the refusal to grant a teaching license to a new applicant or to an applicant who is reapplying after the expiration of a license.

"Division Superintendent License" means a five-year, renewable license available to an individual who has completed an earned master's degree from a regionally accredited college or university and meets the requirements specified in 8VAC20-23-630. The individual's name must be listed on the Virginia Board of Education's list of eligible division superintendents.

"Experiential learning" means a process of applying for an initial license through the alternate route as prescribed by the Virginia Board of Education and meeting the criteria specified in 8VAC20-23-90 E to be eligible to request experiential learning credits in lieu of the coursework for the endorsement (teaching) content area.

"Industry Certification credential" means an active career and technical education credential that is earned by successfully completing a Board of Education-approved industry certification examination, being issued a professional license in the Commonwealth, or successfully completing an occupational competency examination.

"International Educator License" means a five-year cultural exchange opportunity for Virginia students and international teachers. The International Educator License is a professional teaching license issued for no more than five years to an exchange teacher with citizenship in a nation other than the United States of America and employed as teacher in a Virginia public school or an accredited nonpublic school.

"Licensure by reciprocity" means a process used to issue a license to an individual coming into *the Commonwealth* from another state when that individual meets certain conditions specified in this chapter.

"Mentor" means a classroom teacher hired by the local school division who has achieved continuing contract status or other instructional personnel including retired teachers who meet local mentor selection criteria. The mentor should work in the same building as the beginning teacher or be instructional personnel who is assigned solely as a mentor. A mentor should be assigned a limited number of teachers at any time. Instructional personnel who are not assigned solely as mentors should not be assigned to more than four teachers at any time. Mentors guide teachers in the program through demonstrations, observations, and consultations.

"Online Teacher License" means a five-year, renewable license valid only for teaching online courses. Teachers who hold a five-year renewable license issued by the Virginia Board of Education may teach online courses for which they are properly endorsed and do not need to seek this license.

"Postgraduate Professional License" means a five-year, renewable license available to an individual who has qualified for the Collegiate Professional License and who holds an appropriate earned graduate degree from a regionally accredited college or university.

["Professional studies" means courses and other learning experiences designed to prepare individuals in the areas of human development and learning, curriculum and instruction, assessment of and for learning, classroom and behavior management, foundations of education and the teaching profession, language and literacy, and supervised clinical experiences;]

"Professional teacher assessment" means those tests or other requirements mandated for licensure as prescribed by the Virginia Board of Education.

"Provisional License" means a nonrenewable license valid for a specified period of time not to exceed three years issued to an individual who has allowable deficiencies for full licensure as set forth in this chapter. The individual must have a minimum of an undergraduate degree from a regionally accredited college or university, with the exception of those individuals seeking the Technical Professional License. The Provisional License [will be issued for a three-year validity period], with the exception of ~~those individuals seeking licensure through a~~ the Provisional C~~c~~areer S~~s~~witcher License ~~program who~~ that will be initially issued ~~a~~ for a one-year validity period ~~Provisional License~~ and ~~individuals seeking a~~ Teach for America P~~p~~rovisional L~~l~~icense~~,~~ ~~will be~~ issued for two years. ~~Individuals may apply for a third year on the Provisional License by submitting documentation indicating that all licensure assessments prescribed by the Virginia Board of Education have been taken.~~] Individuals must complete all requirements, including passing all licensure assessments, for a renewable license within the validity period of the license.

"Pupil Personnel Services License" means a five-year, renewable license available to an individual who has earned an appropriate graduate degree from a regionally accredited college or university with an endorsement as a school counselor, school psychologist, school social

worker, or vocational evaluator. This license does not require teaching experience unless otherwise outlined under the specific endorsement's requirements.

"Renewable license" means a license issued by the Virginia Board of Education for five years to an individual who meets all requirements specified in this chapter.

"Revocation" means the withdrawal of a teaching license.

"School Manager License" means a five-year, renewable license intended to provide for a differentiation of administrative responsibilities in a school setting. A school manager is licensed to administer noninstructional responsibilities in an educational setting. For example, a school manager is restricted from evaluating teachers, supervising instruction, developing and evaluating curriculum, and serving as a school's student disciplinarian. The license is available to a candidate who holds a baccalaureate degree from a regionally accredited college or university; has three years of success managerial experience; and is recommended for the license by a Virginia school division superintendent.

"Suspension" means the temporary withdrawal of a teaching license.

"Technical Professional License" means a five-year, renewable license available to an individual who has graduated from an accredited high school (or possesses a [~~General Educational Development Certificate~~ Virginia Board of Education-approved high school equivalency credential)]; has exhibited academic proficiency, technical competency, and successful occupational experience; and meets the requirements specified in subdivision 4 of 8VAC20-23-50.

"Teach For America License" means a two-year provisional license available to an individual who is a participant in Teach For America and meets the requirements specified in 8VAC20-2~~2~~3-50.

Part II

Administering the Regulations

8VAC20-23-20. Administering this chapter.

A. In administering this chapter, modifications may be made in exceptional cases by the Superintendent of Public Instruction. Proposed modifications shall be made in writing to the Superintendent of Public Instruction, Commonwealth of Virginia, Virginia Department of Education, P.O. Box 2120, Richmond, Virginia 23218-2120.

B. In administering this chapter, competencies required for endorsement areas are outlined in the [~~Regulations Governing the Review and Approval of Education Programs in Virginia~~ *Regulations Governing the Review and Approval of Education Programs in Virginia*] (8VAC20-543). This document should be referenced for detailed information regarding coursework content for endorsements. Individuals must complete the semester hours required for endorsement areas, or the equivalent, that must be documented and approved by the Department of Education.

Part III

Licensure

8VAC20-23-30. Purpose and responsibility for licensure.

The primary purpose for licensing teachers and other school personnel is to maintain standards of professional competence. The responsibility for licensure is set forth in § 22.1-298.1 of the Code of Virginia, which states that the Virginia Board of Education shall prescribe by regulation the requirements for licensure of teachers.

8VAC20-23-40. Conditions for licensure.

A. Applicants for licensure must:

1. Be at least 18 years of age;

2. Pay the appropriate fees as determined by the Virginia Board of Education and complete the application process;

3. Have earned a baccalaureate degree, with the exception of the Technical Professional License, from a regionally accredited college or university and meet requirements for the license sought. Persons seeking initial licensure through approved programs from Virginia institutions of higher education shall only be licensed as instructional personnel [if the education endorsement programs have approval by the ~~by the Virginia Board of Education if the professional education programs offered at such institutions have been accredited by a national accrediting agency and the education (endorsement) programs have final approval by the~~] Virginia Board of Education; [individuals who have earned a degree from an institution in another country must hold the equivalent of a regionally accredited college or university degree in the United States, as verified by a Department of Education approved credential agency, for the required degree for the license;] and

4. Possess good moral character (i.e., free of conditions outlined in Part VII (8VAC20-23-720 et seq.) of this chapter[)].

B. All candidates who hold at least a baccalaureate degree from a regionally accredited college or university and who seek an initial Virginia teaching license must obtain passing scores on professional teacher's assessments prescribed by the Virginia Board of Education. With the exception of the career switcher program that requires assessments as prerequisites, individuals must complete the professional teacher's assessments requirements within the three-year validity of the initial provisional license. Candidates seeking a Technical Professional License, International Educator License, School Manager License, or Pupil Personnel Services License are not required to take the professional teacher's assessments. Individuals who hold a

valid out-of-state license (full credential without deficiencies) and who have completed a minimum of three years of full-time, successful teaching experience in a public or an accredited nonpublic school, kindergarten through grade 12, outside of Virginia are exempt from the professional teacher's assessment requirements. Documentation must be submitted to verify the school's status as a public or an accredited nonpublic school.

C. All individuals seeking an initial endorsement in early/primary education preK-3, elementary education preK-6, special education-general curriculum, special education-deaf and hard of hearing, special education-blindness and visual impairments, and individuals seeking an endorsement as a reading specialist must obtain passing scores on a reading instructional assessment prescribed by the Virginia Board of Education.

D. Licensure by reciprocity is set forth in 8VAC20-23-100. A school leaders [licensure] assessment prescribed by the Virginia Board of Education must be met for all individuals who are seeking an endorsement authorizing them to serve as principals and assistant principals in the public schools. Individuals seeking an initial administration and supervision endorsement who are interested in serving as central office instructional personnel are not required to take and pass the school leaders [licensure] assessment prescribed by the Virginia Board of Education.

E. Individuals seeking initial licensure must demonstrate proficiency in the use of educational technology for instruction, complete study in child abuse recognition and intervention in accordance with curriculum guidelines developed by the Virginia Board of Education in consultation with the Virginia Department of Social Services, and receive professional development in instructional methods tailored to promote student academic progress and effective preparation for the Standards of Learning end-of-course and end-of-grade assessments.

F. Every person seeking initial licensure shall provide evidence of completion of certification or training in emergency first aid, cardiopulmonary resuscitation, and use of automated external defibrillators. The certification or training program shall be based on the current national evidenced-based emergency cardiovascular care guidelines for cardiopulmonary resuscitation and the use of an automated external defibrillator, such as a program developed by the American Heart Association or the American Red Cross. The Virginia Board of Education shall provide a waiver for this requirement for any person with a disability whose disability prohibits such person from completing the certification or training.

G. The teacher of record for verified credit courses for high school graduation must hold a Virginia license with the appropriate content endorsement.

H. Every teacher seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education shall have an industry certification credential, as defined in 8VAC-22-10, in the area in which the teacher seeks endorsement. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

8VAC20-23-50. Types of licenses; dating licenses.

A. The following types of licenses are available:

1. Provisional License. The Provisional License is a nonrenewable license valid for a period not to exceed three years issued to an individual who has allowable deficiencies for full licensure as set forth in this chapter. The Provisional License will be issued for [~~two~~three] years, with the exception[s] of[~~ those individuals seeking a~~ the] Provisional [(Career Switcher)] License [issued for one year~~through a career switcher program~~ and

the Provisional Teach for America License issued for two years]. [~~Individuals may apply for a third year on the Provisional License by submitting documentation indicating that all licensure assessments prescribed by the Virginia Board of Education (http://doe.virginia.gov/teaching/licensure/prof_teacher_assessment.pdf) have been taken.~~] [~~The Provisional (Career Switcher) License will be dated as set forth in 8VAC20-23-90 A 2.~~] Individuals must complete the requirements including passing all licensure assessments, for the renewable five-year license within the validity period of the Provisional License. The individual must have a minimum of an undergraduate degree from a regionally accredited college or university, with the exception of those individuals seeking the Technical Professional License.

2. Collegiate Professional License. The Collegiate Professional License is a five-year, renewable license available to an individual who has satisfied all requirements for licensure, including an earned undergraduate degree from a regionally accredited college or university and the professional teacher's assessments prescribed by the Virginia Board of Education.

3. Postgraduate Professional License. The Postgraduate Professional License is a five-year, renewable license available to an individual who has qualified for the Collegiate Professional License and who holds an appropriate earned graduate degree from a regionally accredited college or university.

4. Technical Professional License. The Technical Professional License is a five-year, renewable license available to a person who has graduated from an accredited high school or possesses a [~~General Educational Development Certificate~~ Virginia Board of Education-approved high school equivalency credential]; has exhibited academic proficiency, skills in literacy and communication, technical competency, and successful occupational experience; [~~and~~] has completed nine semester hours of specialized

professional studies credit from a regionally accredited college or university [and has completed one year of successful, full-time teaching experience in a public school or accredited nonpublic school in the area of endorsement]. The nine semester hours of professional studies coursework must include three semester hours of human development and learning, three semester hours of curriculum and instruction, and three semester hours of applications of instructional technology or classroom and behavior management. The Technical Professional License is issued at the recommendation of a[~~n~~ Virginia] employing educational agency in the areas of career and technical education, educational technology, and military science. Individuals seeking an endorsement to teach military science must have the appropriate credentials issued by the United States military. The employing Virginia educational agency must ensure the credentials issued by the United States military are active during the period the individual is teaching. In addition to demonstrating competency in the endorsement area sought, the individual must:

a. Hold a valid license issued by the appropriate Virginia board for those program areas requiring a license and a minimum of two years of successful experience at the journeyman level or an equivalent. The employing Virginia educational agency must ensure that the valid license issued by the appropriate Virginia board for the occupational program area is active during the period the individual is teaching;

b. Have completed a registered apprenticeship program and two years of successful experience at the journeyman level or an equivalent level in the trade; or

c. Have four years of successful work experience at the management or supervisory level or equivalent or have a combination of four years of training and work experience at the management or supervisory level or equivalent.

Individuals holding the Technical Professional License who seek the Collegiate Professional or Postgraduate Professional License must meet the requirements of the respective licenses.

5. School Manager License. The school manager license is a five-year, renewable license intended to provide for the differentiation of administrative responsibilities in a school setting. A school manager is licensed to administer noninstructional responsibilities in an educational setting. For example, a school manager is restricted from evaluating teachers, supervising instruction, developing and evaluating curriculum, and serving as a school's student disciplinarian. The license is available to a candidate who holds a baccalaureate degree from a regionally accredited college or university, has three years of successful managerial experience, and is recommended for the license by a Virginia school division superintendent.

6. Pupil Personnel Services License. The Pupil Personnel Services License is a five-year, renewable license available to an individual who has earned an appropriate graduate degree from a regionally accredited college or university with an endorsement for school counselor, school psychologist, school social worker, or vocational evaluator. This license does not require teaching experience, unless otherwise outlined under the specific endorsement's requirements.

7. Division Superintendent License. The Division Superintendent License is a five-year, renewable license available to an individual who has completed an earned master's degree from a regionally accredited college or university and meets the requirements specified in 8VAC20-23-630. The individual's name must be listed on the Virginia Board of Education's list of eligible division superintendents.

8. International Educator License. The International Educator License provides a five-year cultural exchange opportunity for Virginia students and international teachers. The

International Educator License is a professional teaching license issued to an exchange teacher with citizenship in a nation other than the United States of America and who is employed as a teacher in a Virginia public or accredited nonpublic school. To be issued the five-year, nonrenewable International Educator License, an individual serving as a cultural exchange teacher in Virginia must:

a. Be employed by a Virginia public or an accredited nonpublic school;

b. Hold non-United States citizenship and be a nonpermanent resident; and

c. Meet the following requirements as verified by a state-approved, federally-designated Exchange Visitor Program (22 CFR Part 62):

(1) Be proficient in written and spoken English;

(2) Demonstrate competence in the appropriate academic subject area or areas by meeting the credential requirements for a qualified teacher in the exchange country;

(3) Hold the United States equivalent of a baccalaureate degree or higher as determined by an approved credential agency; and

(4) Complete at least two years of successful full-time teaching experience that enables the educator to fulfill a similar assignment in his home country or is comparable to those requirements for Virginia teachers.

If an individual meets requirements of subdivisions 8 a, 8 b, 8 c (1), 8 c (2), and 8 c (3) of this subsection and has completed at least one year, but less than two years, of successful full-time teaching experience that enables the educator to fulfill a similar assignment in his home country or is comparable to those requirements for Virginia teachers, the International Educator License will be issued for three years with an option to extend the nonrenewable International Educator License for the additional two years upon meeting all teacher assessments prescribed by the Virginia Board of Education

and a recommendation of the Virginia employing school division or accredited nonpublic school.

Individuals who have been issued an International Educator License who seek a five-year, renewable license will need to meet all licensure and endorsement requirements, including applicable assessments prescribed by the Virginia Board of Education.

9. Online Teacher License. The Online Teacher License is a five-year, renewable license valid only for teaching online courses. Teachers who hold a five-year renewable license issued by the Virginia Board of Education may teach online courses for which they are properly endorsed and do not need to seek this license.

a. The individual is required to meet requirements for an endorsement in a content (teaching) area, professional studies requirements, and qualifying scores on professional teacher's assessments as prescribed by the Virginia Board of Education. In addition, the individual must complete a three-semester-hour course in online instructional procedures.

Online instructional procedures: 3 semester hours. Skills in this area shall contribute to an understanding of the principles of online learning and online instructional strategies and the application of skills in the ability to use the Internet for teaching, learning, and management; design, deliver, and support instruction in an online environment; adapt strategies for a variety of course models (e.g., synchronous and asynchronous); select, adapt, and create rich multimedia for instruction; adapt individualized education program requirements to online course practices, as appropriate; use data to meet individual students needs; and employ innovative teaching strategies in an online environment. Demonstrated proficiency of advanced skills in the following must be addressed: use of communication technologies to interact with and engage students, parents, and mentors; use of education

technologies; management of instructional activities in a technology-mediated environment; and nontraditional content delivery methods.

b. Online teaching experience is not acceptable to meet the full-time teaching experience for other license types, such as a Division Superintendent License, or for endorsements, such as for the reading specialist, school counselor, or administration and supervision endorsements. The Online Teacher License may be issued if requirements have been met as one of the following licenses to individuals teaching only online courses:

(1) Online Teacher (Postgraduate Professional) License - a five-year, renewable license available to an individual who has qualified for the Online Teacher (Collegiate Professional) License and who holds an appropriate earned graduate degree from a regionally accredited college or university.

(2) Online Teacher (Collegiate Professional) License - a five-year, renewable teaching license available to an individual who has satisfied all requirements for licensure, including an earned baccalaureate degree from a regionally accredited college or university, endorsement and professional studies requirements, and the professional teacher's assessments prescribed by the Virginia Board of Education, or

(3) Online Teacher (Technical Professional) License - a five-year, renewable teaching license available to an individual who has graduated from an accredited high school or possesses a [~~General Educational Development Certificate~~ Virginia Board of Education-approved high school equivalency credential)]; has exhibited academic proficiency, technical competency, and occupational experience; and meets the requirements specified in subdivision 4 of this section. An individual seeking an Online Teacher (Technical Professional) License must be recommended

for the license by a Virginia public school, a Virginia accredited nonpublic school, or an accredited virtual school program.

c. A nonrenewable Online Teacher (Provisional) License may be issued for a period not to exceed three years to an individual who has allowable deficiencies for full licensure as set forth in 8VAC20-23-90 B. The Online (Provisional) License will be issued for [~~two~~three] years. [~~Individuals may apply for a third year on the Online (Provisional) License by submitting documentation indicating that all licensure assessments prescribed by the Virginia Board of Education have been taken.~~] The individual must have a minimum of an undergraduate degree from a regionally accredited college or university, with the exception of those individuals seeking the Technical Professional License. Individuals must complete all requirements for a renewable Online Teacher License within the validity period of the license.

10. Teach For America License. The Teach For America License is a two-year provisional license.

a. This provisional license is available to any participant in Teach For America, a nationwide nonprofit organization focused on closing the achievement gaps between students in high-income and low-income areas, who submits an application and meets the following requirements:

(1) Holds, at minimum, a baccalaureate degree from a regionally accredited institution of higher education;

(2) Has met the requirements prescribed by the Virginia Board of Education for all endorsements sought or has met the qualifying scores on the content area assessment prescribed by the board for the endorsements sought;

(3) Possesses good moral character according to criteria developed by the Virginia Board of Education;

(4) Has been offered and has accepted placement in Teach For America;

(5) Has successfully completed preservice training and is participating in the professional development requirements of Teach For America, including teaching frameworks, curricula, lesson planning, instructional delivery, classroom management, assessment and evaluation of student progress, classroom diversity, and literacy development;

(6) Has an offer of employment from a local school board to teach in a public elementary or secondary school in the Commonwealth or a preschool program that receives state funds pursuant to subsection C of § 22.1-199.1 of the Code of Virginia; and

(7) Receives a recommendation from the employing school division for a Teach For America License in the endorsement area in which the individual seeks to be licensed.

b. In addition to the criteria set forth in subdivision 10 a of of this subsection, any individual who seeks an endorsement in early childhood, early/primary, or elementary education shall either (i) agree to complete such coursework in the teaching of reading as may be prescribed by the Virginia Board of Education pursuant to 8VAC20-23-130 during the first year of employment or (ii) achieve a passing score on a reading instructional assessment prescribed by the Virginia Board of Education.

c. Teachers issued a Teach For America provisional license shall not be eligible for continuing contract status while employed under the authority of a Teach For

America license and shall be subject to the probationary terms of employment specified in § 22.1-303 of the Code of Virginia.

d. The Virginia Board of Education may extend any Teach For America License for one additional year upon request of the employing school division, provided that no Teach For America License shall exceed a total of three years in length.

e. Notwithstanding any provision of law to the contrary, upon completion of at least two years of full-time teaching experience in a public elementary or secondary school in the Commonwealth or a preschool program that receives state funds pursuant to subsection C of § 22.1-199.1 of the Code of Virginia, an individual holding a Teach For America License shall be eligible to receive a renewable license if he has (i) achieved satisfactory scores on all professional teacher assessments required by the Virginia Board of Education and (ii) received satisfactory evaluations at the conclusion of each year of employment.

f. Notwithstanding any provision of law to the contrary, the Virginia Board of Education shall issue a Teach For America License to any individual who (i) has completed two years of successful teaching in the Teach For America program in another state, (ii) is not eligible to receive a renewable license, and (iii) meets the criteria set forth in subdivision 10 a of this subsection.

B. All licenses will be effective from July 1 in the school year in which the application is made. An employing Virginia public school division, agency, or accredited nonpublic school is required to notify employees in writing at the time of employment of the need to meet appropriate assessment requirements for licensure.

8VAC20-23-60. Designations on licenses for career paths to teaching.

A. Designations on licenses will reflect stages in the professional development of teachers and promote continuing growth and career paths as educators.

B. Teaching licenses may be issued with one of the following designations, and the designation will be processed as an add-on endorsement. These designations will not apply to the Division Superintendent License, School Manager License, International Educator License, or Pupil Personnel Services License.

1. Career Teacher: This voluntary teacher designation will be issued on a renewable teaching license for individuals who have gained continuing contract status in Virginia and who apply for the Career Teacher designation.

2. Mentor Teacher: This voluntary teacher designation will be issued on a renewable teaching license for individuals who have (i) achieved the Career Teacher designation, (ii) received a recommendation for the designation from an employing Virginia school division superintendent or designee or accredited nonpublic school head, (iii) served at least three years as a mentor teacher in Virginia, (iv) documented responsibilities as a mentor, and (v) completed a local or state mentor teacher training program in accordance with the Virginia Board of Education requirements for mentor teachers in the [~~Virgnia~~Virginia] Board of Education Mentor Teacher Guidelines[.]

[~~(http://www.doe.virginia.gov/teaching/career_resources/mentor/program_creation_guidelines.pdf).~~]

3. Teacher as Leader: This voluntary teacher designation will be issued on a renewable teaching license for individuals who have (i) achieved the Career Teacher designation; (ii) completed at least five years of successful, full-time teaching experience in a Virginia public school or accredited nonpublic school; (iii) received the recommendation from an

employing Virginia school division superintendent or designee or an accredited nonpublic school head; (iv) and completed one of the following:

a. National Board Certification or a nationally recognized certification program approved by the Virginia Board of Education and a recommendation from an employing Virginia school division superintendent or designee or accredited nonpublic school head and documentation in an approved Department of Education format verifying the individual's demonstrated skills and abilities as a school leader and direct contributions to school effectiveness and student achievement; or

b. A recommendation from an employing Virginia school division superintendent or designee or accredited nonpublic school head and documentation in an approved Department of Education format verifying the individual's demonstrated skills and abilities as a school leader and direct contributions to school effectiveness and student achievement.

8VAC20-23-70. Additional endorsements.

A. An individual who holds a teaching license may add an additional teaching endorsement to the license by passing a rigorous academic subject test for endorsements in which a test is prescribed by the Virginia Board of Education. This testing option does not apply to individuals (i) who are seeking an early/primary education preK-3 or elementary education preK-6 endorsement, special education endorsements, or a reading specialist endorsement or (ii) who hold a Technical Professional License, Vocational Evaluator License, Pupil Personnel Services License, School Manager License, or Division Superintendent License.

B. One or more endorsements may be added to a license provided specific endorsement requirements have been met. Written requests may be made by the licensed professional and should be directed to the Virginia employing educational agency [(if the individual has such

employment)] or college or university. If the request is not acted upon by the local educational agency or college or university within 30 days or is disputed, the license holder may make a written request for an additional endorsement directly to the Office of Professional Licensure, Virginia Department of Education. Written requests should be submitted by January 15 to be in effect by July 1 of the same year.

8VAC20-23-80. Deletion of an endorsement.

An endorsement may be deleted from a license at the request of the licensed professional. Written requests are made by the licensed professional and should be directed to the employing educational agency. If the request is not acted upon by the local educational agency within 30 days or is disputed, the license holder may make a written request for the deletion of an endorsement directly to the Office of Professional Licensure, Virginia Department of Education. Written requests should be submitted by January 15 to be in effect on July 1 of that year. Individuals who wish to add an endorsement that has been deleted must meet requirements for that endorsement at the time it is requested.

8VAC20-23-90. Alternate routes to licensure.

A. Career switcher alternate route to licensure for career professions - Provisional (Career Switcher) License. An alternate route is available to career switchers who seek teaching endorsements preK through grade 12 with the exception of special education.

1. An individual seeking a Provisional (Career Switcher) License through the career switcher program must meet the following prerequisite requirements:

a. An application process;

b. An earned baccalaureate degree from a regionally accredited college or university;

c. The completion of requirements for an endorsement in a teaching area or the equivalent through verifiable experience or academic study;

d. At least [~~five~~three] years of full-time work experience or its equivalent; and

e. Virginia qualifying scores on the professional teacher's assessments as prescribed by the Virginia Board of Education.

2. The Provisional (Career Switcher) License is awarded at the end of Level I preparation [for an initial validity period of one school year]. All components of the career switcher alternate route for career professions must be completed by the candidate.

3. The Level I requirements must be completed during the course of a single year and may be offered through a variety of delivery systems, including distance learning programs. If an employing agency recommends extending the Provisional (Career Switcher) License for a second year, the candidate will enter Level III of the program. Career switcher programs [must submit program documentation as set forth by the Virginia Department of Education for review and be certified every seven years~~must be certified~~] by the Virginia Department of Education.

a. Level I preparation. Intensive Level I preparation includes a minimum of 180 clock hours of instruction, including field experience. This phase includes, but is not limited to, [human development and learning;] curriculum and instruction, including technology[~~,~~;] [~~reading~~ language and literacy], [~~and other~~] specific course content relating to the Standards of Learning; [foundations of education and the teaching profession~~differentiation of instruction~~; classroom and behavior management; and assessment of and for learning~~instructional design based on assessment data; and human development and learning~~].

b. Level II preparation during first year of employment.

(1) Candidate seeks employment in Virginia with the one-year Provisional (Career Switcher) License.

(2) Continued Level II preparation during the first year of employment with a minimum of five seminars that expand the intensive preparation requirements listed in subdivision 3 a of this subsection. The five seminars will include a minimum of 20 cumulative instructional hours. A variety of instructional delivery techniques will be utilized to implement the seminars.

(3) One year of successful, full-time teaching experience in a Virginia public or accredited nonpublic school under a one-year Provisional (Career Switcher) License. A trained mentor must be assigned to assist the candidate during the first year of employment. Responsibilities of the mentor include, but are not limited to, the following:

(a) Collaborate with the beginning teacher in the development and implementation of an individualized professional development plan;

(b) Observe, assess, coach, and provide opportunities for constructive feedback, including strategies for self-reflection;

(c) Share resources and materials;

(d) Share best instructional, assessment, and organizational practices; classroom and behavior management strategies; and techniques for promoting effective communication; and

(e) Provide general support and direction regarding school policies and procedures.

(4) Upon completion of Levels I and II of the career switcher alternate route to licensure program and submission of a recommendation from the Virginia educational employing agency, the candidate will be eligible to apply for a five-year,

renewable license. Renewal requirements for the regular license will be subject to current regulations of the Virginia Board of Education.

c. Level III preparation, if required.

(1) Post preparation, if required, will be conducted by the Virginia employing educational agency to address the areas where improvement is needed as identified in the candidate's professional improvement plan; and

(2) Upon completion of Levels I, II, and III of the career switcher alternate route to licensure program and submission of a recommendation from the Virginia educational employing agency, the candidate will be eligible to receive a five-year renewable license.

4. Verification of program completion will be documented by the certified program provider and the division superintendent or designee.

5. Certified providers implementing a career switcher program may charge a fee for participation in the program.

B. An alternate route is available to individuals employed by a[~~n~~ Virginia] educational agency who seek teaching endorsements preK through grade 12. The employing Virginia educational agency may request a nonrenewable Provisional License on behalf of the individual if the individual has completed an allowable portion of professional studies and endorsement requirements. [An employed teacher may demonstrate meeting the teaching endorsement by passing a rigorous academic subject test for endorsements in which a test is prescribed by the Virginia Board of Education. This testing option does not apply to individuals (i) who are seeking an early/primary education preK-3 or elementary education preK-6 endorsement, special education endorsements, or a reading specialist endorsement or (ii) who hold a Technical Professional License, Vocational Evaluator License, Pupil Personnel Services License, School

Manager License, or Division Superintendent License.] This route [~~is~~] also [is] applicable to individuals who are employed by a Virginia public school, a Virginia accredited nonpublic school, or an accredited virtual school or program and who are seeking the Online Teacher License that is issued to teachers who teach only online courses. The Provisional License will be issued for [~~two~~three] years. [~~Individuals may apply for a third year on the Provisional License by submitting documentation indicating that all licensure assessments prescribed by the Virginia Board of Education have been taken.~~] The Provisional License is a nonrenewable teaching license valid for a period not to exceed three years. Individuals must complete all licensure requirements to become eligible for the five-year, renewable license.

1. An individual seeking a license through this alternate route must have met the following requirements:

a. Entered the teaching field through the alternate route to licensure upon the recommendation of the Virginia employing educational agency. For the Online Teacher Provisional License, individuals must be employed by a Virginia public school division, a Virginia accredited nonpublic school, or an accredited virtual school or program;

b. Earned a baccalaureate degree from a regionally accredited college or university with the exception of individuals seeking the Technical Professional License;

c. Have met requirements for the endorsement area; and

d. Need to complete an allowable portion of professional studies and licensure requirements.

2. The professional studies requirements for the appropriate level of endorsement sought must be completed. A Virginia educational agency may submit to the Superintendent of Public Instruction for approval an alternate program to meet the

professional studies requirements. The alternate program must include training (e.g., seminar, internship, coursework, etc.) in human development and learning; curriculum and instruction, including technology; assessment of and for learning; classroom and behavior management; [foundations of education and] the teaching profession, including legal status of teachers and students, federal and state laws, and teacher evaluation as prescribed by [~~Virginia's Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers~~*Virginia's Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers*]; and [~~reading~~language and literacy].

3. One year of successful, full-time teaching experience in the appropriate teaching area in a Virginia public or an accredited nonpublic school must be completed. For the Online Teacher License only, one year of successful online teaching experience in the endorsement area in a public school division, an accredited nonpublic school, or an accredited virtual school or program may be accepted in lieu of the supervised teaching experience. A fully licensed experienced teacher must be available in the school building to assist the beginning teacher employed through the alternate route.

C. Alternate route in special education. The Provisional (Special Education) License is a nonrenewable teaching license issued [for a validity period of three years] to an individual employed as a special education teacher in a public school or a nonpublic special education school in Virginia who does not hold the appropriate special education endorsement. The Provisional (Special Education) License will be issued [only with endorsements in special education. ~~for two years. Individuals may apply for a third year on the Provisional License by submitting documentation indicating that all licensure assessments prescribed by the Virginia Board of Education have been taken.~~] The Provisional License is a nonrenewable teaching license valid for a period not to exceed three years. This alternate route to special education is not applicable to individuals seeking the Online Teacher License. To be issued the Provisional

(Special Education) License through this alternate route, an individual must [~~meet the requirements through one of the two following options~~]:

[~~1. Option I. The individual must hold a full, valid Collegiate Professional or Postgraduate Professional License and must:~~]

[1~~a~~]. Be employed by a Virginia public or nonpublic school as a special educator and have the recommendation of the employing educational agency;

[2~~b~~]. Have earned a baccalaureate degree from a regionally accredited college or university;

[3~~c~~]. Have an assigned mentor with an active Virginia teaching license with an endorsement in special education; and

[4~~d~~]. Have a planned program of study in the assigned endorsement area, make progress toward meeting the endorsement requirements each of the three years of the license, and have completed at least three semester hours of coursework in the competencies of foundations for educating students with disabilities and an understanding and application of the legal aspects and regulatory requirements associated with identification, education, and evaluation of students with disabilities. A survey course integrating these competencies would satisfy this requirement.

The Provisional (Special Education) License through this alternate route shall not be issued without the completion of these prerequisites.

[~~2. Option II. The individual must:~~]

[~~a. Be employed by a Virginia public or nonpublic school as a special educator and have the recommendation of the employing educational agency;~~]

~~[b. Have earned a baccalaureate degree from a regionally accredited college or university;]~~

~~[c. Have an assigned mentor endorsed in special education; and]~~

~~[d. Have a planned program of study in the assigned endorsement area, make progress toward meeting the endorsement requirements each of the three years of the license, and have completed nine semester hours including courses in the following: characteristics of students with disabilities, individualized education program implementation, and classroom and behavior management at least three semester hours of coursework in the competencies of foundations for educating students with disabilities and an understanding and application of the legal aspects and regulatory requirements associated with identification, education, and evaluation of students with disabilities. A survey course integrating these competencies would satisfy this requirement.~~

~~The Provisional (Special Education) License through this alternate route shall not be issued without the completion of these prerequisites.]~~

D. Alternate programs at institutions of higher education or Virginia school divisions. Alternate programs developed by institutions of higher education (i) recognize the unique strengths of prospective teachers from nontraditional backgrounds and (ii) prepare these individuals to meet the same standards that are established for others who are granted a license through an alternate route.

E. Experiential learning. Individuals applying for an initial teaching license through the alternate route as prescribed by the Virginia Board of Education must meet the following criteria to be eligible to request experiential learning to satisfy the coursework for the endorsement (teaching) content area:

1. Have earned a baccalaureate degree from a regionally accredited college or university;

2. Have at least [~~five~~three] years of documented full-time work experience that may include specialized training related to the endorsement sought; and

3. Have met the qualifying score on the content knowledge assessment prescribed by the Virginia Board of Education.

Experiential learning does not apply to individuals seeking special education and elementary education (i.e., preK-3 and preK-6) endorsements or endorsements in which there is no Virginia Board of Education prescribed content or subject assessment.

8VAC20-23-100. Conditions for licensure for out-of-state candidates by reciprocity.

A. An individual coming into Virginia from any state may qualify for a Virginia teaching license with comparable endorsement areas if the individual (i) has completed a state-approved teacher preparation program through a regionally accredited four-year college or university or (ii) holds a valid out-of-state teaching license (i.e., full credential without deficiencies) that must be in force at the time the application for a Virginia license is made. [An individual must meet licensure requirements set forth in the Code of Virginia.] An individual seeking licensure must establish a file in the Department of Education by submitting a complete application packet that includes official student transcripts. Unless exempted by the criteria in subsection C of this section, professional teacher's assessments prescribed by the Virginia Board of Education must be satisfied.

B. An individual coming into Virginia will qualify for a Virginia teaching license with comparable endorsement areas if the individual holds an active national certification from the National Board for Professional Teaching Standards (NBPTS) or a nationally recognized certification program approved by the Virginia Board of Education.

C. Individuals who hold a valid out-of-state license (i.e., full credential without deficiencies) and who have completed a minimum of three years of full-time, successful teaching experience in a public or an accredited nonpublic school, kindergarten through grade 12, outside of Virginia are exempt from the professional teacher's assessment requirements. Documentation must be submitted to verify the school's status as a public or accredited nonpublic school.

8VAC20-23-110. Requirements for renewing a license.

A. The Division Superintendent, Postgraduate Professional, Collegiate Professional, Technical Professional, Pupil Personnel Services, Online Teacher, and School Manager Licenses may be renewed upon the completion of 180 professional development points within a five-year validity period based on an individualized professional development plan that includes ongoing, sustained, and high-quality professional development. Every person seeking renewal of a license shall complete all renewal requirements, including professional development in a manner prescribed by the board, except that no person seeking renewal of a license shall be required to satisfy any such requirement by completing coursework and earning credit at an institution of higher education.

B. An individual [~~who holds an expired license~~seeking renewal] must submit a completed licensure application at the time a [~~licensure~~] request is submitted.

[~~C. Virginia public school divisions and public education agencies must report annually to the Virginia Department of Education that instructional personnel have completed high-quality professional development each year as set forth by the Virginia Department of Education.~~]

[C~~D~~]. Any individual licensed and endorsed to teach (i) middle school civics or economics or (ii) high school government or history who is seeking renewal of such license is required to demonstrate knowledge of Virginia history or state and local government by completing a module or professional development course specifically related to Virginia history or state and

local government that has a value of five professional development points. [~~This requirement applies for purposes of the individual's next or initial renewal occurring after July 1, 2014.~~]

[D~~E~~. ~~If the requirement has not been met for initial licensure or licensure renewal, individuals~~Every person] seeking renewal of a license shall provide evidence of completion of certification or training in emergency first aid, cardiopulmonary resuscitation, and the use of automated external defibrillators. The certification or training program shall be based on the current national evidence-based emergency cardiovascular care guidelines for cardiopulmonary resuscitation and the use of an automated external defibrillator, such as a program developed by the American Heart Association or the American Red Cross. The Virginia Board of Education shall provide a waiver for this requirement for any person with a disability whose disability prohibits such person from completing the certification or training.

[E~~O~~. Training in instructional methods tailored to promote academic progress and effective preparation for the Standards of Learning tests and end-of-grade assessments is required for licensure renewal.]

[F~~P~~. Persons seeking licensure renewal as teachers must complete study in child abuse recognition and intervention in accordance with curriculum guidelines developed by the Virginia Board of Education in consultation with the Virginia Department of Social Services that are relevant to the specific teacher licensure routes.]

[G. When provided by the state, individuals must complete professional development in knowledge, skills and dispositions needed in working with challenged populations and complete other professional development activities prescribed by the Board of Education.]

[H ~~F~~]. Professional development points may be accrued by the completion of professional development activities to improve and increase instructional personnel's knowledge of the

academic subjects the teachers teach or the area assigned from one or more of the following eight options.

1. College credit. Acceptable coursework offers content that provides new information and is offered on campus, off campus, or through extension by any regionally accredited two-year or four-year college or university. College coursework must develop further experiences in subject content taught, teaching strategies, uses of technologies, leadership, and other essential elements in teaching to high standards and increasing student learning. [~~Instructional personnel must complete coursework to improve and increase the knowledge of the academic subjects or endorsement areas in which they are assigned.~~] *No person seeking renewal of a license shall be required to complete coursework and earn credit at an institution of higher learning*. [~~Individuals who do not hold a graduate degree must refer to subsection G of this section.~~]

2. Professional conference. A professional conference is a workshop, institute, or seminar of four or more hours that contributes to ongoing, sustained, and high-quality professional development.

3. Curriculum development. Curriculum development is a group activity in which the license holder contributes to the improvement of the curriculum of a school, a school division, or an education institution in the teaching area assigned. This includes the alignment of curriculum frameworks, instructional materials, and assessments to provide a system with clear expectations of what is to be taught and learned.

4. Publication of article. The article must contribute to the education profession or to the body of knowledge of the license holder's teaching area or instructional position. Grant reports that present the results of educational research are acceptable provided the license holder had an active role in planning, analyzing, interpreting, demonstrating,

disseminating, or evaluating the study or innovation. The article must be published in a recognized professional journal.

5. Publication of book. Books must be published for purchase and must contribute to the education profession or to the body of knowledge of the license holder's teaching area or instructional position. The published book must increase the field of content knowledge; planning and assessment for evaluating and providing students with feedback that encourages student progress and measures student achievement; instruction, safety, and learning environment; and communication and community relations working with students, parents, and members of the community to promote broad support for student learning. Points will not be awarded for self-published books.

6. Mentorship. Mentoring is the process by which an experienced professional who has received mentorship training provides assistance to one or more persons for the purpose of improving their performance. Assistance may involve role modeling, direct instruction, demonstration, observation with feedback, developing of plans, and consultation to promote instructional excellence and increased student achievement. Mentoring may include the supervision of a field experience of a pre-service student teacher or an intern in an approved teacher or principal preparation program, as well as mentoring as part of the induction process for a beginning teacher or a first-year administrator. Individuals serving in this role and submitting documentation for license renewal based on the mentorship option shall receive training as a mentor prior to the assignment and at least once during the five-year renewal cycle.

7. Educational project. Educational projects must be planned, focused projects based on high standards of teaching and learning. Projects must result in a written report or other tangible product. Projects must contribute to the education profession or to the body of knowledge of the license holder's teaching area or instructional position. A project could

include participation in new professional responsibilities, such as leading a school improvement initiative.

8. Professional development activity. Professional development activities must focus on student learning and achievement, schoolwide educational improvement, leadership, subject content, teaching strategies, and use of technologies and other essential elements in teaching to high standards. Activities must be planned, rigorous, systematic, and promote continuous inquiry and reflection. Local employing educational agencies are encouraged to design professional development activities that are conducted in school settings and linked to student learning and achievement.

[I~~J~~]. *Points* may be accrued by activities drawn from one or more of the eight renewal options. Renewal work is designed to provide licensed personnel with opportunities for professional development relative to the grade levels or teaching fields to which they are assigned or for which they seek an added endorsement. Such professional development encompasses (i) responsible remediation of any area of an individual's knowledge or skills that fails to meet the standards of competency and (ii) responsible efforts to increase the individual's knowledge of new developments in his field and to respond to new curricular demands within the individual's area of professional competence.

[J~~K~~]. The proposed work toward renewal in certain options must be approved in advance by the chief executive officer or designee of the employing educational agency. Persons who are not employed by an educational agency may renew [~~or reinstate~~] their license by submitting to the Office of Professional Licensure, Department of Education, [a renewal application, fee,] the[~~ir~~] individualized renewal record and verification of [~~points~~ the completion of all renewal requirements], including official student transcripts of coursework taken at a regionally accredited two-year or four-year college or university.

[K~~L~~]. Accrual of professional development points shall be determined by criteria set forth by the Virginia Department of Education in the Virginia Renewal Manual (http://doe.virginia.gov/teaching/licensure/licensure_renewal_manual.pdf).

[L~~M~~]. Virginia school divisions and [accredited] nonpublic schools will recommend renewal of licenses using the renewal point system.[~~The renewal recommendation must include verification of demonstrated proficiency in the use of educational technology for instruction.~~]

[M~~N~~]. Persons seeking license renewal as teachers must demonstrate proficiency in the use of educational technology for instruction.

[~~O. Training in instructional methods tailored to promote academic progress and effective preparation for the Standards of Learning tests and end-of-grade assessments is required for licensure renewal.~~]

[~~P. If they have not already met the requirement, persons seeking licensure renewal as teachers must complete study in child abuse recognition and intervention in accordance with curriculum guidelines developed by the Virginia Board of Education in consultation with the Virginia Department of Social Services that are relevant to the specific teacher licensure routes.~~]

Part IV

Licensure Regulations Governing Early/Primary Education, Elementary Education, and Middle Education Endorsements

8VAC20-23-120. Early/primary education, elementary education, and middle education endorsements.

Individuals seeking licensure with endorsements in early/primary education, elementary education, and middle education may meet requirements through the completion of an approved program or if employed by a Virginia public or nonpublic school through the alternate

route to licensure. Components of the licensure program include a degree from a regionally accredited college or university in the liberal arts and sciences, or equivalent; professional teacher's assessments requirement prescribed by the Virginia Board of Education; specific endorsement requirements; and professional studies requirements.

8VAC20-23-130. Professional studies requirements [for early/primary education, elementary education, and middle education endorsements].

Professional studies requirements for early/primary education, elementary education, and middle education: 21 semester hours. These requirements may be taught in integrated coursework or modules.

1. Human development and learning (birth through adolescence): 3 semester hours.

a. Skills in this area shall contribute to an understanding of the physical, social, emotional, speech and language, and intellectual development of children and the ability to use this understanding in guiding learning experiences and relating meaningfully to students.

b. The interaction of children with individual differences - economic, social, racial, ethnic, religious, physical, and [~~mental~~cognitive] - should be incorporated to include skills contributing to an understanding of developmental disabilities and developmental issues related to[,] but not limited to[,] low socioeconomic status[~~,~~;] attention deficit disorders[~~,~~;] developmental disorders[~~,~~;] gifted education[,] including the use of multiple criteria to identify gifted students[~~,~~;] substance abuse[~~,~~; ~~child abuse,~~trauma, including child abuse and neglect and other adverse childhood experiences;] and family disruptions.

2. Curriculum and instruction: 3 semester hours.

a. Early/primary education preK-3 or elementary education preK-6 curriculum and instruction: 3 semester hours.

(1) Skills in this area shall contribute to an understanding of the principles of learning; the application of skills in discipline-specific methodology; effective communication with and among students; selection and use of materials, including media and contemporary technologies; and selection, development, and use of appropriate curricula, methodologies, and materials that support and enhance student learning and reflect the research on unique, age-appropriate, and culturally relevant curriculum and pedagogy.

(2) Understanding of the principles of online learning and online instructional strategies and the application of skills to deliver online instruction must be included.

(3) Instructional practices that are sensitive to culturally and linguistically diverse learners, including [English learners~~limited English proficient students~~], gifted and talented students, and those students with disabilities; and appropriate for the level of endorsement (i.e., preK-3 or preK-6) sought shall be included.

(4) Teaching methods shall be tailored to promote student engagement and student academic progress and effective preparation for the Standards of Learning assessments.

(5) Study in (i) methods of improving communication between schools and families, (ii) communicating with families regarding social and instructional needs of children, (iii) ways of increasing family [engagement~~involvement~~] in student learning at home and in school, (iv) the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*], and (v) [~~Virginia's Foundation Blocks for Early Learning: Comprehensive Standards for Four-Year-Olds~~*Virginia's Foundation Blocks for Early Learning: Comprehensive*

Standards for Four-Year-Olds] prepared by the department's Office of Humanities and Early Childhood shall be included.

(6) Early childhood educators must understand the role of families in child development and in relation to teaching educational skills.

(7) Early childhood educators must understand the role of the informal and play-mediated settings for promoting students' skills and development and must demonstrate knowledge and skill in interacting in such situations to promote specific learning outcomes as reflected in [~~Virginia's Foundation Blocks for Early Learning~~ *Virginia's Foundation Blocks for Early Learning: Comprehensive Standards for Four-Year-Olds*]. Demonstrated proficiency in the use of educational technology for instruction shall be included. Persons seeking initial licensure as teachers and persons seeking licensure renewal as teachers for the first time shall complete study in child abuse recognition and intervention in accordance with curriculum guidelines developed by the Virginia Board of Education in consultation with the Virginia Department of Social Services that are relevant to the specific teacher licensure routes. Pre-student teaching experiences (i.e., field experiences) should be evident within these skills.

b. Middle education 6-8 curriculum and instruction: 3 semester hours.

(1) Skills in this area shall contribute to an understanding of the principles of learning; the application of skills in discipline-specific methodology; effective communication with and among students; and selection and use of materials, including media and contemporary technologies.

(2) Understanding of the principles of online learning and online instructional strategies and the application of skills to deliver online instruction must be included.

(3) Instructional practices that are sensitive to culturally and linguistically diverse learners including [English learners~~limited English proficient students~~], gifted and talented students, and students with disabilities, and must be appropriate for the middle education endorsement shall be included.

(4) Teaching methods shall be tailored to promote student engagement and student academic progress and effective preparation for the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*] assessments.

(5) Study in methods of improving communication between schools and families, ways of increasing family [engagement~~involvement~~] in student learning at home and in school, and the Standards of Learning shall be included.

(6) Demonstrated proficiency in the use of educational technology for instruction shall be included.

(7) Persons seeking initial licensure as teachers and persons seeking licensure renewal as teachers for the first time shall complete study in child abuse recognition and intervention in accordance with curriculum guidelines developed by the Virginia Board of Education in consultation with the Virginia Department of Social Services that are relevant to the specific teacher licensure routes. Pre-student teaching experiences (i.e., field experiences) should be evident within these skills.

3. Classroom and behavior management: 3 semester hours.

a. Skills in this area shall contribute to an understanding and application of research-based classroom and behavior management techniques, classroom community building, positive behavior supports, and individual interventions, including techniques that promote emotional well-being and teach and maintain behavioral

conduct and skills consistent with norms, standards, and rules of the educational environment.

b. This area shall address diverse approaches based upon [culturally responsive] behavioral, cognitive, affective, social and ecological theory and practice.

c. Approaches should support professionally appropriate practices that promote positive redirection of behavior, development of social skills, and of self[-]discipline.

d. Knowledge and an understanding of various school crisis management and safety plans and the demonstrated ability to create a safe, orderly classroom environment must be included.

e. The link between classroom management and students' ages must be understood and demonstrated in techniques used in the classroom.

4. Assessment of and for learning: 3 semester hours.

a. Skills in this area shall be designed to develop an understanding and application of creating, selecting, and implementing valid and reliable classroom-based assessments of student learning, including formative and summative assessments. Assessments designed and adapted to meet the needs of diverse learners must be addressed.

b. Analytical skills necessary to inform ongoing planning and instruction, as well as to understand, and help students understand their own progress and growth must be included.

c. Skills also include the relationships among assessment, instruction, and monitoring student progress to include student performance measures in grading practices, the ability to interpret valid assessments using a variety of formats in order to measure student attainment of essential skills in a standards-based environment,

and the ability to analyze assessment data to make decisions about how to improve instruction and student performance.

d. Understanding of state assessment programs and accountability systems, including assessments used for student achievement goal setting as related to teacher evaluation and determining student academic progress must be included.

e. Knowledge of legal and ethical aspects of assessment, and skills for developing familiarity with assessments used in preK-12 education (e.g., diagnostic, college admission exams, industry certifications, and placement assessments) must be included.

5. [Foundations of education and ~~T~~t]he teaching profession: 3 semester hours.

a. Skills in this area shall be designed to develop an understanding of the historical, philosophical, and sociological foundations underlying the role, development, and organization of public education in the United States.

b. Attention must be given to the legal status of teachers and students, including federal and state laws and regulations; school as an organization and culture; and contemporary issues and current trends in education, including the impact of technology on education. Local, state, and federal governance of schools, including the roles of teachers and schools in communities, must be included.

c. Professionalism and ethical standards, as well as personal integrity must be addressed.

d. Knowledge and understanding of Virginia's Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers must be included.

6. [Language and Literacy~~Reading~~]: 6 semester hours.

a. Early/primary preK-3 and elementary education preK-6 - language acquisition and reading and writing: 6 semester hours. Skills listed for these endorsement areas represent the minimum competencies that a beginning teacher must be able to demonstrate. These skills are not intended to limit the scope of a beginning teacher's program. Additional knowledge and skills that add to a beginning teacher's competencies to deliver instruction and improve student achievement should be included as part of a quality learning experience.

(1) Language acquisition: 3 semester hours. Skills in this area shall be designed to impart a thorough understanding of the Virginia English Standards of Learning as well as the complex nature of language acquisition as a precursor to literacy. Language acquisition shall follow the typical development of linguistic competence in the areas of phonetics, semantics, syntax, morphology, phonology, and pragmatics.

(2) Reading and writing: 3 semester hours. Skills in this area shall be designed to impart a thorough understanding of the Virginia English Standards of Learning as well as the reciprocal nature of reading and writing. Reading shall include phonemic [and other phonological] awareness, concept of print, phonics, fluency, vocabulary development, ~~[and]~~comprehension strategies[, and the ability to foster appreciation of a variety of fiction and nonfiction text and independent reading]. Writing shall include writing strategies and conventions as supporting the composing and [~~writing~~written] expression and usage and mechanics domains. Additional skills shall include proficiency in understanding the stages of spelling development[~~,~~ and] the writing process[~~, as well as the ability to foster appreciation of a variety of fiction and nonfiction texts and independent reading~~].

b. Middle education - language acquisition and reading development: 3 semester hours and literacy in the content areas: 3 semester hours.

(1) Language acquisition and reading development: 3 semester hours. Skills in this area shall be designed to impart a thorough understanding of the complex nature of language acquisition and reading, to include phonemic [and other phonological] awareness, phonics, fluency, vocabulary development, and comprehension strategies [~~as~~and ability to foster appreciation of a variety of fiction and nonfiction text and independent reading] for adolescent learners. Additional skills shall include proficiency in writing strategies as well as the ability to foster appreciation of a variety of fiction and nonfiction texts and independent reading for adolescent learners.

(2) Literacy in the content areas: 3 semester hours. Skills in this area shall be designed to impart an understanding of vocabulary development and comprehension skills in English, mathematics, science, history and social science, and other content areas. Strategies include teaching students how to ask effective questions, summarize and retell both verbally and in writing, and to listen effectively. Teaching strategies include literal, interpretive, critical, and evaluative comprehension, as well as the ability to foster appreciation of a variety of fiction and nonfiction texts and independent reading for adolescent readers.

7. Supervised [~~clinical~~supervised] experience. Supervised clinical experiences shall be continuous and systematic and comprised of early field experiences and a minimum of 10 weeks of full-time student teaching [in the endorsement area sought] under the supervision of a cooperating teacher with demonstrated effectiveness in the classroom. The summative supervised student teaching experience shall include at least 150 clock hours spent in direct teaching at the level of endorsement. One year of successful full-time teaching experience in the endorsement area in a public or accredited nonpublic school may be accepted in lieu of the supervised teaching experience. For the Online Teacher License only, one year of successful online teaching experience in the

endorsement area in a public school, an accredited nonpublic school, or an accredited virtual school or program may be accepted in lieu of the supervised teaching experience. A fully licensed, experienced teacher shall be available in the school building to assist a beginning teacher employed through the alternate route.

8VAC20-23-140. Early childhood for three-year-olds and four-year-olds (add-on endorsement).

Endorsement requirements. The candidate must have:

1. An earned baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with an endorsement in elementary education (such as preK-3 or preK-6) or special education early childhood;

2. Completed 9 semester hours of graduate-level coursework in early childhood education; and

3. Completed a supervised practicum of at least 45 instructional hours in a preschool setting (i.e., three-year-olds and four-year-olds) in a public school, an accredited nonpublic school, or another program approved by the Virginia Board of Education. One year of successful, full-time teaching experience in a public or accredited nonpublic school may be accepted in lieu of the practicum.

4. The add-on endorsement to an elementary endorsement that includes preK is not required to teach preK (i.e., three-year-olds and four-year-olds), but the endorsement recognizes the candidate's additional preparation in early childhood education.

8VAC20-23-150. Early/primary education preK-3.

Endorsement requirements.

1. The candidate must have graduated from an approved teacher preparation program in early/primary education preK-3; or

2. The candidate for the early/primary education preK-3 endorsement must have earned a baccalaureate degree from a regionally accredited college or university in the liberal arts and sciences, or equivalent, and completed coursework that covers the early/primary education preK-3 competencies and [~~fulfills~~meets] the following [~~51~~] semester-hour requirements:

a. English (must include composition, oral communication, and literature): 12 semester hours; or complete 6 semester hours in English and pass a rigorous elementary subject test prescribed by the Virginia Board of Education;

b. Mathematics (must include algebra, geometry, probability and statistics, and methods in teaching elementary mathematics): 12 semester hours; or complete 6 semester hours in mathematics, complete a methods in teaching elementary mathematics course (3 semester hours), and pass a rigorous elementary subject test prescribed by the Virginia Board of Education;

c. Laboratory sciences: 12 semester hours (in at least two science disciplines and methods in teaching elementary science); or complete 6 semester hours in laboratory science (in two science disciplines), complete a methods in teaching elementary science course (3 semester hours), and pass a rigorous elementary subject test prescribed by the Virginia Board of Education;

d. History (must include American history and world history): 6 semester hours, and Social Science (must include geography and economics): 6 semester hours; or complete 3 semester hours in history, complete 3 semester hours in social science (geography or economics), [complete a methods in teaching elementary history and

social sciences course,] and pass a rigorous elementary subject test prescribed by the Virginia Board of Education; and

e. Arts: 3 semester hours.

8VAC20-23-160. Elementary education preK-6.

Endorsement requirements.

1. The candidate shall have graduated from an approved teacher preparation program in elementary education preK-6; or

2. The candidate for the elementary education preK-6 endorsement must have earned a baccalaureate degree from a regionally accredited college or university majoring in the liberal arts and sciences (or equivalent) and [~~fulfill~~meets] the following [~~57~~] semester-hour requirements:

a. English (must include composition, oral communication, and literature): 12 semester hours; or complete 6 semester hours in English and pass a rigorous elementary subject test prescribed by the Virginia Board of Education;

b. Mathematics (must include algebra, geometry, probability and statistics, and teaching elementary mathematics): 15 semester hours; or complete 6 hours in mathematics, complete a methods in teaching elementary mathematics course (3 semester hours), and pass a rigorous elementary subject test prescribed by the Virginia Board of Education;

c. [Laboratory ~~S~~sciences] (including a laboratory course): 15 semester hours in at least three science disciplines and at least a three credit science methods course; or complete [~~6~~9] semester hours (in two science disciplines), complete a methods in teaching elementary science course (3 semester hours), and pass a rigorous elementary subject test prescribed by the Virginia Board of Education;

d. History (must include American history and world history): 6 semester hours, and Social Science (must include geography and economics): 6 semester hours; or complete 3 semester hours in history, complete 3 semester hours in social science (geography or economics), [complete a methods in teaching elementary history and social sciences course,] and pass a rigorous elementary subject test prescribed by the Virginia Board of Education; and

e. Arts: 3 semester hours.

8VAC20-23-170. Middle education 6-8.

Endorsement requirements.

1. The candidate must have graduated from an approved teacher preparation discipline-specific program in middle education 6-8 with at least one area of academic preparation from the areas of English, mathematics, science, and history and social sciences; or

2. An applicant seeking the middle education 6-8 endorsement must have earned a baccalaureate degree from a regionally accredited college or university in the liberal arts and sciences, or equivalent; and completed the minimum number of semester hours, as indicated, in at least one area of academic preparation (i.e., concentration) that will be listed on the license. The applicant will be restricted to teaching only in the area or areas of concentration listed on the teaching license.

a. English. English concentration (must include coursework in language, for example history, structure, grammar, fiction and nonfiction texts, media literacy, advanced composition, and interpersonal communication or speech): 21 semester hours.

b. Mathematics. Mathematics concentration (must include coursework in algebra, geometry, probability and statistics, applications of mathematics, and methods of

teaching mathematics to include middle school mathematics content): 24 semester hours.

c. [Laboratory] Science[s]. Science concentration (must include courses in each of the following: biology, chemistry, physics, and Earth and space science; and a laboratory course is required in [~~two~~each] of the four areas): [~~21~~24] semester hours.

d. History and social sciences. History and social sciences concentration (must include a course in American history; world history; economics; American government, including state and local government; and geography): 21 semester hours.

Part V

Licensure Regulations Governing PreK-12 Endorsements, Special Education, Secondary Grades 6-12 Endorsements, and Adult Education

8VAC20-23-180. PreK-12 endorsements, special education, secondary grades 6-12 endorsements, and adult education.

Individuals seeking licensure with preK-12 endorsements, special education, secondary grades 6-12 endorsements, or adult education may meet requirements through the completion of an approved program or if employed by a Virginia public or nonpublic school through the alternate route to licensure. Components of the licensure program include a degree from a regionally accredited college or university in the liberal arts and sciences, or equivalent; professional teacher's assessment requirements prescribed by the Virginia Board of Education; specific endorsement requirements; and professional studies requirements.

8VAC20-23-190. Professional studies requirements [for PreK-12 endorsements, special education, secondary grades 6-12 endorsements, and adult education].

Professional studies requirements for adult education, preK-12 endorsements, and secondary grades 6-12 endorsements: 18 semester hours. Professional studies requirements for special education: 21 semester hours. These requirements may be taught in integrated coursework or modules.

1. Human development and learning (birth through adolescence): 3 semester hours.

a. Skills in this area shall contribute to an understanding of the physical, social, emotional, speech and language, and intellectual development of children and the ability to use this understanding in guiding learning experiences.

b. The interaction of children with individual differences - economic, social, racial, ethnic, religious, physical, and [~~mental~~cognitive] - should be incorporated to include skills contributing to an understanding of developmental disabilities and developmental issues related to[,] but not limited to[,] low socioeconomic status[~~,~~;] attention deficit disorders[~~,~~;] developmental disabilities[~~,~~;] gifted education[,] including the use of multiple criteria to identify gifted students[~~,~~;] substance abuse[~~,~~; ~~child abuse,~~trauma, including child abuse and neglect and other adverse childhood experiences;] and family disruptions.

2. Curriculum and instruction: 3 semester hours.

a. Skills in this area shall contribute to an understanding of the principles of learning; the application of skills in discipline-specific methodology; effective communication with and among students; selection and use of materials, including media and contemporary technologies; selection, development, and use of appropriate curricula, methodologies, and materials that support and enhance student learning

and reflect the research on unique, age-appropriate, and culturally relevant curriculum and pedagogy.

b. Understanding of the principles of online learning and online instructional strategies and the application of skills to deliver online instruction must be included.

c. Instructional practices that are sensitive to culturally and linguistically diverse learners, including [English learners~~limited English proficient students~~]; gifted and talented students and those students with disabilities; and appropriate for the level of endorsement sought shall be included.

d. Teaching methods shall be tailored to promote student academic progress and effective preparation for the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*]assessments.

e. Methods of improving communication between schools and families, ways of increasing family [engagement~~involvement~~] in student learning at home and in school, and the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*] shall be included.

f. Demonstrated proficiency in the use of educational technology for instruction shall be included.

g. Persons seeking initial licensure as teachers and persons seeking licensure renewal as teachers for the first time shall complete study in child abuse recognition and intervention in accordance with curriculum guidelines developed by the Virginia Board of Education in consultation with the Virginia Department of Social Services that are relevant to the specific teacher licensure routes.

h. Curriculum and instruction for secondary grades 6-12 endorsements shall include middle and secondary education. Pre-student teaching experiences (i.e., field

experiences) should be evident within these skills. For preK-12, field experiences shall be at the elementary, middle, and secondary levels.

3. Assessment of and for learning: 3 semester hours.

a. Skills in this area shall be designed to develop an understanding and application of creating, selecting, and implementing valid and reliable classroom-based assessments of student learning, including formative and summative assessments. Assessments designed and adapted to meet the needs of diverse learners must be addressed.

b. Analytical skills necessary to inform ongoing planning and instruction, as well as to understand, and help students understand their own progress and growth must be included.

c. Skills also include the relationships among assessment, instruction, and monitoring student progress to include student performance measures in grading practices, the ability to interpret valid assessments using a variety of formats in order to measure student attainment of essential skills in a standards-based environment, and the ability to analyze assessment data to make decisions about how to improve instruction and student performance.

d. Understanding of state assessment programs and accountability systems, including assessments used for student achievement goal setting as related to teacher evaluation and determining student academic progress, including knowledge of legal and ethical aspects of assessment.

e. Develop familiarity with assessments used in preK-12 education (e.g., diagnostic, college admission exams, industry certifications, placement assessments).

4. [Foundations of education and ~~T~~t]he teaching profession: 3 semester hours.

a. Skills in this area shall be designed to develop an understanding of the historical, philosophical, and sociological foundations underlying the role, development, and organization of public education in the United States.

b. Attention must be given to the legal status of teachers and students, including federal and state laws and regulations, school as an organization and culture, and contemporary issues and current trends in education, including the impact of technology on education. Local, state, and federal governance of schools, including the roles of teachers and schools in communities must be included.

c. Professionalism and ethical standards, as well as personal integrity must be addressed.

d. Knowledge and understanding of [~~Virginia's Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers~~*Virginia's Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers*] must be included.

5. Classroom and behavior management: 3 semester hours.

a. Skills in this area shall contribute to an understanding and application of research-based classroom and behavior management techniques, classroom community building, positive behavior supports, and individual interventions, including techniques that promote emotional well-being and teach and maintain [culturally responsive] behavioral conduct and skills consistent with norms, standards, and rules of the educational environment.

b. This area shall address diverse approaches based upon behavioral, cognitive, affective, social and ecological theory and practice.

c. Approaches should support professionally appropriate practices that promote positive redirection of behavior, development of social skills and of self-discipline.

d. Knowledge and an understanding of various school crisis management and safety plans and the ability to create a safe, orderly classroom environment must be included. The link between classroom management and the students' ages must be understood and demonstrated in techniques used in the classroom.

6. [Language and Literacy~~Reading~~].

a. Adult education, preK-12, and secondary grades 6-12 - literacy in the content areas: 3 semester hours. Skills in this area shall be designed to impart an understanding of vocabulary development and comprehension skills in English, mathematics, science, history and social science, and other content areas. Strategies include teaching students how to ask effective questions, summarize and retell both verbally and in writing, and listen effectively. Teaching strategies include literal, interpretive, critical, and evaluative comprehension, as well as the ability to foster appreciation of a variety of fiction and nonfiction texts and independent reading for adolescent learners.

b. Special education - language acquisition and reading and writing: 6 semester hours. Skills listed for these endorsement areas represent the minimum competencies that a beginning teacher must be able to demonstrate. These skills are not intended to limit the scope of a beginning teacher's program. Additional knowledge and skills that add to a beginning teacher's competencies to deliver instruction and improve student achievement should be included as part of a quality learning experience.

(1) Language acquisition: 3 semester hours. Skills in this area shall be designed to impart a thorough understanding of the Virginia English Standards of Learning as well as the complex nature of language acquisition as a precursor to literacy.

Language acquisition shall follow the typical development of linguistic competence in the areas of phonetics, semantics, syntax, morphology, phonology, and pragmatics.

(2) Reading and writing: 3 semester hours. Skills in this area shall be designed to impart a thorough understanding of the Virginia English Standards of Learning as well as the reciprocal nature of reading and writing. Reading shall include phonemic [and other phonological] awareness, concept of print, phonics, fluency, vocabulary development, [~~and~~]comprehension strategies[, and the ability to foster appreciation of a variety of fiction and nonfiction text and independent reading]. Writing shall include writing strategies and conventions as supporting the composing and [~~writing~~written] expression and usage and mechanics domains. Additional skills shall include proficiency in understanding the stages of spelling development[~~,~~ and] the writing process[~~, as well as the ability to foster appreciation of a variety of fiction and nonfiction texts and independent reading~~].

7. Supervised classroom experience. Supervised clinical experiences shall be continuous and systematic and comprised of early field experiences and a minimum of 10 weeks of full-time student teaching [in the endorsement area sought,] under the supervision of a cooperating teacher with demonstrated effectiveness in the classroom. The summative supervised student teaching experience shall include at least 150 clock hours spent in direct teaching at the level of endorsement.

If a preK-12 endorsement is sought, teaching activities shall be at the elementary and middle or secondary levels. Individuals seeking the endorsement in library media shall complete the supervised school library media practicum in a school library media setting. Individuals seeking an endorsement in an area of special education shall complete the supervised classroom experience requirement in the area of special education for which the endorsement is sought. One year of successful full-time teaching experience in the

endorsement area in a public or an accredited nonpublic school may be accepted in lieu of the supervised teaching experience. For the Online Teacher License only, one year of successful online teaching experience in the endorsement area in a public school, an accredited nonpublic school, or an accredited virtual school or program may be accepted in lieu of the supervised teaching experience. A fully licensed, experienced teacher shall be available in the school building to assist a beginning teacher employed through the alternate route.

8VAC20-23-200. Adult education.

A. Endorsement requirements. The candidate must have:

1. Earned a baccalaureate degree from a regionally accredited college or university or hold a Collegiate Professional License; and

2. A minimum of 15 semester hours in adult education that must include the following competencies and one semester of supervised successful full-time, or an equivalent number of hours of part-time experience, teaching of adults:

a. Understanding of the nature or psychology of the adult learner or adult development;

b. Understanding of the knowledge, skills, and processes needed for the selection, evaluation, and instructional applications of the methods and materials for [~~adult basic skills~~adults to become college and career] ready including:

(1) Curriculum development in adult basic education or [~~General Educational Development (GED)~~Virginia Board of Education-approved high school equivalency (HSE)] instruction;

(2) [~~Beginning reading for adults~~Literacy Skills for adults];

(3) [~~Beginning mathematics for adults~~Numeracy skills for adults];

(4) Reading comprehension for adult education;

[~~(5) Foundations of adult education; and~~]

([~~6~~5]) Other adult basic skills instruction.

B. Individuals not holding a Collegiate Professional License or a Postgraduate Professional License must meet the professional teacher's assessment requirements prescribed by the Virginia Board of Education.

8VAC20-23-210. Adult English as a second language (add-on endorsement).

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in adult English as a second language; or

2. [~~An e~~E]arned [a] baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with an endorsement in a teaching area; and

3. Completed 21 semester hours of coursework distributed in the following areas:

a. Methods for teaching English as a second language to adults: 3 semester hours;

b. English linguistics: 3 semester hours;

c. Cross-cultural education: 3 semester hours;

d. Modern foreign language: 6 semester hours; and

e. Electives from the following areas: 6 semester hours:

(1) Cross-cultural communication;

(2) Second language acquisition;

(3) General linguistics;

(4) Teaching reading to adults;

(5) Adult English as a second language instruction; or

(6) Adult English as a second language curriculum development.

8VAC20-23-220. Career and technical education – agricultural education.

A. Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program [~~with a minimum of a baccalaureate degree from a regionally accredited college or university~~] in agricultural education; or

2. [Earned a baccalaureate degree from a regionally accredited college or university and ~~C~~c]ompleted 39 semester hours of coursework in agriculture, including at least three semester hours in each of the following areas in subdivisions 2 a through 2 f as well as a minimum of nine hours in one concentration area listed in the following areas subdivisions 2 a through 2 f:

a. Plant science;

b. Animal science;

c. Agricultural mechanics and applied technology with a lab component;

d. Agricultural economics and management;

e. Forestry and wildlife management;

f. Horticulture; and

g. Supervised occupational experience, 3 semester hours, or one year of successful, full-time or the equivalent of relevant occupational experience (a minimum of 2,000 cumulative hours) within the past five years.

If an individual is seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

B. Technical Professional License. An endorsement in specialized areas may be granted to individuals who have:

1. Been recommended by an employing Virginia educational agency;

2. Completed two years of successful, full-time or the equivalent of occupational experience within the past five years in the teaching specialty sought;

3. Completed professional studies requirements (human development and learning: 3 semester hours; curriculum and instruction in career and technical education: 3 semester hours; and applications of instructional technology or classroom and behavior management: 3 semester hours); and

4. Completed an agricultural education certificate or associate degree program in the teaching specialty area sought.

If an individual is seeking [an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher

seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

8VAC20-23-230. Career and technical education – business and information technology.

A. Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program [~~with a minimum of a baccalaureate degree from a regionally accredited college or university~~] in business and information technology; or

2. [Earned a baccalaureate degree from a regionally accredited college or university and ~~C~~c]ompleted a major in business education or 39 semester hours of coursework in business and information technology, including:

a. Accounting: 6 semester hours;

b. Economics: 3 semester hours;

c. Business law, business principles, management, marketing, or finance: 9 semester hours;

d. Communications and media to include oral, written, and presentation: 3 semester hours;

e. Information systems and technology to include computer software applications (e.g., word processing, spreadsheet, database, and presentation), information technology fundamentals, database management, communications systems, programming, software development, security, and networking: 12 semester hours;

f. Input technologies to include touch keyboarding (required, or documented demonstrated mastery of the touch keyboarding skill), audio input devices, video input devices, pointing devices, touch screens, or other emerging input technologies: 3 semester hours; and

g. Supervised business experience: 3 semester hours; or one year of successful full-time or the equivalent (i.e., 2,000 part-time hours) relevant occupational experience within the last five years.

If an individual is seeking [an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

B. Technical Professional License. An endorsement in a highly specialized business and information technology area, such as networking, [~~administration, communications systems~~], programming, database management, Internet application development, medical office procedures, legal office procedures, network administration, and other emerging highly specialized areas may be granted to individuals who have:

1. Been recommended by an employing Virginia educational agency;

2. Completed two years of successful, full-time or the equivalent occupational experience within the last five years in the teaching specialty area sought;

3. Completed a business certificate or associate degree program from a regionally accredited institution in the teaching specialty area sought; and

4. Completed professional studies requirements (human development and learning: 3 semester hours; curriculum and instruction in career and technical education: 3 semester hours; and applications of instructional technology or classroom and behavior management: 3 semester hours).

If an individual is seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

8VAC20-23-240. Career and technical education – family and consumer sciences.

A. Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program [~~with a minimum of a baccalaureate degree from a regionally accredited college or university~~] in family and consumer sciences; or

2. [Earned a baccalaureate degree from a regionally accredited college or university and ~~C~~c]ompleted a major in family and consumer sciences education or 39 semester hours of coursework in family and consumer sciences distributed in the following areas:

a. Development of individuals through the lifespan and the family life cycle and family: 9 semester hours;

b. Resource management, personal and family finance, and consumer economics: 6 semester hours;

c. Food, nutrition, dietetics, wellness, and food science: 9 semester hours;

d. Housing, home furnishing, and equipment: 3 semester hours;

e. Apparel and textiles: 6 semester hours;

f. Occupational program management: 3 semester hours; and

g. Supervised occupational experience related to family and consumer sciences, 3 semester hours, or one year of successful, full-time or the equivalent of relevant occupational experience within the last five years.

If an individual is seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

B. Technical Professional License. An endorsement in a specialized family and consumer sciences area, such as child care occupations, consumer services, family and human services, fashion design occupations, food occupations, hospitality occupations, interior design occupations, and home furnishings occupations, and home and institutional services, may be granted to individuals who have:

1. Been recommended by an employing Virginia educational agency.

2. Completed at least two years of successful, full-time occupational experience or the equivalent within the past five years in the teaching specialty for which they are seeking endorsement.

3. Completed a family and consumer sciences certificate or associate degree program [from a regionally accredited college or university,] where applicable in the area of endorsement sought.

4. Completed professional studies requirements (human development and learning: 3 semester hours; curriculum and instruction in career and technical education: 3 semester hours; and applications of instructional technology or classroom and behavior management: 3 semester hours).

If an individual is seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

8VAC20-23-250. Career and technical education – health and medical sciences.

A. Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved program of study [~~with a minimum of a baccalaureate degree from a regionally accredited college or university~~] in a health care program of study and hold a current license or certification as a professional practitioner in the area in which one is to be teaching; or

2. [Earned a baccalaureate degree from a regionally accredited college or university and a~~A~~] current license or certification as a professional practitioner in the area in which one is to be teaching and completed two years of successful, full-time or the equivalent of

occupational experience within the past five years in an area related to the teaching specialty sought.

If an individual is seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

B. Technical Professional License. An endorsement in a specialized health occupations area may be granted to individuals who have:

1. Been recommended by an employing Virginia educational agency;

2. A license or be certified as a professional practitioner in the area in which one is to be teaching;

3. Completed two years of full-time or the equivalent of occupational experience within the past five years in the teaching specialty sought;

4. Completed a health occupations certificate or associate degree program from a regionally accredited institution in the teaching specialty area sought; and

5. Completed professional studies requirements (human development and learning: 3 semester hours; curriculum and instruction in career and technical education: 3 semester hours; and applications of instructional technology or classroom and behavior management: 3 semester hours).

If an individual is seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in

8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

8VAC20-23-260. Career and technical education – marketing education.

A. Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program [~~with a minimum of a baccalaureate degree from a regionally accredited college or university~~] in marketing education; or

2. [Earned a baccalaureate degree from a regionally accredited college or university and ~~C~~c]ompleted a major in marketing education or a minimum of 39 semester hours of coursework in marketing to include;

a. Marketing processes and environment: 3 semester hours;

b. Management and supervision: 6 semester hours;

c. Economics: 3 semester hours;

d. Merchandising and operations: 3 semester hours;

e. Advertising and promotion: 3 semester hours;

f. Sales and selling: 3 semester hours;

g. Communication theory and techniques: 3 semester hours;

h. Consumer behavior: 3 semester hours;

i. International (global) marketing: 3 semester hours;

j. Finance, accounting, or marketing mathematics: 3 semester hours;

k. Technology applications: 3 semester hours; and

l. Supervised marketing occupational experience, 3 semester hours, or one year of full-time work experience in the field of marketing may be accepted in lieu of the supervised marketing internship.

If an individual is seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

B. Technical Professional License. An endorsement in a specialized marketing area, such as apparel and accessories, hotel operations, international marketing, or restaurant, may be granted to individuals who have:

1. Been recommended by an employing Virginia educational agency;

2. Completed two years of full-time occupational experience, or the equivalent, within the last five years in the teaching specialty area sought; and

3. Completed professional studies requirements (human development and learning: 3 semester hours; curriculum and instruction in career and technical education: 3 semester hours; and applications of instructional technology or classroom and behavior management: 3 semester hours).

If an individual is seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

8VAC20-23-270. Career and technical education – technology education.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program [~~from a regionally accredited college or university with a minimum of a baccalaureate degree~~] in technology education; or

2. [Earned a baccalaureate degree from a regionally accredited college or university and ~~C~~c]ompleted a major in technology education or 33 semester hours in technology education distributed in the following areas:

a. The nature of technology. Experiences shall include those that promote an understanding of the characteristics, scope, and core concepts of physical, biological, and informational technologies, the relationships among these technologies, and their connections to other science, technology, engineering, and mathematics (STEM) fields: 6 semester hours;

b. Technology and society. Experiences shall include those that develop a working knowledge of the cultural, social, economic, and political effects of technology, its

effect on the environment, and the role of society in the history, development, and use of physical, biological, and informational technologies: 3 semester hours;

c. Engineering. Experiences shall include those that develop comprehension of the attributes of technological design, inclusive of constraints, optimization, predictive analysis, problem solving, critical thinking, technical writing, and integrative mathematics and science: 6 semester hours;

d. Abilities for a technological world. Experiences shall include those that develop the capacity to utilize the design process, to use and maintain technological products and systems, and to assess their impact: 9 semester hours; and

e. The designed world. Experiences shall include those that promote an understanding of current and emerging physical, biological, and informational technologies: 9 semester hours; or

3. Earned a baccalaureate degree from a regionally accredited college or university with a major in one of the following fields of study: architecture, design, engineering, engineering technology, industrial technology, or physics and completed a minimum of 15 semester hours of technology education content coursework, including at least 3 semester hours in each of the following areas:

a. The nature of technology;

b. Technology and society;

c. Engineering;

d. Abilities for a technological world; and

e. The designed world.

If an individual is seeking [an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

8VAC20-23-280. Career and technical education – trade and industrial education.

A. Endorsement requirements.

1. [Earned a baccalaureate degree from a regionally accredited college or university and The candidate must have] graduated from an approved teacher preparation program [~~with a minimum of a baccalaureate degree from a regionally accredited college or university~~] in trade and industrial education; or

2. A candidate who has [earned a baccalaureate degree from a regionally accredited college or university and] graduated from an approved teacher preparation program that is not in the trade and industrial education program subject area for which the candidate is seeking endorsement must have:

a. A current state licensure or industry certification based on the prescribed standard or examination, if applicable; and

b. Evidence of at least two years of full-time or equivalent occupational experience within the past five years in the teaching specialty for which the candidate is seeking endorsement. A candidate whose occupational experience has not been within the last five years must participate in a supervised technical update related to the teaching specialty or area of endorsement or complete a supervised internship of

work experience of not less than six weeks related to the area of endorsement or teaching specialty.

If an individual is seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

B. Technical Professional License. An endorsement in a specialized trade and industrial education area will be granted to an individual who has:

1. Been recommended by an employing Virginia educational agency;

2. A current license or is currently certified as a professional practitioner in the area in which he is to be teaching, if applicable, or can demonstrate competency in the area of trade and industrial education he is to be teaching;

3. Evidence of at least two years of full-time or the equivalent occupational experience within the past five years in the teaching specialty for which he is seeking endorsement. Candidates whose occupational experience has not been within the last five years must participate in a supervised technical update related to the teaching specialty or area of endorsement or complete a supervised internship of work experience of not less than six weeks related to the area of endorsement or teaching specialty; and

4. Completed professional studies requirements (human development and learning: 3 semester hours; curriculum and instruction in career and technical education: 3

semester hours; and applications of instructional technology or classroom and behavior management: 3 semester hours).

If an individual is seeking an initial license in the Commonwealth with an endorsement in the area of career and technical education, an industry certification credential, as defined in 8VAC20-23-10, in the area in which the teacher seeks endorsement is required. If a teacher seeking an initial license in the Commonwealth has not attained an industry certification credential in the area in which the teacher seeks endorsement, the board may, upon request of the employing school division or educational agency, issue the teacher a provisional license to allow time for the teacher to attain such credential.

C. Add-on endorsement requirements. A candidate must:

1. Hold an active Collegiate Professional or Postgraduate Professional License with a teaching endorsement;

2. Demonstrate competency in the trade or industrial area being sought;

3. Hold current state licensure or industry certification for the trade or industrial area for which endorsement is sought based upon the prescribed standard or examination;

4. Have completed two years or 4,000 clock hours of satisfactory, full-time occupational experience at the journeyman level or an equivalent level in the occupation within the last five years. Candidates whose occupational experience has not been within the last five years must participate in a supervised technical update related to the teaching specialty or area of endorsement or complete a supervised internship of work experience of not less than six weeks related to the area of endorsement or teaching specialty; and

5. Have completed 3 semester hours in curriculum and instruction specific to vocational industrial education.

8VAC20-23-290. Career and technical education – transition and special needs (add-on endorsement).

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program [~~with a minimum of a baccalaureate degree from a regionally accredited college or university~~] in special needs; or

2. [Earned a baccalaureate degree from a regionally accredited college or university and ~~C~~c]ompleted a major in career and technical education or special education, pre-K-12 with an endorsement in one area of career and technical education or special education preK-12, including 12 semester hours distributed in the following areas:

a. Overview of special needs programs and services: 3 semester hours;

b. Instructional methods, curriculum, and resources: 3 semester hours;

c. Career and life planning, transitioning, occupational information, and delivery of cooperative education programs: 3 semester hours; and

d. Purposes and practices and characteristics of special populations: 3 semester hours; and

3. Completed successful, supervised occupational experience, 3 semester hours, or one year of full-time or the equivalent of relevant occupational experience within the past five years.

8VAC20-23-300. Computer science.

A. Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in computer science; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed 36 semester hours of coursework distributed in the following areas:

a. Mathematics, including discrete mathematics;

b. Data structures and algorithm analysis;

c. Foundations of computer science; and

d. Programming in at least two distinct languages: 6 semester hours.

B. Add-on endorsement requirements in computer science. The candidate must have:

1. [~~An earned~~Earned a] baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and

2. Completed 18 semester hours of coursework distributed in the following areas:

a. Mathematics, including discrete mathematics;

b. Data structures and algorithm analysis;

c. Foundations of computer science; and

d. Programming in at least two distinct languages: 6 semester hours.

8VAC20-23-310. Dance arts preK-12.

A. Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in dance arts; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in dance arts or 24 semester hours with coursework distributed in the following areas:

a. Development of movement language: 9 semester hours.

(1) A course in each area of ballet, folk, jazz, and modern dance: 6 semester hours; and

(2) Area of concentration in one area of ballet, folk, jazz, or modern dance beyond the entry level: 3 semester hours;

b. Composition, improvisation, and dance arts production, may include stage lighting, stage costuming, or stage makeup: 3 semester hours;

c. Scientific foundations, including human anatomy, kinesiology, and injury prevention and care for dance arts: 9 semester hours; and

d. Cultural understanding, including cultural context and dance history: 3 semester hours.

B. Add-on endorsement requirements in dance arts. The candidate must have:

1. [~~An e~~E]arned [a] baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and

2. Completed 15 semester hours of coursework distributed in the following areas:

a. Development of movement language: 9 semester hours.

(1) A course in each area of ballet, folk, jazz, and modern: 6 semester hours; and

(2) Area of concentration in one area of ballet, folk, jazz, or modern beyond the entry level: 3 semester hours;

b. Composition, improvisation, and dance arts production, may include stage lighting, stage costuming, or stage makeup: 3 semester hours; and

c. Cultural understanding, including cultural context and dance history: 3 semester hours.

8VAC20-23-320. Driver education (add-on endorsement).

Endorsement requirements. The candidate must have:

1. [~~An e~~E]arned [a] baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and

2. Completed an approved teacher preparation program in driver education; or

3. [Earned a baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and c~~C~~]ompleted 6 semester hours of coursework distributed in the following areas:

a. Driver Task Analysis: to include instructional strategies as prescribed in the [~~Curriculum and Administrative Guide for Driver Education in Virginia~~ *Curriculum and Administrative Guide for Driver Education in Virginia* ~~2010~~] (http://www.doe.virginia.gov/instruction/driver_education/curriculum_admin_guide/index.shtml); understanding the highway transportation system; applying Virginia's motor vehicle laws; personal, legal, and emotional factors; visual and sensory perception; risk perception and risk management; space management and other defensive driving techniques; environmental, financial, and other vehicle ownership responsibilities; vehicle technologies; and the scientific principles of the driving tasks: 3 semester hours; and

b. Principles and methodologies of classroom and in-car instruction, including applying classroom and in-car teaching techniques for delivering concurrent instruction; applying perception, vehicle balance, speed control, and other risk management principles to the development of precision driving skills; and understanding program administrative tasks, including juvenile licensing laws and issuance of a driver's license; a minimum of 14 hours of actual behind-the-wheel supervised teaching experience demonstrating vehicle control skills and performance capabilities that includes 2 hours of basic evasive maneuvers; and a minimum of 14 hours of mentorship with a licensed, endorsed driver education teacher: 3 semester hours.

4. A current, valid Virginia driver's license. [School divisions are to ensure that teachers of driver education hold a valid Virginia driver's license.]

8VAC20-23-330. Engineering.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in engineering;

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in engineering or an engineering subspecialty at an Accreditation Board for Engineering and Technology (ABET)-accredited college or university program;

3. Earned a baccalaureate degree from a regionally accredited college or university and completed an engineering technology, science, or technology education major with at least 12 semester hours of coursework in engineering courses, including:

a. Introduction to engineering design;

b. Statics or dynamics;

c. Circuits or fluid mechanics; and

d. Thermodynamics;

4. [Earned a baccalaureate degree from a regionally accredited college or university and c~~C~~]ompleted a science, mathematics, or technology education major with at least five years of successful experience working in an engineering environment; or

5. [Earned a baccalaureate degree from a regionally accredited college or university and holds~~Hold~~] a professional engineer's (P.E.) license.

8VAC20-23-340. English.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in English; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in English or a minimum of 36 semester hours of coursework distributed in the following areas:

a. Literacy and reading: 12 semester hours. Courses must include:

(1) Survey of British literature;

(2) Survey of American literature;

(3) World literature; and

(4) Literary theory and criticism.

b. Language: 3 semester hours. Includes the development and nature of the English language.

c. Composition: 12 semester hours. Experiences shall include:

(1) A grammar course integrating grammar and writing;

(2) The teaching of writing, based on current knowledge and most effective practices, including the use of technology for this purpose;

(3) An advanced composition course emphasizing rhetorical practices of expository, persuasive, argumentative, and analytical writing; and

(4) Teaching research including ethical accessing, evaluating, organizing, crediting, and synthesizing information.

d. Oral language: 3 semester hours. Experiences shall include the teaching of public and presentation speaking, including nonverbal communication and the role of communication in small group and mass communication.

e. Electives from the areas listed in this section: 6 semester hours.

8VAC20-23-350. English as a second language preK-12.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in English as a second language; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed 24 semester hours of coursework distributed in the following areas:

a. Teaching of reading and writing. Courses must include [~~the five areas of reading instruction:~~] phonemic [and other phonological] awareness[~~,~~;pre-reading, during reading, and post-reading strategies; vocabulary development and guided reading. Ability to structure interactive tasks that engage students in using oral language to develop language and reading skills. Ability to determine students' reading levels

and design instruction for multi-level classrooms by incorporating appropriate scaffolding or language supports ~~phonics, fluency, vocabulary and text comprehension as well as the similarities and differences between reading in a first language and reading in a second language and a balanced literacy approach~~]; one course must address teaching reading to English language learners: 6 semester hours;

b. English linguistics: [general and English linguistics] 3 semester hours;

c. Cross-cultural education: 3 semester hours;

d. Second language acquisition: 3 semester hours;

e. Methods of English as a second language, to include [instruction based on] the [understanding of the] World-Class Instructional Design and Assessment (WIDA) English Language Development (ELD) Standards: 3 semester hours;

f. English as a second language assessment to include assessing comprehension and communication in English: 3 semester hours; and

g. Electives from the areas listed in this section: 3 semester hours.

8VAC20-23-360. Foreign language preK-12.

A. The specific language of the endorsement will be noted on the license.

B. Endorsement requirements for foreign language preK-12 - languages other than Latin [and American Sign Language]. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in a foreign language; or

2. Earned a baccalaureate degree from a regionally accredited college or university[;] and completed [a major in the foreign language or] 30 semester hours of coursework above the intermediate level in the foreign language distributed in the following areas:

a. Advanced grammar and composition;

b. Conversation, culture and civilization, and literature; and

c. In addition to the 30 semester hours, completed a minimum of 3 semester hours of methods of teaching foreign languages at the elementary and secondary levels.

3. Endorsement in a second [foreign] language may be obtained with 24 semester hours of coursework above the intermediate level.

4. Candidates who have learned a foreign language without formal academic credit in a regionally accredited college or university must complete the following requirements:

a. Achieve a qualifying score on a foreign language assessment in the appropriate language as prescribed by the Virginia Board of Education; and

b. Earn a minimum of 3 semester hours of methods of teaching foreign languages at the elementary and secondary levels from a regionally accredited college or university in the United States or obtain teacher certification in another country with at least 3 semester hours of methods of teaching foreign languages at the elementary and secondary levels at a foreign institution.

C. Endorsement requirements for foreign language preK-12 - Latin. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in Latin; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed 24 semester hours of Latin above the intermediate level. A maximum of six semester hours of Roman history, Roman life, mythology, or archaeology may be included in the total hours. A minimum of 3 semester hours of methods of teaching Latin at the elementary and secondary levels are required.

D. Endorsement requirements for foreign language preK-12 - American Sign Language.

1. The candidate must have (i) graduated from an approved teacher preparation program in a foreign language - American Sign Language or (ii) earned a baccalaureate degree from a regionally accredited college or university and completed a major in American Sign Language or 24 semester hours above the intermediate level in American Sign Language. The program shall include (i) courses in advanced grammar and syntax, conversation, and culture and (ii) a minimum of 3 semester hours of methods of teaching foreign languages at the elementary and secondary levels.

2. Native users or candidates who have learned American Sign Language without formal academic credit in a regionally accredited college or university, as explained in subdivision 1 of this subsection, must complete the following requirements:

a. Competency in American Sign Language demonstrated by written documentation of one of the following:

(1) Hold a current, valid Provisional, Qualified, or Professional certification by the American Sign Language Teachers' Association;

(2) Hold one of the following current, valid national certificates in interpreting:

(a) Registry of Interpreters for Deaf certification in at least one of the following: Certificate of Interpretation (CI), Certificate of Deaf Interpretation (CDI), Reverse Skills Certification (RSC), or Comprehensive Skills Certificate (CSC);

(b) Hold a current, valid National Association for the Deaf Level IV certification or higher; or

(c) National Interpreter Certification (NIC); or

(3) Complete requirements by achieving a qualifying score on an assessment demonstrating proficiency in American Sign Language prescribed by the Virginia Board of Education.

b. Completed a minimum of 3 semester hours of methods of teaching foreign languages at the elementary and secondary levels from a regionally accredited college or university in the United States; and

c. Earned a minimum of 6 semester hours in coursework including grammar and syntax of American Sign Language.

8VAC20-23-370. Gifted education (add-on endorsement).

Endorsement requirements. The candidate must have:

1. An earned baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and

2. [Earned a baccalaureate degree from a regionally accredited college or university and ~~C~~d]ompleted an approved teacher preparation program in gifted education; or

3. Completed the following requirements:

[a. An earned baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and]

[b.] Completed 12 semester hours of graduate-level coursework in gifted education distributed in the following areas:

(1) [~~Academic and social-emotional characteristics and special populations of gifted learners~~Introduction and identification of giftedness:] 3 semester hours;

(2) [~~Curriculum models and differentiation of instruction for~~Social and emotional development and guidance of] gifted learners: 3 semester hours;

(3) [~~Identification and assessment of~~]Curriculum and instructional strategies for gifted learners: 3 semester hours; and

(4) [~~Current trends and issues in the field of gifted education~~Advanced course work with in one of the following areas]: 3 semester hours; [~~and~~]

[a. Advanced curriculum, instruction, and assessment design;]

[b. Advanced program development and evaluation;]

[c. Advanced study in underrepresented populations; and]

[d.] Completed a practicum of at least 45 instructional hours. This practicum shall include a minimum of 45 instructional hours of successful teaching experiences with gifted students in a public or an accredited nonpublic school. In lieu of the practicum, one year of successful, full-time teaching experience with gifted students in a public or an accredited nonpublic school may be accepted provided the teacher is assigned a mentor holding a valid license with an endorsement in gifted education.

8VAC20-23-380. Health and physical education preK-12.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in health and physical education; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in health and physical education or 45 semester hours of coursework distributed in the following areas:

a. Personal health [~~and~~] safety, [and care of athletic injuries]: 3 semester hours;

b. Human anatomy, physiology[, exercise physiology] and [~~kinesiology~~biomechanics of human movement]: 9 semester hours;

c. General health and physical education theory, including curriculum design and development in health and physical education: 3 semester hours;

d. Instructional methods and skills for secondary physical education: 3 semester hours;

e. [Concepts of motor learning, ~~i~~instructional] methods and skills for elementary physical education: 3 semester hours;

f. [Instruction methods for elementary and secondary ~~S~~school health ~~methods course~~]: 3 semester hours;

g. Health and physical education electives: 9 semester hours;

h. [Instructional methods and strategies for ~~A~~adapted] physical education: 3 semester hours;

i. Technology in health and physical education: 3 semester hours;

j. [Principles of Human] Nutrition: 3 semester hours; and

k.[~~Measurement~~Assessment] and evaluation in the content area: 3 semester hours.

8VAC20-23-390. History and social sciences.

A. Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in history and social sciences; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed 51 semester hours of coursework distributed in the following areas:

a. History: a major in history or 18 semester hours in history (must include coursework in American history, Virginia history, and world history);

b. Political science: a major in political science or 18 semester hours in political science to include coursework in American government (state and local government);

c. Geography: 9 semester hours; and

d. Economics: 6 semester hours.

B. Add-on endorsement requirements in history, political science, geography, and economics. The candidate must have:

1. Earned a baccalaureate degree from a regionally accredited college or university and have a teaching license with an endorsement in history, political science, geography, or economics; and

2. Completed 21 semester hours of coursework in the additional social science area (i.e., history, political science, geography, or economics) sought.

8VAC20-23-400. Journalism (add-on endorsement).

Endorsement requirements. The candidate must have:

1. [~~An eE~~]arned [a] baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and

2. Completed a minimum of 15 semester hours in journalism.

8VAC20-23-410. Keyboarding (add-on endorsement).

Endorsement requirements. The candidate must have:

1. [~~An eE~~]arned [a] baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and

2. Completed 6 semester hours in keyboarding. Three of the six semester hours may be from either formal keyboarding instruction or documented demonstrated mastery of the touch keyboarding skill, and three semester hours must include document formatting skills, word processing, and computer applications.

8VAC20-23-420. Library media preK-12.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved preparation program in school library media; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed 24 semester hours distributed in the following areas:

a. Teaching for learning, including knowledge of learners and learning; effective and knowledgeable teaching; collaborative instructional partners; integration of learning standards and technologies; assessment of and for student learning; and the design

and implementation of instruction that engages students interests and develops their ability to inquire, think critically, and gain and share knowledge: 3 semester hours;

b. Literacy and reading, including familiarity with children's, young adult, and professional literature in multiple formats; use of a variety of strategies to promote reading for enjoyment and information; collection development to support diverse learning needs; and collaboration to reinforce reading instructional strategies: 6 semester hours;

c. Information and knowledge, including efficient and ethical information-seeking behavior, ethical and equitable access to information, design and delivery of authentic learning through current and emerging technology, and the use of evidence-based action research to create and share knowledge: 6 semester hours;

d. Advocacy and leadership, including networking with the library community, commitment to professional development, leadership in articulating the role of the school library program in the educational community and in student learning, and advocacy for school library programs, resources, and services: 3 semester hours; and

e. Program management and administration, including planning, developing, implementing, and evaluating library programs, collections, and facilities; personnel; funding; organization of materials; professional ethics; and strategic planning and program assessment: 6 semester hours.

3. Supervised school library media practicum. Experiences shall include clinical experience to give the applicant an opportunity to apply the skills, understandings, and competencies required for the endorsement. One year of successful, full-time

experience as a school librarian in a public or accredited nonpublic school may be accepted in lieu of the supervised practicum.

8VAC20-23-430. Mathematics.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]Graduated from an approved teacher preparation program in mathematics; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in mathematics or 36 semester hours of coursework distributed in each of the following areas:

a. Algebra. Experience shall include linear algebra (matrices, vectors, and linear transformations) and abstract algebra (ring, group, and field theory);

b. Geometry. Experience shall include Euclidean and non-Euclidean geometries;

c. Analytic geometry;

d. Probability and statistics;

e. Discrete mathematics. Experience shall include the study of mathematical properties of finite sets and systems and linear programming;

f. Calculus. Experience shall include multivariable calculus; [~~and~~]

g. Mathematical modeling[; and~~.~~]

[h. Computer science, including two programming languages.]

8VAC20-23-440. Mathematics – [~~A~~a]lgebra I (add-on endorsement).

Endorsement requirements. The candidate must have:

1. [~~An eE~~]arned [a] baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and

2. Either:

a. Completed an approved teacher preparation program in Algebra I; or

b. Completed 24 semester hours that include coursework in each of the following areas:

(1) Elementary functions, introductory college algebra, and trigonometry;

(2) Linear algebra;

(3) Calculus;

(4) Euclidean geometry;

(5) Probability and statistics;

(6) Discrete mathematics;

(7) Mathematical modeling; and

(8) Methods of teaching algebra.

8VAC20-23-450. Music education – instrumental preK-12.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in music education - instrumental; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed 42 semester hours of coursework distributed in the following areas:

a. Basic music knowledge. Experiences shall be related to music theory, music history, and literature: 18 semester hours.

b. Musical performance. Experiences shall consist of developing competency in a primary performance medium (band or orchestral instrument), in a secondary performance medium (band, orchestral, or keyboard instrument), and in teaching, rehearsing, and conducting ensembles: 18 semester hours.

c. Electives with coursework selected from either of the two areas listed in subdivisions 2 a and 2 b of this section: 6 semester hours.

8VAC20-23-460. Music education – vocal/choral preK-12.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in music education - vocal/choral; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed 42 semester hours of coursework distributed in the following areas:

a. Basic music knowledge. Experiences shall be related to music theory, music history, and literature: 18 semester hours.

b. Musical performance. Experiences shall consist of developing competency in a primary and secondary medium, selected from voice or keyboard and in teaching, rehearsing, and conducting ensembles: 18 semester hours.

c. Electives with coursework selected from either of the two areas listed in subdivisions 2 a and 2 b of this section: 6 semester hours.

8VAC20-23-470. Science – biology.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in biology;

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in biology or 32 semester hours in biology, and at least one course in each of the following: genetics, biochemistry/molecular biology, cell biology, botany, zoology, anatomy/physiology, ecology, and evolutionary biology and other preparation consistent with the competencies for the endorsement; or

3. Earned an endorsement in another science discipline and at least 18 semester hours in biology, including at least one course in each of the following areas: genetics, biochemistry/molecular biology or cell biology, botany [,~~or~~] zoology, anatomy/physiology, and evolutionary biology or ecology.

8VAC20-23-480. Science – chemistry.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in chemistry;

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in chemistry or 32 semester hours in chemistry, including at least one course in each of the following: inorganic chemistry, organic chemistry, physical chemistry, biochemistry, and analytical chemistry and other preparation consistent with the competencies required for the endorsement; or

3. Earned an endorsement in another science discipline and at least 18 semester hours in chemistry, including at least one course in each of the following areas: inorganic chemistry, organic chemistry, physical chemistry, biochemistry, and analytical chemistry.

8VAC20-23-490. Science – Earth science.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in Earth science;

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in Earth science, geology, or environmental science with a minimum of 32 semester hours in Earth sciences, including at least one course in each of the following: structural geology, petrology, paleontology, oceanography, meteorology, and astronomy/space science; or

3. Earned an endorsement in another science discipline and at least 18 semester hours in Earth sciences, including at least one course in each of the following areas: structural geology, petrology, paleontology, oceanography, meteorology, and astronomy/space [~~or planetary~~] science.

8VAC20-23-500. Science – physics.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in physics;

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in physics or 32 semester hours in physics, including the following

coursework: mechanics, electricity and magnetism, optics, and modern physics and other preparation consistent with the competencies required for the endorsement; or

3. Earned an endorsement in another science discipline and at least 18 semester hours in physics, including preparation in each of the following areas: mechanics, electricity and magnetism, optics, and modern physics.

8VAC20-23-510. Special education – adapted curriculum K-12.

Endorsement requirements: The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved program in special education - adapted curriculum; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed 27 semester hours in the education of students with disabilities distributed in the following areas:

a. Core coursework: 12 semester hours distributed among the following areas:

(1) Foundations: 3 semester hours. Characteristics that include knowledge of the foundation for educating students with disabilities; historical, ethical, and legal aspects that include an understanding and application of the federal and state regulatory requirements; and expectations associated with identification, education, and evaluation of students with disabilities;

(2) Assessment and evaluation: 3 semester hours. Includes an understanding and application of the foundation of assessment and evaluation related to best practices in special education, including types and characteristics of assessment, introduction to formal and informal assessment, and the use of assessments and other information to determine special education eligibility, service delivery, curriculum, and instruction of students with disabilities. Understanding of the current legal and

ethical issues related to assessment selection and use, including comprehensive evaluation requirements, students with disabilities participation in the state and local accountability systems, assessment options, appropriate grading and testing accommodations, and assessment of students from diverse backgrounds.

(3) Collaboration that includes skills in consultation, case management, co-teaching, and collaboration: 3 semester hours. Includes understanding roles and responsibilities, knowledge and application of effective communication skills and of culturally responsive practices and strategies, and the ability to develop home, school, and community partnerships to address the needs of students with disabilities.

(4) Management of classroom instruction and behaviors: 3 semester hours. Includes an understanding and knowledge of research-based classroom management techniques, positive behaviors supports, and individual interventions and a demonstrated ability to create a safe, orderly classroom environment including classroom organization, instructional design, and establishment of classroom routines and procedures. Knowledge of the elements of effective instructional planning, differentiation of instruction, and other instructional approaches to enhance student engagement and achievement. Understanding of behavior assessments, data collection and analysis, and development and monitoring of behavior intervention plans.

b. Adapted curriculum coursework: 15 semester hours of coursework distributed in the following areas:

(1) Characteristics: 3 semester hours. Skills in this area include the ability to demonstrate knowledge of the characteristics, including medical and health conditions, and learning and support needs of students with disabilities (K-12) whose

cognitive and functional skills are significantly different from typically developing peers and therefore require adaptations to the general curriculum for an appropriate education, including, but not limited to, students with autism spectrum disorders, developmental delay, intellectual disability, traumatic brain injury, and multiple disabilities including sensory, deaf-blindness, speech-language, orthopedic and/or [other] health impairments as an additional disability to those referenced above.

(2) Individualized education program (IEP) implementation: 3 semester hours. Knowledge of the eligibility process and legal and regulatory requirements of IEP development, including timelines, components, team composition, roles, and responsibilities. Skills in this area include the ability to apply knowledge of assessment and evaluation throughout the K-12 grade levels to construct, use, and interpret a variety of standardized and nonstandardized data collection techniques; to make decisions about student progress, instruction, program, goal development, modifications, adaptations, placement, and teaching methodology for students with disabilities who are accessing the general education curriculum and Standards of Learning through an aligned curriculum; and to demonstrate the use of assessment, evaluation, and other information to develop and implement individual educational planning and group instruction with students with disabilities in an adapted curriculum across the K-12 grade levels.

(3) Transitioning: 3 semester hours. Skills in this area include the ability to prepare students and work with families to provide successful student transitions throughout the educational experience to include postsecondary education, training, employment, and independent living that addresses an understanding of long-term planning, age-appropriate transition assessments, career development, life skills, community experiences and resources, and self-determination to include goal

setting, decision making, problem solving, self-awareness and self-advocacy, guardianship, and other legal considerations.

(4) Instructional methods and strategies for the adapted curriculum: 3 semester hours. An understanding and application of service delivery, curriculum, and instruction of students with disabilities who need an adapted curriculum. Knowledge of the general curriculum requirements and expectations and how to provide access to the curriculum based on student characteristics and needs. Skills in this area include the ability to understand and use a range of modifications, adaptations, special instructional strategies, and research-based interventions that reflect best practice in reading, writing, and mathematics instruction for students with more significant disabilities; ability to align the instructional practices and intervention with the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*] and state assessments; knowledge of available assistive and instructional technologies, including alternative communication methods and systems to promote learning and independence for students with disabilities in the adaptive curriculum and the ability to evaluate its effectiveness; ability to develop and use curriculum-based and standardized assessment to conduct ongoing evaluations of instructional material and practices to determine effectiveness and assess student needs as they relate to curriculum design and delivery; ability to modify and adapt instructional content in a variety of settings and collaborate with general education content teachers to develop and implement instructional practices that meet the needs of students with disabilities in the adapted curriculum and monitor student progress.

(5) Individualized supports and specialized care of students with significant disabilities: 3 semester hours. Knowledge of and ability to implement adapted strategies to address the positioning, handling, communication, personal care, and

medical needs of students with significant disabilities. Knowledge and understanding of the roles of related disciplines and service providers in collaborative planning and service delivery. Demonstration of the ability to develop and utilize a [~~blended~~ distance learning] curriculum design to address disability-specific or unique needs such as feeding and communication while addressing the adapted curriculum requirements.

8VAC20-23-520. Special education blindness and visual impairments preK-12.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in special education visual impairments preK-12; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in special education blindness and visual impairments or 30 semester hours in education of students with visual impairments, distributed with at least one course in each of the following areas:

a. Characteristics of students with visual impairment. Provides an overview of the characteristics of and services to persons with visual impairments, including the impact of visual impairment on infant and child growth and development, child and adolescent emotional and social development, and family interaction patterns. Includes the educational, conceptual, psychosocial, and physical implications of a visual impairment.

b. Foundations [of education and the teaching profession]. Includes knowledge of the foundation for educating students with disabilities; historical, ethical, and legal aspects that include understanding and application of the regulatory requirements;

and expectations associated with identification, education, and evaluation of students with disabilities.

c. Braille code: 3 semester hours. Includes the literary code of Braille, its implications for educational and literacy programs for students with visual disabilities and how to teach the Braille code to students with visual impairments.

d. Braille reading and writing: 3 semester hours. Includes instruction in the various technologies used by students who use Braille; basic instruction on transcription of advanced Braille codes, [including uncontracted and contracted Unified English Braille,] music, foreign language, chemistry, [~~computer Braille,~~] and Nemeth code (Braille mathematics code); techniques for teaching skills in each code; and technology tools used to create Braille and tactile materials in addition to other assistive technologies used for instruction in mathematics and science.

e. Medical and educational implications of visual impairment. Includes anatomy of the human eye, normal visual development, pathology of the eye, examination procedures for the identification of visual pathology, and the effects of pathology on visual learning and development.

f. Assistive technology for students with sensory impairment. Introduces specific technology and resources available to enhance and improve ability of individuals with sensory disabilities and includes literacy skill development of students who are blind or visually impaired using technology.

g. Curriculum and assessment. Includes knowledge of educational assessments used with students with visual impairments and additional disabilities including deaf-blindness. Addresses assessment of technology needs of students with visual impairments, including functional vision assessments, learning media assessments,

assistive technology, and assessment in areas of the expanded core curriculum; application of assessment results to development of the individualized education program (IEP); planning for placement; and services and accommodations for students with visual impairments.

h. Positive behavior intervention supports. Includes understanding of research-based, positive behavior intervention supports and individual interventions; knowledge of the elements of effective instructional planning, differentiation of instruction, and other instructional approaches to enhance student engagement and achievement; and understanding of behavior assessments, data collection and analysis, development and monitoring of behavior intervention plans.

i. Collaboration. Includes skills in consultation, case management, co-teaching, and collaboration that include understanding roles and responsibilities, knowledge and application of effective communication skills, of culturally responsive practices and strategies, and the ability to develop home, school, and community partnerships to address the needs of students who are visually impaired.

j. Teaching methods.

(1) Includes methods of teaching compensatory skills, the core curriculum, and technology used by students who are blind and visually impaired; introduces individual family service plans (IFSPs); and includes understanding and application of development and implementation of the IEP, including service delivery, curriculum, and instruction of students who are visually impaired.

(2) Knowledge of the general curriculum requirements and expectations and how to provide access to the curriculum based on student characteristics and needs.

(3) Ability to assess, interpret data, and implement instructional practices to address the identified needs of the students. Skills in this area include the ability to identify, understand, and implement a range of specialized instructional strategies and research-based interventions that reflect best practice in instruction for students who are visually impaired.

(4) Ability to align the instructional practices and intervention with the Standards of Learning and state assessments.

(5) Ability to develop and use curriculum-based and standardized assessments to conduct ongoing evaluations of instructional materials and practices to assess student needs as they relate to curriculum design and delivery.

(6) Ability to model and directly teach instructional strategies in a variety of settings, and monitor student progress.

(7) Ability to adapt materials and procedures to meet the needs of students with visual impairments.

k. Orientation and mobility. Includes the components of orientation and mobility (O&M); how the need for independent travel in the blind population created the field of O&M; and the philosophy and history of O&M, including cane instruction, dog guides, and methods of travel. Addresses techniques in developing orientation skills and basic mobility instruction. Motor and concept skill development are emphasized.

8VAC20-23-530. Special education deaf and hard of hearing preK-12.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in special education deaf and hard of hearing; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in special education deaf and hard of hearing or 27 semester hours in education of students who are deaf and hard of hearing distributed in the following areas:

a. Foundations: 3 semester hours. Includes knowledge of the foundation for educating students with disabilities; historical, ethical and legal aspects that include understanding and application of the regulatory requirements; and expectations associated with identification, education, and evaluation of students with disabilities.

b. Characteristics: 3 semester hours. Includes the ability to demonstrate knowledge of etiologies of hearing loss, definitions, characteristics, learning, and support needs of students who are deaf and hard of hearing from pre-K through secondary levels, who may be using various communication modalities/languages and who may have additional disabilities.

c. Assessment and evaluation: 3 semester hours. Includes an understanding and application of the foundation of assessment and evaluation related to best practices, including types and characteristics of assessments, formal and informal assessment, and the use of assessment information to determine special education eligibility and inform service delivery, curriculum, accommodations, instructional methods, and student progress. Understanding comprehensive evaluation requirements, participation of students with disabilities in state and local accountability systems, assessment options, appropriate testing accommodations, and assessment of students from diverse backgrounds.

d. Instructional planning: 3 semester hours.

(1) Familiarity with individual family service plans (IFSPs).

(2) An understanding and application of development and implementation of the individualized education program (IEP) including service delivery, curriculum, and instruction of students who are deaf and hard of hearing and transition.

(3) Knowledge of the general curriculum requirements and expectations and how to provide access to the curriculum based on student characteristics and needs.

(4) Ability to assess, interpret data, and implement instructional practices to address the identified needs of the students. Skills in this area include the ability to identify, understand, and implement a range of specialized instructional strategies and research-based interventions that reflect best practice in instruction for students who are deaf and hard of hearing.

(5) Ability to align the instructional practices and intervention with the Standards of Learning and state assessments.

(6) Ability to develop and use curriculum-based and standardized assessments to conduct ongoing evaluations of instructional materials and practices to assess student needs as they relate to the curriculum design and delivery.

(7) Ability to model and directly teach instructional strategies in a variety of settings, collaborate with general educators to develop and implement instructional practices that meet the needs of students who are deaf and hard of hearing, and monitor student progress.

e. Speech, language, and literacy development: 3 semester hours. Includes an understanding of the normal developmental sequence of speech, language (oral, signed, and written), auditory, and cognitive milestones, varying methodologies and strategies used in assessing language skills (through the air and spoken) of a student who is deaf and hard of hearing; demonstrate skills necessary to foster and

enhance language development and communication skills in students who are deaf and hard of hearing including American Sign Language, cued speech, and listening and spoken language skills. Ability to model and directly teach instructional strategies that foster language and literacy development.

f. Classroom and behavior management: 3 semester hours. Includes an understanding and knowledge of research-based classroom management techniques, positive behavior intervention supports and individual interventions; and demonstrated ability to create a safe, orderly classroom environment including classroom organization, instructional design, and establishment of classroom routines and procedures. Knowledge of the elements of effective instructional planning, differentiation of instruction, and other instructional approaches to enhance student engagement and achievement. Understanding of behavior assessments, data collection and analysis, development, and monitoring of behavior intervention plans

g. Audiology and speech and hearing science: 3 semester hours. Understanding of the basic principles of sound reception and production including neuroanatomy of speech and hearing mechanisms and physical characteristics and measurement of acoustic stimuli; biological, neurological, and acoustic bases of communication; reading and interpreting audiograms and other audiologic assessments used in determining eligibility; knowledge of types, degrees, and effects of hearing loss on developmental domains; relevance of age of onset, age of identification of hearing loss, and age of amplification and intervention in speech and language development; ability to troubleshoot hearing aids, external components of cochlear implants, and other assistive listening devices; ability to foster development of listening skills.

h. Collaboration: 3 semester hours. Includes skills in consultation, case management, co-teaching, and collaboration that includes understanding roles and responsibilities, knowledge and application of effective communication skills, of culturally responsive practices and strategies, and the ability to develop home, school, and community partnerships to address the needs of students who are deaf and hard of hearing.

i. Communication Modalities: 3 semester hours. Includes introduction to the various communication modalities used by students who are deaf and hard of hearing, including listening and spoken language, cued speech, speech reading, and through the air communication including use of American Sign Language (ASL) and contact varieties of signed language and coursework to learn ASL.

8VAC20-23-540. Special education early childhood (birth-age five years).

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in early childhood special education; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in early childhood special education or 27 semester graduate hours in early childhood special education, including at least one course in each of the following:

a. Foundations and legal aspects of special education: 3 semester hours;

b. Assessment for diagnosis, program planning, and curriculum-based measurement to document progress for young children with typical development, disabling, and at-risk conditions: 3 semester hours;

c. Curriculum and instructional programming for preschool: 3 semester hours;

d. Speech and language development and intervention: 3 semester hours;

e. Medical aspects: 3 semester hours;

f. Social and emotional skills and behavior management for early childhood: 3 semester hours;

g. Consultation, co-teaching, coaching, and mentoring: 3 semester hours;

h. Family-centered intervention: 3 semester hours; and

i. Early childhood elective: 3 semester hours.

8VAC20-23-550. Special education – general curriculum K-12.

Endorsement requirements: The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved program in special education - general curriculum; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed 27 semester hours in the education of students with disabilities distributed in the following areas:

a. Core coursework: 12 semester hours distributed among the following areas:

(1) Foundations: 3 semester hours. Characteristics that include knowledge of the foundation for educating students with disabilities; historical, ethical, and legal aspects that include an understanding and application of the federal and state regulatory requirements; and expectations associated with identification, education, and evaluation of students with disabilities.

(2) Assessment and evaluation: 3 semester hours. Includes an understanding and application of the foundation of assessment and evaluation related to best practice in special education, including types and characteristics of assessment, introduction to formal and informal assessment, and the use of assessments and other information to determine special education eligibility, service delivery, curriculum, and instruction of students with disabilities. Understanding of the current legal and ethical issues related to assessment selection and use, including comprehensive evaluation requirements, students with disabilities participation in the state and local accountability systems, assessment options, appropriate grading and testing accommodations, and assessment of students from diverse backgrounds.

(3) Collaboration that includes skills in consultation, case management, co-teaching, and collaboration: 3 semester hours. Includes understanding roles and responsibilities, knowledge and application of effective communication skills and of culturally responsive practices and strategies and the ability to develop home, school, and community partnerships to address the needs of students with disabilities.

(4) Management of classroom instruction and behaviors: 3 semester hours. Includes an understanding and knowledge of research-based classroom management techniques, positive behavior support, and individual interventions and a demonstrated ability to create a safe, orderly classroom environment, including classroom organization, instructional design, and establishment of classroom routines and procedures. Knowledge of the elements of effective instructional planning, differentiation of instruction, and other instructional approaches to enhance student engagement and achievement. Understanding of behavior assessments,

data collection and analysis, development, and monitoring of behavior intervention plans.

b. General curriculum coursework: 15 semester hours distributed in the following areas:

(1) Characteristics: 3 semester hours. Skills in this area shall include the ability to demonstrate knowledge of definitions, characteristics, and learning and behavioral support needs of students with disabilities who are accessing the general education curriculum at the elementary, middle, and high school levels, including but not limited to, students with learning disabilities, emotional disability, and intellectual disabilities; developmental delay; autism; other health impairments; traumatic brain injury; and multiple disabilities.

(2) Individualized education program development and implementation: 3 semester hours. Knowledge of the eligibility process and legal and regulatory requirements of IEP development including timelines, components, team composition, and roles and responsibilities. Skills in this area include the ability to apply knowledge of assessment and evaluation throughout the K-12 grade levels to construct, use, and interpret a variety of standardized and nonstandardized data collection techniques; to make decisions about student progress, instructional program, goal development, accommodations, placement, and teaching methodology for students with disabilities who are accessing the general education curriculum and the standards of learning; and to demonstrate the use of assessment, evaluation, and other information to develop and implement individual educational planning and group instruction with students with disabilities who are accessing the general education curriculum across the K-12 grade levels.

(3) Transitioning: 3 semester hours. Skills in this area include the ability to prepare students and work with families and community agencies to provide successful student transitions throughout the educational experience to include postsecondary education training, employment, and independent living that addresses an understanding of long-term planning, career development, life skills, community experiences and resources, self-advocacy, and self-determination, guardianship, and legal considerations.

(4) Instructional strategies in reading and writing: 3 semester hours.

(a) An understanding and application of service delivery, curriculum, and instruction of students with disabilities in reading and writing.

(b) Knowledge of the general curriculum, English requirements and expectations, and how to provide access to the curriculum based on student characteristics and needs.

(c) Ability to assess, interpret data, and implement instructional practices to address the identified reading needs of the students. Skills in this area include the ability to identify, understand, and implement a range of specialized instructional strategies and research-based interventions that reflect best practice in reading and writing instruction for students with disabilities.

(d) Ability to align the instructional practices and intervention with the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*] and state assessments.

(e) Knowledge and ability to utilize current assistive and instructional reading and writing technologies to promote learning and independence for students with disabilities in the general curriculum and the ability to evaluate the effectiveness of the use of the technologies.

(f) Ability to develop and use curriculum-based and standardized reading and writing assessments to conduct ongoing evaluations of instructional materials and practices to determine effectiveness and assess student needs as they relate to the curriculum design and delivery.

(g) Ability to model and directly teach reading and writing instructional strategies in a variety of settings, collaborate and co-teach with general educators to develop and implement instructional practices that meet the needs of students with disabilities in the general curriculum, and monitor student progress.

(5) Instructional strategies in mathematics: 3 semester hours.

(a) An understanding and application of service delivery, curriculum, and instruction of students with disabilities in mathematics.

(b) Knowledge of the general curriculum mathematics requirements and expectations and how to provide access to the curriculum based on student characteristics and needs.

(c) Ability to assess, interpret data, and implement instructional practices to address calculations, reasoning, and problem-solving skills. Skills in this area include the ability to understand and use a range of specialized mathematics instructional strategies and research-based interventions that reflect best practice in mathematics instruction for students with disabilities.

(d) Ability to align the instructional practices and intervention with the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*] and state assessments.

(e) Knowledge of and ability to utilize current mathematics related assistive and instructional technologies to promote learning and independence for students with

disabilities in the general curriculum and the ability to evaluate the effectiveness of the use of the technologies.

(f) Ability to develop and use curriculum-based and standardized mathematics assessments to conduct ongoing evaluations of instructional materials and practices to determine effectiveness and assess student needs as they relate to the mathematics curriculum design and delivery.

(g) Ability to model and directly teach mathematics instructional strategies in a variety of settings, collaborate and co-teach with general educators to develop and implement instructional practices that meet the needs of students with disabilities in the mathematics general curriculum, and monitor student progress.

8VAC20-23-560. Special education – general curriculum K-6 (add-on endorsement).

Endorsement requirements: The candidate must [have]:

1. [~~Hold an e~~E]arned [a] baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with an endorsement in elementary education (i.e., early/primary education preK-3 or elementary education preK-6).

2. [~~Have c~~C]ompleted 15 semester hours in the education of students with disabilities distributed in each of the following areas:

a. Foundations: 3 semester hours. Characteristics that include knowledge of the foundation for educating students with disabilities; historical, ethical, and legal aspects that include an understanding and application of the federal and state regulatory requirements; and expectations associated with identification, education, and evaluation of students with disabilities.

b. Individualized education program development and implementation: 3 semester hours. Knowledge of the eligibility process and legal and regulatory requirements of IEP development including timelines, components, team composition, and roles and responsibilities. Skills in this area include the ability to apply knowledge of assessment and evaluation throughout the K-12 grade levels to construct, use, and interpret a variety of standardized and nonstandardized data collection techniques; to make decisions about student progress, instructional, program, goal development, accommodations, placement, and teaching methodology for students with disabilities who are accessing the general education curriculum and the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*]; and to demonstrate the use of assessment, evaluation, and other information to develop and implement individual educational planning and group instruction with students with disabilities who are accessing the general education curriculum across the K-12 grade levels.

c. Assessment and evaluation: 3 semester hours. Includes an understanding and application of the foundation of assessment and evaluation related to best practice in special education, including types and characteristics of assessment, introduction to formal and informal assessment, and the use of assessments and other information to determine special education eligibility, service delivery, curriculum, and instruction of students with disabilities. Understanding of the current legal and ethical issues related to assessment selection and use, including comprehensive evaluation requirements, students with disabilities' participation in the state and local accountability systems, assessment options, appropriate grading and testing accommodations, and assessment of students from diverse backgrounds.

d. Instructional strategies in reading and writing: 3 semester hours.

(1) An understanding and application of service delivery, curriculum, and instruction of students with disabilities in reading and writing.

(2) Knowledge of the general curriculum, English requirements and expectations, and how to provide access to the curriculum based on student characteristics and needs.

(3) Ability to assess, interpret data, and implement instructional practices to address the identified reading needs of the students. Skills in this area include the ability to identify, understand, and implement a range of specialized instructional strategies and research-based interventions that reflect best practice in reading and writing instruction for students with disabilities.

(4) Ability to align the instructional practices and intervention with the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*] and state assessments.

(5) Knowledge and ability to utilize current assistive and instructional reading and writing technologies to promote learning and independence for students with disabilities in the general curriculum and the ability to evaluate the effectiveness of the use of the technologies.

(6) Ability to develop and use curriculum-based and standardized reading and writing assessments to conduct ongoing evaluations of instructional materials and practices to determine effectiveness and assess student needs as they relate to the curriculum design and delivery.

(7) Ability to model and directly teach reading and writing instructional strategies in a variety of settings, collaborate and co-teach with general educators to develop and implement instructional practices that meet the needs of students with disabilities in the general curriculum, and monitor student progress.

e. Instructional strategies in mathematics: (3 semester hours).

(1) An understanding and application of service delivery, curriculum, and instruction of students with disabilities in mathematics.

(2) Knowledge of the general curriculum mathematics requirements and expectations and how to provide access to the curriculum based on student characteristics and needs.

(3) Ability to assess, interpret data, and implement instructional practices to address calculations, reasoning, and problem-solving skills. Skills in this area include the ability to understand and use a range of specialized mathematics instructional strategies and research-based interventions that reflect best practice in mathematics instruction for students with disabilities.

(4) Ability to align the instructional practices and intervention with the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*] and state assessments.

(5) Knowledge of and ability to utilize current mathematics-related assistive and instructional technologies to promote learning and independence for students with disabilities in the general curriculum and the ability to evaluate the effectiveness of the use of the technologies.

(6) Ability to develop and use curriculum-based and standardized mathematics assessments to conduct ongoing evaluations of instructional materials and practices to determine effectiveness and assess student needs as they relate to the mathematics curriculum design and delivery.

(7) Ability to model and directly teach mathematics instructional strategies in a variety of settings, collaborate and co-teach with general educators to develop and

implement instructional practices that meet the needs of students with disabilities in the mathematics general curriculum, and monitor student progress.

[3.Completed a practicum of at least 45 instructional hours. This practicum shall include a minimum of 45 instructional hours of successful teaching experiences with students with disabilities accessing the general curriculum in a public or an accredited nonpublic school. In lieu of the practicum, one year of successful, full-time teaching experience with students with disabilities accessing the general curriculum in a public or an accredited nonpublic school may be accepted provided the teacher is assigned a mentor holding a valid license with an endorsement in special education.]

8VAC20-23-570. Special education – general curriculum middle grades 6-8 (add-on endorsement).

Endorsement requirements: The candidate must [have]:

1. ~~Hold an e~~E]arned [a] baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with an endorsement in middle education (i.e., middle education 6-8 English, middle education 6-8 history and social sciences, middle education 6-8 mathematics, or middle education-sciences).

2. [~~Have c~~C]ompleted 15 semester hours in the education of students with disabilities distributed in each of the following areas:

a. Foundations: 3 semester hours. Characteristics that include knowledge of the foundation for educating students with disabilities; historical, ethical, and legal aspects that include an understanding and application of the federal and state regulatory requirements; and expectations associated with identification, education, and evaluation of students with disabilities.

b. Individualized education program development and implementation: 3 semester hours. Knowledge of the eligibility process and legal and regulatory requirements of IEP development, including timelines, components, team composition, and roles and responsibilities. Skills in this area include the ability to apply knowledge of assessment and evaluation throughout the K-12 grade levels to construct, use, and interpret a variety of standardized and nonstandardized data collection techniques; to make decisions about student progress, instructional, program, goal development, accommodations, placement, and teaching methodology for students with disabilities who are accessing the general education curriculum and the standards of learning; and to demonstrate the use of assessment, evaluation, and other information to develop and implement individual educational planning and group instruction with students with disabilities who are accessing the general education curriculum across the K-12 grade levels.

c. Transitioning: 3 semester hours. Skills in this area include the ability to prepare students and work with families and community agencies to provide successful student transitions throughout the educational experience to include postsecondary education training, employment, and independent living that addresses an understanding of long-term planning, career development, life skills, community experiences and resources, self-advocacy, and self-determination, guardianship, and legal considerations.

d. Instructional strategies in reading and writing: 3 semester hours.

(1) An understanding and application of service delivery, curriculum, and instruction of students with disabilities in reading and writing.

(2) Knowledge of the general curriculum, English requirements and expectations, and how to provide access to the curriculum based on student characteristics and needs.

(3) Ability to assess, interpret data, and implement instructional practices to address the identified reading needs of the students. Skills in this area include the ability to identify, understand, and implement a range of specialized instructional strategies and research-based interventions that reflect best practice in reading and writing instruction for students with disabilities.

(4) Ability to align the instructional practices and intervention with the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*] and state assessments.

(5) Knowledge and ability to utilize current assistive and instructional reading and writing technologies to promote learning and independence for students with disabilities in the general curriculum and the ability to evaluate the effectiveness of the use of the technologies.

(6) Ability to develop and use curriculum-based and standardized reading and writing assessments to conduct ongoing evaluations of instructional materials and practices to determine effectiveness and assess student needs as it relates to the curriculum design and delivery.

(7) Ability to model and directly teach reading and writing instructional strategies in a variety of settings, collaborate and co-teach with general educators to develop and implement instructional practices that meet the needs of students with disabilities in the general curriculum, and monitor student progress.

e. Instructional strategies in mathematics: (3 semester hours).

(1) An understanding and application of service delivery, curriculum, and instruction of students with disabilities in mathematics.

(2) Knowledge of the general curriculum mathematics requirements and expectations and how to provide access to the curriculum based on student characteristics and needs.

(3) Ability to assess, interpret data, and implement instructional practices to address calculations, reasoning and problem-solving skills. Skills in this area include the ability to understand and use a range of specialized mathematics instructional strategies and research-based interventions that reflect best practice in mathematics instruction for students with disabilities.

(4) Ability to align the instructional practices and intervention with the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*] and state assessments.

(5) Knowledge of and ability to utilize current mathematics-related assistive and instructional technologies to promote learning and independence for students with disabilities in the general curriculum and the ability to evaluate the effectiveness of the use of the technologies.

(6) Ability to develop and use curriculum-based and standardized mathematics assessments to conduct ongoing evaluations of instructional materials and practices to determine effectiveness and assess student needs as they relate to the mathematics curriculum design and delivery.

(7) Ability to model and directly teach mathematics instructional strategies in a variety of settings, collaborate and co-teach with general educators to develop and implement instructional practices that meet the needs of students with disabilities in the mathematics general curriculum, and monitor student progress.

[3.Completed a practicum of at least 45 instructional hours. This practicum shall include a minimum of 45 instructional hours of successful teaching experiences with students with disabilities accessing the general curriculum in a public or an accredited nonpublic school. In lieu of the practicum, one year of successful, full-time teaching experience with students with disabilities accessing the general curriculum in a public or an accredited nonpublic school may be accepted provided the teacher is assigned a mentor holding a valid license with an endorsement in special education.]

8VAC20-23-580. Special education – general curriculum secondary grades 6-12 (add-on endorsement).

Endorsement requirements: The candidate must [have]:

1. ~~Hold an e~~E]arned [a] baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with an endorsement in English, history and social sciences, mathematics, biology, chemistry, Earth science, or physics.

2. [~~Have c~~C]ompleted 15 semester hours in the education of students with disabilities distributed in each of the following areas:

a. Foundations [of education and the teaching profession]: 3 semester hours. Characteristics that include knowledge of the foundation for educating students with disabilities; historical, ethical, and legal aspects that include an understanding and application of the federal and state regulatory requirements; and expectations associated with identification, education, and evaluation of students with disabilities.

b. Individualized education program development and implementation: 3 semester hours. Knowledge of the eligibility process and legal and regulatory requirements of IEP development, including timelines, components, team composition, and roles and

responsibilities. Skills in this area include the ability to apply knowledge of assessment and evaluation throughout the K-12 grade levels to construct, use, and interpret a variety of standardized and nonstandardized data collection techniques; to make decisions about student progress, instructional, program, goal development, accommodations, placement, and teaching methodology for students with disabilities who are accessing the general education curriculum and the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*]; and to demonstrate the use of assessment, evaluation, and other information to develop and implement individual educational planning and group instruction with students with disabilities who are accessing the general education curriculum across the K-12 grade levels.

c. Transitioning: 3 semester hours. Skills in this area include the ability to prepare students and work with families and community agencies to provide successful student transitions throughout the educational experience to include postsecondary education training, employment, and independent living that addresses an understanding of long-term planning, career development, life skills, community experiences and resources, self-advocacy, and self-determination, guardianship, and legal considerations.

d. Instructional strategies in reading and writing: 3 semester hours.

(1) An understanding and application of service delivery, curriculum, and instruction of students with disabilities in reading and writing.

(2) Knowledge of the general curriculum, English requirements and expectations, and how to provide access to the curriculum based on student characteristics and needs.

(3) Ability to assess, interpret data, and implement instructional practices to address the identified reading needs of the students. Skills in this area include the ability to identify, understand, and implement a range of specialized instructional strategies and research-based interventions that reflect best practice in reading and writing instruction for students with disabilities.

(4) Ability to align the instructional practices and intervention with the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*] and state assessments.

(5) Knowledge and ability to utilize current assistive and instructional reading and writing technologies to promote learning and independence for students with disabilities in the general curriculum and the ability to evaluate the effectiveness of the use of the technologies.

(6) Ability to develop and use curriculum-based and standardized reading and writing assessments to conduct ongoing evaluations of instructional materials and practices to determine effectiveness and assess student needs as they relate to the curriculum design and delivery.

(7) Ability to model and directly teach reading and writing instructional strategies in a variety of settings, collaborate and co-teach with general educators to develop and implement instructional practices that meet the needs of students with disabilities in the general curriculum, and monitor student progress.

e. Instructional strategies in mathematics: (3 semester hours).

(1) An understanding and application of service delivery, curriculum, and instruction of students with disabilities in mathematics.

(2) Knowledge of the general curriculum mathematics requirements and expectations and how to provide access to the curriculum based on student characteristics and needs.

(3) Ability to assess, interpret data, and implement instructional practices to address calculations, reasoning, and problem-solving skills. Skills in this area include the ability to understand and use a range of specialized mathematics instructional strategies and research-based interventions that reflect best practice in mathematics instruction for students with disabilities.

(4) Ability to align the instructional practices and intervention with the [~~Virginia Standards of Learning~~*Virginia Standards of Learning*] and state assessments.

(5) Knowledge of and ability to utilize current mathematics-related assistive and instructional technologies to promote learning and independence for students with disabilities in the general curriculum and the ability to evaluate the effectiveness of the use of the technologies.

(6) Ability to develop and use curriculum-based and standardized mathematics assessments to conduct ongoing evaluations of instructional materials and practices to determine effectiveness and assess student needs as they relate to the mathematics curriculum design and delivery.

(7) Ability to model and directly teach mathematics instructional strategies in a variety of settings, collaborate and co-teach with general educators to develop and implement instructional practices that meet the needs of students with disabilities in the mathematics general curriculum, and monitor student progress.

[3.Completed a practicum of at least 45 instructional hours. This practicum shall include a minimum of 45 instructional hours of successful teaching experiences with students

with disabilities accessing the general curriculum in a public or an accredited nonpublic school. In lieu of the practicum, one year of successful, full-time teaching experience with students with disabilities accessing the general curriculum in a public or an accredited nonpublic school may be accepted provided the teacher is assigned a mentor holding a valid license with an endorsement in special education.]

8VAC20-23-590. Speech communication (add-on endorsement).

Endorsement requirements. The candidate must have:

1. [~~An e~~E]arned [a] baccalaureate degree from a regionally accredited college or university and a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and

2. A minimum of 15 semester hours in speech communication.

8VAC20-23-600. Theatre arts preK-12.

A. Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in theatre arts; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in theatre arts or 33 semester hours distributed among the following areas:

a. Directing: 6 semester hours;

b. Technical theatre: 9 semester hours;

c. Cultural context and theatre history: 3 semester hours;

d. Performance: 6 semester hours; and

e. Dramatic literature: 9 semester hours.

B. Add-on endorsement requirements in theatre arts preK-12. The candidate must have:

1. [~~An eE~~]arned [a] baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with a teaching endorsement in a teaching area; and

2. Completed 15 semester hours distributed in the following areas:

a. Directing: 3 semester hours;

b. Technical theatre: 3 semester hours;

c. Cultural context and theatre history: 3 semester hours; and

d. Performance: 6 semester hours.

8VAC20-23-610. Visual arts preK-12.

Endorsement requirements. The candidate must have:

1. [Earned a baccalaureate degree from a regionally accredited college or university and ~~G~~g]raduated from an approved teacher preparation program in visual arts; or

2. Earned a baccalaureate degree from a regionally accredited college or university and completed a major in visual arts or 36 semester hours in art distributed in the following areas:

a. Two-dimensional media: 12 semester hours;

b. Three-dimensional media: 12 semester hours;

c. Cultural context and art history: 6 semester hours;

d. Evaluation and criticism and aesthetics: 3 semester hours; and

e. Related areas of the fine arts: 3 semester hours.

Part VI

Licensure Regulations Governing Support Personnel

8VAC20-23-620. Administration and supervision preK-12.

A. An endorsement in administration and supervision preK-12 consists of Level I, which is required to serve as a building-level administrator or central office instructional supervisor, and Level II, which is an optional endorsement to which an experienced building-level administrator may aspire. Individuals must meet the requirements for the administration and supervision preK-12 endorsement through one of the four options listed in this section. A school leader's assessment prescribed by the Virginia Board of Education must be met for all individuals who are seeking an initial endorsement authorizing them to serve as principals and assistant principals in the public schools. Individuals seeking an initial administration and supervision endorsement who are interested in serving as central office instructional personnel are not required to take and pass the school leaders assessment prescribed by the Virginia Board of Education.

B. Level I, Option I: Approved program route to Level I administration and supervision preK-12 endorsement. To become eligible for a Level I endorsement under this option, the candidate must have:

1. Earned a master's degree from a regionally accredited college or university;

2. Completed three years of successful, full-time experience in a public school or accredited nonpublic school in an instructional personnel position that requires licensure in Virginia;

3. Completed an approved program in administration and supervision from a regionally accredited college or university;

4. Completed a deliberately structured and supervised internship that is focused on student academic progress for all students and that:

a. Provides significant experiences within a school environment for candidates to synthesize and apply content knowledge and develop professional skills through school-based leadership experiences;

b. Shall occur in a public or accredited nonpublic school;

c. Provides exposure to five different multiple sites (i.e., elementary, middle high, central office, agency) with diverse student populations; and

d. Documents a minimum of 320 clock hours, of which 120 clock hours are embedded as experiential field-based opportunities experienced during coursework; and

5. Satisfied the requirements for the school leaders licensure assessment prescribed by the Virginia Board of Education. Individuals seeking an initial administration and supervision endorsement who are interested in serving as central office instructional personnel are not required to take and pass the school leaders assessment prescribed by the Virginia Board of Education.

C. Level I, Option II: Alternate route to Level I administration and supervision preK-12 endorsement restricted to the Virginia school division in which the superintendent submitted the recommendation for endorsement. This endorsement is valid only in the designated Virginia school division and would not be portable or reciprocal. In order to be eligible for Level I endorsement under this option, the candidate must have:

1. Earned a master's degree from a regionally accredited college or university;

2. Completed graduate coursework in school law, evaluation of instruction, and other areas of study as required by an employing Virginia school superintendent. The

graduate coursework must be taken from a regionally accredited college or university that has a state-approved administration and supervision program;

3. Completed three years of successful, full-time experience in a public school or accredited nonpublic school in an instructional personnel position that requires licensure in Virginia;

4. Satisfied the requirements for the school leaders licensure assessment specified by the Virginia Board of Education; and

5. Been recommended by the superintendent in the employing Virginia school division.

D. Level I, Option III: Alternate route to Level I administration and supervision preK-12 endorsement. In order to be eligible for Level I endorsement under this option, the candidate must have:

1. Earned a master's degree from a regionally accredited college or university;

2. Completed graduate coursework in school law, evaluation of instructional personnel, special education, school finance, educational leadership, and other areas of study as required by an employing Virginia school superintendent, and the graduate coursework must be taken from a regionally accredited college or university that has a state-approved administration and supervision program, or the candidate must have completed school law, school finance, and a research-based program approved by the Virginia Department of Education that includes organizational leadership, instructional leadership, instructional practices in content areas, data utilization, evaluation and instructional coaching, and creating positive school cultures;

3. Completed three years of successful, full-time experience in a public school or accredited nonpublic school in an instructional personnel position that requires licensure in Virginia;

4. Satisfied the requirements for the school leaders licensure assessment specified by the Virginia Board of Education; and

5. Been recommended by the superintendent in the employing Virginia school division.

E. Level I, Option IV: Out-of-state administration and supervision endorsement. Virginia does not issue a stand-alone license in administration and supervision. The endorsement is added to a license. The candidate must have:

1. Earned a master's degree from a regionally accredited college or university;

2. Completed three years of successful, full-time experience in a public school or accredited nonpublic school in an instructional personnel position;

3. Satisfied the requirements for the school leaders licensure assessment specified by the Virginia Board of Education; and

4. A current, valid out-of-state license, which is full credential, with an endorsement in administration and supervision or completed an approved program in administration and supervision from a regionally accredited college or university leading to an endorsement as a building-level administrator.

F. Level II: Principal of Distinction endorsement in administration and supervision preK-12. A building-level administrator may seek the Principal of Distinction, Level II endorsement in administration and supervision preK-12 after successfully serving as a building-level administrator for at least five years in a public school or an accredited nonpublic school and successfully completing a formal induction program as a principal or assistant principal. In order to earn the Principal of Distinction, Level II endorsement, the candidate must meet two or more of the following criteria as specified by the Virginia Board of Education and documented in a Virginia Department of Education approved format and be recommended by the employing Virginia school division superintendent:

1. Evidence of improved student achievement;

2. Evidence of effective instructional leadership;

3. Evidence of positive effect on school climate or culture;

4. Earned doctorate in educational leadership or evidence of formal professional development in the areas of school law, school finance, supervision, human resource management, and instructional leadership; or

5. Evidence of a completion of a high-quality professional development project designed by the division superintendent.

8VAC20-23-630. Division Superintendent License.

An individual may be a candidate for the list of eligible division superintendents and the renewable Division Superintendent License through the completion of the requirements in one of the following four options:

1. Option I. The individual must:

a. Hold an earned doctorate degree in educational administration or educational leadership from a regionally accredited college or university; and

b. Have completed five years of educational experience in a public or an accredited nonpublic school, two of which must be successful, full-time teaching experience at the preK-12 level and two of which must be in administration and supervision at the preK-12 level.

2. Option II. The individual must:

a. Hold an earned master's degree from a regionally accredited college or university and completed 30 graduate semester hours beyond the conferral date of the master's degree; and

b. Have completed requirements for administration and supervision preK-12 endorsement that includes the demonstration of competencies in the following areas:

(1) Knowledge, understanding, and application of planning, assessment, and instructional leadership that builds collective professional capacity, including;

(a) Principles of student motivation, growth, and development as a foundation for age- appropriate and grade-appropriate curriculum, instruction, and assessment;

(b) Collaborative leadership in gathering and analyzing data to identify needs to develop and implement a school improvement plan that results in increased student learning;

(c) Planning, implementation, and refinement of standards-based curriculum aligned with instruction and assessment;

(d) Collaborative planning and implementation of a variety of assessment techniques, including examination of student work that yields individual, class, grade level, and school level data as a foundation for identifying existing competencies and targeting areas in need of further attention;

(e) Incorporation of differentiated and effective instruction that responds to individual learner needs including appropriate response to cultural, ethnic, and linguistic diversity;

(f) Knowledge, understanding, and application of the federal and state regulatory requirements and expectations associated with identification, education, and evaluation of students with disabilities;

(g) Collaboratively working with parents and school personnel to ensure that students with disabilities are included as a valued part of the school community, and that they receive effective and appropriately intensive instruction to assist them in

meeting the standards set for all students as well as individual goals outlined in their individualized education programs;

(h) Integration of technology in curriculum and instruction to enhance learner understanding;

(i) Identification, analysis, and resolution of problems using effective problem-solving techniques; and

(j) Development, articulation, implementation, and stewardship of a vision of excellence linked to mission and core beliefs that promote continuous improvement consistent with the goals of the school division.

(2) Knowledge, understanding, and application of leadership and organizations, including;

(a) The change process of systems, organizations, and individuals, using appropriate and effective adult learning models;

(b) Aligning organizational practice, division mission, and core beliefs for developing and implementing strategic plans;

(c) Information sources and processing, including data collection and data analysis strategies;

(d) Using data as a part of ongoing program evaluation to inform and lead change;

(e) Developing a change management strategy for improved student outcomes;

(f) Developing distributed leadership strategies to create personalized learning environments for diverse schools; and

(g) Effective two-way communication skills including consensus building, negotiation, and mediation skills.

(3) Knowledge, understanding, and application of management and leadership skills that achieve effective and efficient organizational operations and sustain an instructional program conducive to student academic progress, including;

(a) Alignment of curriculum and instruction and assessment of the educational program to achieve high academic success at the school and division or district level;

(b) Principles and issues of supervising and leading others to ensure a working and learning climate that is safe, secure, and respectful of a diverse school community;

(c) Management decisions that ensure successful teaching and learning including, human resources management and development, theories of motivation, change in school culture, innovation and creativity, conflict resolution, adult learning, and professional development models;

(d) Knowledge, understanding, and application of Virginia's Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers and Virginia's Guidelines for Uniform Performance Standards and Evaluation Criteria for Principals;

(e) Principles and issues related to fiscal operations of school management;

(f) Principles and issues related to school facilities and use of space and time for supporting high-quality school instruction and student learning;

(g) Legal issues impacting school operations and management;

(h) Technologies that support management functions; and

(i) Application of data-driven decision making to initiate and continue improvement in school and classroom practices and student achievement.

(4) Knowledge, understanding, and application of the conditions and dynamics impacting a diverse school community, including:

(a) Emerging issues and trends within school and community relations;

(b) Working collaboratively with staff, families, and community members to secure resources and to support the success of a diverse population;

(c) Developing appropriate public relations and public engagement strategies and processes for building and sustaining positive relationships with families, caregivers, and community partners; and

(d) Integration of technology to support communication efforts.

(5) Knowledge, understanding, and application of the purpose of education and the role of professionalism in advancing educational goals, including:

(a) Philosophy of education that reflects commitment to principles of honesty, fairness, caring, and equity in day-to-day professional behavior;

(b) Integration of high-quality, content-rich, job-embedded professional learning that respects the contribution of all faculty and staff members in building a diverse professional learning community;

(c) Reflective understanding of moral and legal consequences of decision making in the school setting;

(d) Intentional and purposeful effort to model professional, moral, and ethical standards as well as personal integrity in all interactions; and

(e) Intentional and purposeful effort to model continuous professional learning and to work collegially and collaboratively with all members of the school community to support the school's goals and enhance its collective capacity.

(6) Knowledge, understanding, and application of leadership theories and influences that impact schools, including:

(a) Concepts of leadership including systems theory, change theory, learning organizations, and current leadership theory;

(b) Identify and respond to internal and external forces and influences on a school;

(c) Identify and apply the processes of educational policy development at the state, local, and school level; and

(d) Identify and demonstrate ways to influence educational policy development at the state, local, and school level.

3. Option III. The individual must:

a. Hold an earned master's degree from a regionally accredited college or university;

b. Hold a current, valid out-of-state license with an endorsement as a division or district superintendent; and

c. Have completed five years of educational experience in a public or an accredited nonpublic school, two of which must be successful, full-time teaching experience at the preK-12 level and two of which must be in successful administration and supervision.

4. Option IV. The individual must:

a. Hold an earned master's degree or its equivalent from a regionally accredited college or university;

b. Have [~~held~~a minimum of three years of successful, full-time experience in] a senior leadership position[,] such as chief executive officer or senior military officer; and

c. Be recommended by a school board interested in employing the individual as superintendent.

8VAC20-23-640. Mathematics specialist for elementary education.

Endorsement requirements. The candidate must have:

[~~1. Earned a baccalaureate degree from a regionally accredited college or university and an endorsement in a teaching area;~~]

[1~~2~~]. Completed at least three years of successful, full-time teaching experience in a public or accredited nonpublic school in which the teaching of mathematics was an important responsibility; and

[2~~3~~]. Either:

a. Graduated from a[~~n~~graduate-level] approved mathematics specialist for elementary preparation program - master's [degree from a regionally accredited college or university required~~level~~]; or

b. Completed a [~~master's~~graduate-]level program in mathematics, mathematics education, or related education field [-master's degree from a regionally accredited college or university required-] with at least 21 semester hours of [~~undergraduate or~~] graduate mathematics coursework distributed in the following areas; (i) number and operations; (ii) rational numbers; (iii) geometry and measurement; (iv) probability and statistics; (v) algebra and functions; and (vi) at least nine semester hours of graduate coursework pertaining to mathematics education in mathematics instructional leadership, evaluation of mathematics curriculum and instruction, mathematical learning theory, and student assessment for mathematics.

8VAC20-23-650. Mathematics specialist for [elementary and] middle education.

Endorsement requirements. The candidate must have:

[~~1. Earned a baccalaureate degree from a regionally accredited college or university and an endorsement in a teaching area;~~]

[1~~2~~]. Completed at least three years of successful, full-time teaching experience in a public or accredited nonpublic school in which the teaching of mathematics was an important responsibility;

[2~~3~~]. [Hold ~~the secondary~~a M~~m~~athematics – ~~A~~algebra I (add-on) or Mathematics (secondary)] teaching endorsement (6-12); and

[3~~4~~]. Either:

a. Graduated from a[~~n~~graduate-level] approved mathematics specialist for [elementary and] middle education preparation program [~~—~~] master's [degree from a regionally accredited college or university required~~level~~]; or

b. Completed a [graduate- ~~master's~~]level program in mathematics, mathematics education, or related education field [– master's degree from a regionally accredited college or university required –] with at least 21semester hours of [~~undergraduate or~~] graduate mathematics coursework distributed in the following areas; (i) number and operations; (ii) rational numbers; (iii) geometry and measurement; (iv) probability and statistics; (v) algebra and functions; and (vi) at least nine semester hours of graduate coursework pertaining to mathematics education in mathematics instructional leadership, evaluation of mathematics curriculum and instruction, mathematical learning theory, and student assessment for mathematics.

8VAC20-23-660. Reading specialist.

Endorsement requirements. The candidate must have:

1. Completed a graduate-level reading specialist state-approved preparation program - master's degree [from a regionally accredited college or university] required - that

includes course experiences of at least 30 semester hours of graduate coursework in the competencies for the endorsement, as well as a practicum experience in the diagnosis and remediation of reading difficulties.

2. Satisfied the requirements for the reading specialist assessment specified by the Virginia Board of Education.

3. At least three years of successful classroom teaching experience in which the teaching of reading was an important responsibility.

8VAC20-23-670. School counselor preK-12.

Endorsement requirements.

1. Option I. The candidate must have:

a. Earned a master's degree from a regionally accredited college or university and completed an approved school counselor preparation program that shall include at least 100 clock hours of internship and practicum experiences in the preK-6 setting and 100 clock hours of internship and practicum experiences in the grades 7-12 setting; and

b. Two years of successful, full-time teaching experience or two years of successful, full-time experience in school counseling in a public or an accredited nonpublic school. Two years of successful, full-time experience in school counseling in a public or an accredited nonpublic school under a [nonrenewable] Provisional License may be accepted to meet this requirement.

2. Option II. The candidate must have:

a. Earned a master's degree from a regionally accredited college or university and completed an approved school counselor preparation program that shall include at

least 100 clock hours of internship and practicum experiences in the preK-6 setting and 100 clock hours of internship and practicum experiences in the grades 7-12 setting; and

b. Two years of successful, full-time teaching experience or two years of successful, full-time experience in school counseling in a public or an accredited nonpublic school. Two years of successful, full-time experience in school counseling in a public or an accredited nonpublic school under a nonrenewable Provisional License may be accepted to meet this requirement.

8VAC20-23-680. School manager license.

A. The school manager license is intended to provide for the differentiation of administrative responsibilities in a school setting. A school manager is licensed to administer noninstructional responsibilities in an educational setting. For example, a school manager is restricted from evaluating teachers, supervising instruction, developing and evaluating curriculum, and serving as a school's student disciplinarian.

B. To earn a school manager license, the candidate must:

1. Have earned a baccalaureate degree from a regionally accredited college or university;

2. Have three years successful, full-time managerial experience; and

3. Be recommended for the license by a Virginia school division superintendent.

8VAC20-23-690. School psychology.

Endorsement requirements:

1. Option I. The candidate must:

a. Complete an approved program in school psychology;

b. Earn a baccalaureate degree from a regionally accredited college or university and complete 60 graduate-level hours, 54 of which are academic coursework, exclusive of field-based experiences, that culminate in at least a master's degree; and

c. Complete an internship that is documented by the degree-granting institution. The internship experience shall occur on a full-time basis over a period of one year or on a half-time basis over a period of two consecutive years. The internship shall occur under conditions of appropriate supervision, that is, the school-based supervisor shall be licensed as either a school or clinical psychologist. The internship shall include experiences at multiple age levels, at least one half of which shall be in an accredited school setting.

2. Option II. The candidate must hold a currently valid certificate issued by the National School Psychology Certification Board.

8VAC20-23-700. School social worker.

Endorsement requirements. The candidate must have:

1. Earned a master's of social work degree from a regionally accredited college or university [~~school of social work~~] with a minimum of 60 graduate-level semester hours; [or earned an advanced standing master's of social work degree from a regionally accredited college or university with a minimum of 30 graduate-level semester hours;]

2. A minimum of six graduate semester hours in education to include six semester hours from two of the following courses:

a. [Foundations of education and t~~T~~]he teaching profession (3 semester hours);

b. Characteristics of special education (3 semester hours);

c. Human development and learning (3 semester hours); or

d. Classroom and behavior management (3 semester hours).

3. Completed a supervised practicum or field experience of a minimum of 400 clock hours in a public or an accredited nonpublic school discharging the duties of a school social worker. One year of successful, full-time experience as a school social worker in a public or an accredited nonpublic school may be accepted in lieu of the school social work practicum.

8VAC20-23-710. Vocational evaluator.

Endorsement requirements:

1. Option I. The candidate must be certified as a vocational evaluation specialist by holding a professional vocational evaluator (PVE) credential or a certified vocational evaluator (CVE) specialist credential, meeting all standards and criteria of the Commission on Certification of Work Adjustment and Vocational Evaluation Specialists (CCWAVES).

2. Option II. The candidate must have earned a master's degree in vocational evaluation, career and technical education, special education, or rehabilitation counseling [from a regionally accredited college or university] and completed 15 graduate semester hours distributed in the following areas:

a. Tests and measurements: 3 semester hours;

b. Medical and educational aspects of disability: 3 semester hours;

c. Occupational information and job analysis: 3 semester hours;

d. Purposes and practices of vocational evaluation: 3 semester hours; and

e. Career, life planning, and transition services: 3 semester hours.

Part VII

Revocation, Cancellation, Suspension, Denial, and Reinstatement of [~~Teaching~~] Licenses

8VAC20-23-720. Revocation.

A. A license issued by the Virginia Board of Education may be revoked for the following reasons:

1. Obtaining or attempting to obtain [~~such~~a] license by fraudulent means or through misrepresentation of material facts;

2. Falsification of school records, documents, statistics, or reports;

3. Conviction of any felony;

4. Conviction of any misdemeanor involving moral turpitude;

5. Conviction of any misdemeanor involving a [~~minor~~]child [(minor)] or drugs[~~,~~] [(]not[~~ including~~] alcohol[)]];

6. Conduct with direct and detrimental effect on the health, welfare, discipline, or morale of students;

7. Misapplication of or failure to account for school funds or other school properties with which the licensee has been entrusted;

8. Acts related to secure mandatory tests as specified in subsection A of § 22.1-292.1 of the Code of Virginia;

9. Knowingly and willfully with the intent to compromise the outcome of an athletic competition procure, sell, or administer anabolic steroids or cause such drugs to be procured, sold, or administered to a student who is a member of a school athletic team, or fail to report the use of such drugs by a student to the school principal and division superintendent as required by clause (iii) of subsection A of § 22.1-279.3:1 of the Code

of Virginia. Any person whose license is suspended or revoked by the board pursuant to this section shall be ineligible for three school years for employment in the public schools of the Commonwealth;

10. Revocation, suspension, surrender, cancellation, invalidation, or denial of, or other adverse action against, a teaching, administrator, pupil personnel services, or other education-related certificate or license by another state, territory, or country; [or denial of an application for any such certificate or license;]

11. Founded case of child abuse or neglect[~~, after all appeal rights have been exhausted~~];

12. Notification of dismissal or resignation pursuant to subsection F of §22.1-313 of the Code of Virginia; or

13. Other good and just cause in the best interest of the public schools of the Commonwealth of Virginia.

B. Procedures.

1. A complaint may be filed by anyone, but it shall be the duty of a division superintendent, principal, or other responsible school employee to file a complaint in any case in which he has knowledge that a holder of a license is guilty of any offense set forth in subsection A of this section. The person making the complaint shall submit the complaint in writing to the appropriate division superintendent. [If the subject of the complaint is the division superintendent, the person making the complaint may submit the complaint to the chair of the local school board.]

2. Upon receipt of the complaint against the holder of a license, a division superintendent or his duly authorized representative shall investigate the complaint. If, on the basis of such investigation, the division superintendent finds the complaint to be

without merit, he shall so notify the complaining party or parties in writing and then close his file on the matter. This action shall be final unless the local school board, on its own motion, votes to proceed to a hearing on the complaint.

C. Petition for revocation. Should the division superintendent or local school board conclude that there is reasonable cause to believe that a [~~complaint against the holder of a license is well founded~~basis for revocation of the license exists], the license holder shall be notified of the complaint by a written petition for revocation of a license signed by the division superintendent. A copy of such petition shall be sent by certified mail, return receipt requested, to the license holder's last known address.

D. Form of petition. The petition for the revocation of a license shall set forth:

1. The name and last known address of the person against whom the petition is being filed;

2. The type of license and the license number held by the person against whom the petition is being filed;

3. The offenses alleged and the specific actions that comprise the alleged offenses;

4. A statement of rights of the person [~~charged under this chapter~~against whom the petition is being filed]. The statement of rights shall [notify the person that any adverse action against a license, including revocation, will be reported to division superintendents in Virginia and, through a national clearinghouse, to chief state school officers of the other states and territories of the United States. The statement also shall] include notification to the person of the right to cancel the license if he chooses not to contest the allegations in the petition. The statement must notify the individual that he shall receive a notice of cancellation that will include the statement: "The license holder voluntarily returned the license in response to a petition for revocation." The individual

also shall be notified that the cancellation of the license will be reported to division superintendents in Virginia and[, through a national clearinghouse,] to chief state school officers of the other states and territories of the United States; and

5. Any other pertinent information.

E. Filing of petition. The original petition shall be entered in the files of the local school board where the license holder is or was last employed.

F. Response to petition. The license holder shall present his written answer to the petition, if any, within 14 days of delivery or attempted delivery of the petition as certified by the United States Postal Service.

1. If the license holder does not wish to contest the allegations in the petition, he may cancel the license by returning the license to the division superintendent with a written, signed statement requesting cancellation in response to a petition for revocation. The division superintendent shall forward the request for cancellation along with the petition for revocation to the Superintendent of Public Instruction within 14 days of receipt. The Superintendent of Public Instruction shall cancel the license and send a notice of cancellation to the person by certified mail within 14 days of receipt of the request for cancellation.

2. If the license holder files a written answer admitting or denying the allegations in the petition or fails to file a written answer within 14 days of delivery or attempted delivery of the petition[,] as certified by the United States Postal Service, the local school board shall promptly proceed to a hearing. The local school board shall provide a hearing at the time and place of its regular meeting or at such other reasonable time and place it may specify. The license holder or his representative, if any, shall be given at least 14 days' notice of the hearing.

3. At the hearing, the local school board shall receive the recommendation of the division superintendent and then either deny the petition or recommend license revocation or suspension. A decision to deny the petition shall be final, except as specified in subsection G of this section, and the investigative file on the petition shall be closed and maintained as a separate file. Any record or material relating to the allegations in the petition shall be placed in the investigative file. Should the local school board recommend the revocation or suspension of a license, the division superintendent shall forward the recommendation and the investigative file to the Superintendent of Public Instruction within 14 days.

G. Revocation on motion of the Virginia Board of Education. The Virginia Board of Education reserves the right to act directly to revoke a license when the Virginia Board of Education has reasonable cause to believe that subsection A of this section is applicable. The Superintendent of Public Instruction may send a petition for revocation to the license holder as provided by subsection D of this section. The license holder shall have the opportunity to respond to the petition or request cancellation of the license within 14 days of delivery or attempted delivery of the petition, as certified by the United States Postal Service.

1. If the license holder files a written answer admitting the allegations in the petition or fails to file a written answer within 14 days of delivery or attempted delivery of the petition[,] as certified by the United States Postal Service, the petition shall be forwarded to the Virginia Board of Education for action. No revocation will be ordered without the involved license holder being given the opportunity to appear at a hearing specified in 8VAC20-23-780 C.

2. If the license holder timely files his written answer denying the allegations in the petition, the Superintendent of Public Instruction shall schedule a hearing with the investigative panel provided in 8VAC20-23-780 A. The license holder or his

representative, if any, shall be given at least 14 days' notice of the hearing. The investigative panel shall take action on the petition as specified in 8VAC20-23-780 A. No revocation will be ordered without the involved license holder being given the opportunity to appear at a hearing specified in 8VAC20-23-780 C.

H. Reinstatement of license. A license that has been revoked may be reinstated by the Virginia Board of Education after five years if the board is satisfied that reinstatement is in the best interest of the public schools of the Commonwealth of Virginia. The individual seeking reinstatement must submit a written request and completed application to the board. [~~The request for reinstatement will be reviewed by the Superintendent's Investigative Panel pursuant to 8VAC20-23-780.~~]Notification to all appropriate parties will be communicated in writing by the Virginia Department of Education.

8VAC20-23-730. Cancellation.

A. A license may be canceled by the voluntary return of the license by the license holder [in response to a petition for revocation or suspension or pursuant to a court order]. Reasons for cancellation are the same as those listed under 8VAC20-23-720 A.

B. Procedures. The individual may voluntarily return the license to the division superintendent or the Superintendent of Public Instruction with a written, signed statement requesting cancellation. The individual shall acknowledge in the request that he understands that the notice of cancellation will include the statement: "The license holder voluntarily returned his teaching license and requested cancellation. Reasons for cancellation are the same as those for revocation." [~~However, if the request for cancellation is in response to a petition for revocation, t~~T]he individual [also] shall acknowledge that he understands that the notice of cancellation will include the statement: "The license holder voluntarily returned the license in response to a petition for revocation [or suspension or a court order]." The individual also shall acknowledge that he understands that the cancellation of the license will be reported to division

superintendents in Virginia and to chief state school officers of the other states and territories of the United States. The division superintendent shall forward any request for cancellation and, if applicable, the petition for revocation [or suspension] to the Superintendent of Public Instruction within 14 days of receipt. The Superintendent of Public Instruction shall cancel the license and send the person a notice of cancellation by certified mail within 14 days of receipt of the request for cancellation.

C. Reinstatement of license. A license that has been canceled may be reinstated by the Virginia Board of Education if the board is satisfied that reinstatement is in the best interest of the public schools of the Commonwealth of Virginia. The individual seeking reinstatement must submit a written request and completed application to the board. [~~The request for reinstatement will be reviewed by the Superintendent's Investigative Panel pursuant to 8VAC20-23-780 A.~~]Notification to all appropriate parties will be communicated in writing by the Virginia Department of Education.

8VAC20-23-740. Suspension.

A. A license may be suspended for the following reasons:

1. Physical, mental, or emotional incapacity as shown by a competent medical authority;

2. Incompetence or neglect of duty;

3. Failure or refusal to comply with school laws and regulations, including willful violation of contractual obligations;

4. Acts related to secure mandatory tests as specified in subsection A of §22.1-292.1 of the Code of Virginia;

5. Knowingly and willfully with the intent to compromise the outcome of an athletic competition procure, sell, or administer anabolic steroids or cause such drugs to be procured, sold, or administered to a student who is a member of a school athletic team,

or fail to report the use of such drugs by a student to the school principal and division superintendent as required by clause (iii) of subsection A of §22.1-279.3:1 of the Code of Virginia. Any person whose license is suspended or revoked by the board pursuant to this section shall be ineligible for three school years for employment in the public schools of the Commonwealth; or

6. Other good and just cause in the best interest of the public schools of the Commonwealth of Virginia.

B. Procedures.

1. A complaint may be filed by anyone, but it shall be the duty of a division superintendent, principal, or other responsible school employee to file a complaint in any case in which he has knowledge that the license holder has committed any offense set forth in subsection A of this section. The person making the complaint shall submit it in writing to the appropriate division superintendent. [If the subject of the complaint is the division superintendent, the person making the complaint may submit the complaint to the chair of the local school board.]

2. Upon receipt of the complaint against the holder of a license, a division superintendent or his duly authorized representative shall investigate the complaint. If, on the basis of such investigation, the division superintendent finds the complaint to be without merit, he shall so notify the complaining party or parties in writing and then close his file on the matter. This action shall be final unless the local school board on its own motion votes to proceed to a hearing on the complaint.

C. Petition for suspension. Should the division superintendent or local school board conclude that there is reasonable cause to believe that a [~~complaint against the holder of a license is well-founded~~basis for suspension of the license exists], the license holder shall be

notified of the complaint by a written petition for suspension of a license signed by the division superintendent. A copy of such petition shall be sent by certified mail, return receipt requested, to the license holder's last known address.

D. Form of petition. The petition for the suspension of a license shall set forth:

1. The name and last known address of the person against whom the petition is being filed;

2. The type of license and the license number held by the person against whom the petition is being filed;

3. The offenses alleged and the specific actions that comprise the alleged offenses;

4. A statement of the rights of the person against whom the petition is being filed. The statement of rights shall notify the person [that the license may be suspended for up to five years with the period of suspension starting either as of the date of the board's order or retroactively from the date of the offense giving rise to the suspension, depending on the terms of the board's order and that any adverse action against a license, including suspension, will be reported to division superintendents in Virginia and, through a national clearinghouse, to chief state school officers of the other states and territories of the United States. The statement also shall notify the person] of the right to cancel the license if he chooses not to contest the allegations in the petition [and notify the individual that if he cancels the license,] he shall receive a notice of cancellation that will include the statement: "The license holder voluntarily returned the license in response to a petition for suspension." The individual also shall be notified that the cancellation [~~and period of suspension~~] will be reported to division superintendents in Virginia and[, through a national clearinghouse,] to chief state school officers of the other states and territories of the United States; and

5. Any other pertinent information.

E. Filing of petition. The original petition shall be entered in the files of the local school board where the license holder is or was last employed.

F. Response to petition. The license holder shall present his written answer to the petition, if any, within 14 days of delivery or attempted delivery of the petition, as certified by the United States Postal Service.

1. If the license holder does not wish to contest the allegations in the petition, he may cancel the license by returning the license to the division superintendent with a written and signed statement requesting cancellation. The division superintendent shall forward the request for cancellation along with the petition for suspension to the Superintendent of Public Instruction within 14 days of receipt. The Superintendent of Public Instruction shall cancel the license and send the person a notice of cancellation by certified mail within 14 days of receipt of the request for cancellation.

2. If the license holder files a written answer admitting or denying the allegations in the petition or fails to file a written answer within 14 days of delivery or attempted delivery of the petition[,] as certified by the United States Postal Service, the local school board shall promptly proceed to a hearing. The local school board shall provide a hearing at the time and place of its regular meeting or at such other reasonable time and place it may specify. The license holder or his representative, if any, shall be given at least 14 days' notice of the hearing.

3. At its hearing, the local school board shall receive the recommendation of the division superintendent and then either deny the petition or recommend suspension. A decision to deny the petition shall be final, except as specified in subsection G of this section, and the investigative file on the petition shall be closed and maintained as a separate

file. Any record or material relating to the allegations in the petition shall be placed in the investigative file. Should the local school board recommend the suspension of a license, the division superintendent shall forward the recommendation and the investigative file to the Superintendent of Public Instruction within 14 days.

G. Suspension on motion of the Virginia Board of Education. The Virginia Board of Education reserves the right to act directly to suspend a license when the Virginia Board of Education has reasonable cause to believe that subsection A of this section is applicable. The Superintendent of Public Instruction may send a petition for suspension to the license holder as specified in subsection D of this section. The license holder shall have the opportunity to respond to the petition or request cancellation of the license within 14 days of delivery or attempted delivery of the petition, as certified by the United States Postal Service.

1. If the license holder files a written answer admitting the allegations in the petition or fails to file a written answer within 14 days of delivery or attempted delivery of the petition[,] as certified by the United States Postal Service, the petition shall be forwarded to the Virginia Board of Education for action. No suspension will be ordered without the involved license holder being given the opportunity to appear at a hearing specified in 8VAC20-23-780 C.

2. If the license holder timely files his written answer denying the allegations in the petition, the Superintendent of Public Instruction shall schedule a hearing with the investigative panel provided in 8VAC20-23-780 A. The license holder or his representative, if any, shall be given at least 14 days' notice of the hearing. The investigative panel shall take action on the petition as specified in 8VAC20-23-780 A. No suspension will be ordered without the involved license holder being given the opportunity to appear at a hearing specified in 8VAC20-23-780 C.

H. Reinstatement of license. A license may be suspended for a period of time not to exceed five years. The license may be reinstated by the Superintendent of Public Instruction, upon written request and application, with verification that all [applicable] requirements for license renewal have been satisfied Notification to all appropriate parties will be communicated in writing by the Virginia Department of Education.

8VAC20-23-750. Denial.

[A.] A license may be denied for the following reasons:

1. Attempting to obtain [~~sucha~~] license by fraudulent means or through misrepresentation of material facts;

2. Falsification of records or documents;

3. Conviction of any felony;

4. Conviction of any misdemeanor involving moral turpitude;

5. Conviction of any misdemeanor involving a [~~minor~~] child [(minor)]or drugs[~~,~~] [(]not [~~including~~]alcohol[)];

6. Conduct with [~~a~~] direct and detrimental effect on the health, welfare, discipline, or morale of students;

7. Revocation, suspension, surrender, cancellation, invalidation, or denial of, or other adverse action against, a teaching, administrator, pupil personnel services, or other education-related certificate or license by another state, territory, or country; [or denial of an application for any such certificate or license;]

8. Founded case of child abuse or neglect[~~, after all appeal rights have been exhausted~~]; or

9. Other good and just cause in the best interest of the public schools of the Commonwealth of Virginia.

[B. Any denial of a license for reasons set forth in 8VAC20-23-750 A shall be reported to division superintendents in Virginia and, through a national clearinghouse, to chief state school officers of the other states and territories of the United States.]

8VAC20-23-760. Expired license[~~s~~].

[~~A. The holder of a license that has expired must apply for a license according to the procedures set forth in 8VAC20-23-110 or 8 VAC20-23-40. Such application may be denied renewal by the Superintendent of Public Instruction for any of the reasons specified in 8VAC20-23-750 A. No such denial will be ordered unless the license holder is given the opportunity for the hearing specified in 8VAC20-23-780 C.~~

~~B. A.~~Action against a] license issued by the Virginia Board of Education may be [~~revoked or suspended~~taken] for any of the reasons listed in 8VAC20-23-720 A or 8VAC20-23-740 A, even if the license is expired, as long as the basis for action occurred prior to the issuance of the license or while the license was active.

8VAC20-23-770. Right to counsel and transcript.

A license holder or applicant shall have the right, at his own expense, to be represented by an attorney or other representative at any local school board hearing provided for in 8VAC20-23-720 F 2 or 8VAC20-23-740 F 2, investigative panel hearing provided for in 8VAC20-23-780 A, or proceedings before the Virginia Board of Education, as specified in 8VAC20-23-780 C. The hearing before the local school board provided for in 8VAC20-23-720 F 2 or 8VAC20-23-740 F 2 and the investigative panel hearing provided for in 8VAC20-23-780 A shall be recorded, and[,] upon written request[,] the license holder or applicant shall be provided a transcript of the hearing at his own expense. Any such hearing before

the Virginia Board of Education shall be recorded, and[,] upon written request[,] the license holder or applicant shall be provided a transcript of the hearing at no charge.

8VAC20-23-780. Action by the Superintendent of Public Instruction and the Virginia Board of Education.

A. Upon receipt of a petition, the Superintendent of Public Instruction will ensure that an investigative panel at the state level reviews the petition. The panel shall consist of three to five members selected by the Superintendent of Public Instruction. The applicant or license holder shall be given at least 14 days' notice of the date, time, and location of the investigative panel hearing when his case will be considered. The Virginia Department of Education shall ensure that the applicant or license holder receives all documentation that will be used during the investigative panel hearing prior to the hearing. Representatives of the local school division and the applicant or license holder are entitled to be present with counsel and witnesses if so desired. The investigative panel hearing shall be recorded. The recommendation of the investigative panel is made to the Superintendent of Public Instruction who will forward his recommendation and the documentation used during the investigative panel hearing to the Virginia Board of Education or its duly designated committee at one of its scheduled meetings. The applicant or license holder shall be given at least 14 days' notice of the Virginia Board of Education meeting when his case will be considered. Following the investigative panel hearing, the Virginia Department of Education shall forward the recommendation of the investigative panel to the applicant or license holder as soon as practicable, but no later than 14 days prior to the scheduled Virginia Board of Education meeting when his case will be considered.

B. The Superintendent of Public Instruction is authorized to approve the issuance of licenses for individuals who have a misdemeanor conviction[~~s~~] related to drugs, not including alcohol, based on a review of the cases. No individual [~~would~~will] be denied a license without a hearing of the Virginia Board of Education as required in this section.

C. [The applicant or license holder and representatives of the local school division are entitled to be present with counsel and witnesses, if so desired, at the hearing of the Virginia Board of Education.] The Virginia Board of Education, or its duly designated committee, shall consider the recommendation of the Superintendent of Public Instruction and such relevant and material evidence as the applicant or license holder may desire to present at the hearing[; however, the applicant or license holder may not introduce evidence that was not presented or available to the Superintendent's Investigative Panel unless requested by the Panel or the Board]. At its discretion, the Virginia Board of Education may ask the applicant or license holder questions. At the conclusion of the hearing, the Virginia Board of Education will announce its decision.

D. The decision of the Virginia Board of Education shall be recorded in the minutes of the meeting, and the applicant or license holder and principal complainants will receive written notice of the decision.

8VAC20-23-790. Right of applicant or license holder to appear at hearing.

An applicant or a license holder shall have the right to appear in person at the hearings held by the local school board, Virginia Board of Education, or board committee described in this part unless he is confined to jail or a penal institution. The local school board or Virginia Board of Education, at its discretion, may continue such hearings for a reasonable time if the applicant or license holder is prevented from appearing in person for reasons such as [a] documented medical [condition] or mental impairment.

8VAC20-23-800. Notification.

Notification of the revocation, suspension, cancellation, denial, or reinstatement of a license shall be made by the Superintendent of Public Instruction, or his designee, to division

superintendents in Virginia and[, through a national clearinghouse,] to chief state school officers of the other states and territories of the United States.

ATTACHMENT C

Proposed *Licensure Regulations for School Personnel*

PUBLIC COMMENTS

Presented to the Virginia Board of Education
April 28, 2016

Virginia Department of Education
Division of Teacher Education and Licensure
P. O. Box 2120
Richmond, Virginia 23218-2120

8VAC20-23 *Licensure Regulations for School Personnel*
Public Comment Summary

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8VAC20-23 *Licensure Regulations for School Personnel*
Public Comment Summary

Commenter	Section	Comment	Agency Response
Robert N. Corley III, Ph.D., Virginia State University Associate Vice Provost for Graduate Programs	8VAC20-23-10. Definitions.	The State Board of Education and personnel in the Virginia Department of Education are to be commended for their efforts to offer a set of regulations designed to help ensure the licensing of highly qualified educators in the Commonwealth. Faculty and staff in the College of Education have expressed their overall support of the intent of these regulations and collectively cited their appreciation for the addition of add-on endorsements in special education and mathematics specialist endorsement delineations. The following are comments and suggestions offered in response to the request for public comment. Clearly define the following: 1. Administration and Supervision preK-12; 2. Support Personnel; and 3. Pupil Personnel Services. Rationale: There is inconsistency in the use of the title of this category between both sets of proposed regulations. For example, the category is referred to as "…Support Personnel" in Part VI and "Pupil Personnel Services…" in Part I of the proposed licensure regulations. The category used in Part VI of the approved program regulations is "Administration and Supervision and Support Personnel." • Add the following definitions: • "Clinically based experiences" means experiences of sufficient depth, breadth, diversity, coherence, and duration to ensure that candidates demonstrate their developing effectiveness and positive impact on all students' learning and development. Clinical experiences, including technology-enhanced learning opportunities, are structured to have multiple performance-based assessments at key points within the program to demonstrate candidates' development of the knowledge, skills, and professional dispositions that are associated with a positive impact on the learning and development of all preK-12 students. (CAEP, Standard 2.3) • Use the definition listed in CAEP, Standard 2.3. Rationale: This term is not clearly defined within both sets of proposed regulations. Consistency between regulations is needed. • "Professional studies" means courses and other learning experiences designed to prepare candidates to demonstrate competence in the areas of human development and learning, curriculum and instruction, assessment of and for learning, classroom and behavior management, the teaching profession, reading, and supervised clinical experiences. (Institutions offering education endorsements under Administration and Supervision	Part I of the Licensure *Regulations for School Personnel* defines "type of licenses," and Part VI provides detailed requirements for endorsements. The *Proposed Regulations Governing the Review and Approval of Education Programs in Virginia* set forth the competencies candidates must demonstrate in an approved program. A definition of "professional studies" has been added to 8VAC20-23-10.

Commenter	Section	Comment	Agency Response
		and Support Services do not need to include a professional studies component as part of their program competency offerings.) Rationale: No definition for professional studies is included in this section.	
Melissa Nelson, Powhatan County Schools	8VAC20-23-40. Conditions for licensure.	I agree that knowing CPR can be a literal life-saver, but at what point is it just one more thing being mandated to teachers? Do all parents need to go through CPR training? Do all restaurant workers? How about state legislators? Or do we just focus on teachers because they are compliant?	The requirement that individuals must complete training or certification in emergency first aid, CPR, and the use of and AED is a statutory requirement. The Virginia Department of Education provides a form for verification of an individual's teaching experience.
Beverly Baker, Region IV	8VAC20-23-40. Conditions for licensure.	Region IV members support the required training in First Aid, CPR and AED however it would be beneficial and more cost effective if the VDOE provided a training method similar to the Virginia civics course to support teachers and Virginia school divisions. Many newly hired staff and all renewable license holders must pay for the cost of the training. This is not a great impression to make on a first year teacher. We would like to see more support for attracting new teachers and retaining currently licensed staff.	
Ann Blankenship, Bassett High School	8VAC20-23-40. Conditions for licensure.	By requiring CPR training, we have put ourselves in a position to truly make a difference in someone's life. However, I feel like we need to ensure that hands-on training is involved in the process. There are several online "certifications" you can buy that are based on American Heart association and American Red Cross guidelines. No hands-on takes place, and people can complete it in 30 minutes or so. This is not adequate training. AHA/ARC both require hands-on to obtain certification. It is of utmost importance to be able to demonstrate your understanding of the material and have time to practice while not in a life or death situation. Please consider adding this requirement to the guidelines.	
Dr. Karen Garza, Fairfax County Public Schools	8VAC20-23-40. Conditions for licensure.	Additional clarification would be helpful regarding what would suffice as "Documentation must be submitted to verify the school's status as a public or an accredited nonpublic school" for individuals that are seeking the licensure assessment exemption via reciprocity. Would the current VDOE "Report on Experience Form" suffice?	
Dr. Karen Garza, Fairfax County Public Schools	8VAC20-23-50. Types of Licenses; dating licenses.	Fairfax County Public Schools (FCPS) appreciates the opportunity to provide you with comments on some of the proposed changes to the *Licensure Regulations for School Personnel.* • We would like to express support regarding the extension of the International Educators license from three to five years. • We oppose the proposals to place the burden on the employing Virginia educational agency to ensure that the credentials issued by the US Military are active during the period the individual is teaching. The employing Virginia educational agency should ONLY be required to ensure that a teacher of record holds the appropriate VDOE-issued license and endorsement area. The credentials issued by the US Military, or the license (non-VDOE related) issued by the appropriate board for the occupational program area are already requirements for obtaining a renewable Technical Professional License; therefore, employing Virginia	The comment supports the extension of the International Educator license from three to five years in the proposed revision. The proposed regulations require the employing Virginia educational agency offering military programs to ensure the credentials issued by the United States military are active during the period the individual is teaching. The credential is required for teachers assigned to teach military courses.

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		educational agencies should NOT be responsible for ensuring that such non-VDOE issued credentials or licenses be active during the period the individual is teaching. This would be very challenging for employing Virginia educational agencies to track especially since the expired non-VDOE issued credential or license would have no direct impact on the validity period of the Technical Professional License or the teacher's "Highly Qualified" status. One solution would be to issue the VDOE Technical Professional License based on, and in alignment with, the validity period of the credentials issued by the US Military, or the license issued by the appropriate board for the occupational program area. Another solution would be to simply make one condition for renewing the Technical Professional License to be that the license holder must present the required non-VDOE issued credentials or licenses in order to renew the Technical Professional License. While this may not be the most ideal option, it will ensure that the teacher will have an active and valid credential issued by the US Military, or license issued by the appropriate board for the occupational program area at least every 5 years.	
Jeremy Aldrich, Harrisonburg City Public Schools Cathy Smeltzer Erb, Ph.D., Eastern Mennonite University	8VAC20-23-50. Types of Licenses; dating licenses.	I am the foreign language and CTE Coordinator in Harrisonburg City. My opinions are my own and not necessarily those of my school division. In general, the changes represent a step in the right direction. I appreciate the extension of the International Educators license from three to five years, and the additional flexibility in the Elementary Education endorsements (allowing more of the requirements to be met by passing rigorous content tests) and in the Foreign Language endorsement (removing the TOEFL requirement).	Comments support the extension of the International Educator License from three to five years and the removal of the TOEFL requirement from the foreign language endorsement.
Jennifer Carson, Virginia Beach City Public Schools	8VAC20-23-50. Types of Licenses; dating licenses.	I am the K-12 World Languages Coordinator for Virginia Beach City Public Schools (VBCPS) and President of the Virginia Foreign Language Supervisors Association (VFLSA). My opinions are my own and not necessarily those of VBCPS or VFLSA. I am heartened to see the changes that are proposed, most especially the extension of the International Educators license from three to five years, and the additional flexibility in the Elementary Education endorsements (allowing more of the requirements to be met by passing rigorous content tests) and in the Foreign Language endorsement (removing the TOEFL requirement). I would also like to ask the Board to consider additional flexibility, and perhaps a new endorsement area, for the growing and popular Immersion Language programs throughout the Commonwealth**.** These programs, in which students learn for a large part of the day in a language other than English, may be called Immersion, Partial Immersion, or Dual Immersion depending on the amount of instructional time devoted to the language other than English, and the inclusion of English language learners. In VBCPS, we currently have a Spanish Partial Immersion elementary school program in a growing number of schools with plans to expand to Mandarin Chinese and one Spanish Partial Immersion middle school program. There are many	In Virginia, immersion elementary classroom teachers must be licensed and endorsed in both elementary education and the foreign language.

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		native and near-native speakers who would like to teach, but are discouraged by the difficulties in obtaining an endorsement, particularly in Elementary Education. I recommend adding a new Immersion Education endorsement, with a requirement for advanced proficiency in a world language and targeted coursework to ensure quality immersion education. An Immersion Education endorsement would give a teacher highly qualified status to serve as a classroom teacher and would enable us to provide a more direct path to teaching for more candidates, especially those who are career switchers or who move here from Puerto Rico or other states. Utah, Rhode Island, and Illinois are among the states that have created a specific endorsement for Bilingual or Dual Language education to respond to the growing demand for these effective programs. As our Partial Immersion Program is expanding to include more elementary schools and languages, a licensure path is critical to staffing and continued success.	
Jeremy Aldrich, Harrisonburg City Public Schools Cathy Smeltzer Erb, Ph.D., Eastern Mennonite University	8VAC20-23-50. Types of Licenses; dating licenses.	I am the foreign language and CTE Coordinator in Harrisonburg City. My opinions are my own and not necessarily those of my school division. In general, the changes represent a step in the right direction. I appreciate the extension of the International Educators license from three to five years, and the additional flexibility in the Elementary Education endorsements (allowing more of the requirements to be met by passing rigorous content tests) and in the Foreign Language endorsement (removing the TOEFL requirement). I would also like to ask the Board to consider additional flexibility, and perhaps a new endorsement area, for the growing and popular Dual Language programs around our state in which students learn for a large part of the day in a language other than English (in our programs, for example, they learn for about half of the day in the Spanish language). The growth in these programs nationwide means that teacher openings are very hard to fill, and the current path to an Elementary Education endorsement is too steep in time and cost for our state to be an attractive destination for Dual Language teachers. I suggest the addition of a new Immersion Education endorsement, with a requirement for advanced proficiency in a foreign language and targeted coursework to ensure quality immersion education. An Immersion Education endorsement would give a teacher highly qualified status to serve as a classroom teacher and would enable us to provide a more direct path to teaching for more candidates, especially those who are career switchers or who move here from Puerto Rico or other states. Utah, Rhode Island, and Illinois are among the states that have created a specific endorsement for Bilingual or Dual Language education to respond to the growing demand for these effective programs. Though the areas I work with - Foreign Language, Dual Language, and CTE - are different in many respects, one thing they share is the critical need for more great teachers to join the field. Anything the Board can do to make the process of becoming a teacher more streamlined and more attractive is welcome.	

8VAC20-23 *Licensure Regulations for School Personnel*
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Beverly Baker, Region IV	8VAC20-23-50. Types of Licenses; dating licenses.	Region IV fully supports the five-year International Educators license.	
Goochland County Public Schools	8VAC20-23-50. Types of Licenses; dating licenses.	Goochland County Public Schools implemented our first Marine Corps JROTC program last school year. The program has been very successful and continues to set paramount standards of leadership and excellence for the students enrolled. The JROTC curriculum is unique and created exclusively by the United States Marine Corps. Likewise, JROTC instructors matriculate through an intense Marine Corps training program focused on teaching young people leadership, citizenship, personal growth and responsibility, public service, and career exploration. To require these men and women to complete professional studies courses in areas such as Classroom Management and Curriculum and Instruction seems to add little value to the overall impact the program and curriculum has on our students. Since the JROTC curriculum and standards are created and maintained by the United States Marine Corps with very little to no input from state and federal education departments we are requesting that the Commonwealth consider removing the required professional studies requirements for individuals seeking a license to provide JROTC Instruction since they already receive training in this area instead.	The proposed regulations allow individuals teaching military JROTC programs to seek a Provisional License leading to a Technical Professional License. The Technical Professional License does not require licensure assessments and allows for reduced professional studies. Nine semester hours, including human growth and learning, curriculum development, and applications of instructional technology or classroom and behavior management are required. The regulations allow a school division superintendent to submit an alternate plan to meet the professional studies requirements.
Wayne Barry	8VAC20-23-50. Types of Licenses; dating licenses.	While an incredible amount of energy has gone into the revising and reviewing process, I'd like to offer observations that I think might fine-tune these proposed regulations, or a future iteration thereof. The particular School Board goals my observations address are Goals 1, 5 and 7 in your 2012-17 plan. 1. I'd like to suggest that Virginia Board of Education study the necessity for and feasibility of an Administrator 3 license, i.e., licensure to work at school division and Department of Education levels of administration. I assume the Board would also study and consider alternative methods for attaining Administrator 3 licensing, and effective ways of grand-parenting individuals into said level. 2. I would respectfully request that the Virginia Board of Education look at the necessity for and feasibility of requiring special education directors to hold administrative licenses. I have often wondered if special education services to children with disabilities might be enhanced – and certain practices less frequently litigated – if special education directors were required to have administrative training and licensing. 3. I think the Virginia Board of Education might also be able to positively affect the performance of children receiving special education services by delineating in the licensing regulations, with corresponding competencies and responsibilities, a role that seemed to be increasing in practice in school divisions without definition i.e., the role of "educational diagnostician" or "psychometrician". These educational roles are not spelled out in any state regulations that I'm aware of and can be confusing to other staff, parents and members of the community-at-large.	The proposed regulations do offer alternate routes to the administration and supervision endorsement. The endorsement is for individuals who serve as principals, as well as individuals who serve in supervisory positions in central office (such as special education directors).

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Catherine Weers, Chesapeake Public Schools	8VAC20-23-50. Types of Licenses; dating licenses.	The newly proposed licensure regulations for online teaching make it easier for non-licensed teachers to receive an online Virginia teaching licensure without traditional student teaching/face-to-face classroom experience. They would only need their online teaching experience with a combination of a mere 3 credit college course to qualify to teach online in Virginia. They would miss out on the value of the student teaching experience, including how to build a rapport with students and child psychology. Three credits are not sufficient to understand how to teach online with the absence of a student teaching experience. There are no guidelines or even criteria outlined for the 3 credit college class that would need to be taken to teach online. Adding this new pathway to licensure will benefit private companies looking to profit from our students by increasing their course offerings and enrollment. There is no benefit to the students in Virginia, only the private companies looking to profit from their online education programs. Right now, many online teachers working for private companies (i.e. K.12inc.) are unable to qualify to teach Virginia students online under current regulations. We understand that the newly proposed regulations are just another avenue for a teacher to use their online teaching experience in lieu of student teaching to get an online teaching license. However, the addition of only a 3 credit course about online teaching (with no mention of the type of online course) and no classroom experience is not sufficient in the online environment.	The General Assembly required the establishment of a license for individuals only teaching online courses. The Online License is not for individuals who already hold a renewable Collegiate Professional or Postgraduate Professional License. The proposed regulations require that individuals seeking the Online License must complete all of the course requirements for a regular teaching license with the addition of a three-semester-hour course in online instructional procedures. The proposed regulations do set forth the competencies that must be addressed in the course.. Additionally, individuals seeking a renewable online license must provide documentation of successful teaching experience.
Ann Wright, Virginia Commonwealth University, Rice Center Alycia Crall, Director, Master Naturalist Program, Virginia Tech, Cooperative Extension Bob Pohlad, Ferrum College Candace Lutzow-Felling, State Arboretum of Virginia, University of Virginia Carolyn Thomas, Ferrum College	8VAC20-23-50. Types of Licenses; dating licenses.	The University Consortium for Environmental Education supports the development of an add-on teaching endorsement in Environmental Education for classroom teachers in Virginia. Appendix 1 lists the University Consortium membership. An add-on endorsement provides a framework for teachers to follow, making them more well-rounded instructors better prepared to facilitate Meaningful Watershed Education Experiences (MWEEs), and to lead teaching for Biology II: Ecology and AP Environmental Science. National Standards for Environmental Education, already developed by North American Association for Environmental Education (NAAEE) are recognized through the National Council for Accreditation of Educator Preparation (CAEP). Schools and societies have a responsibility to promote the development of environmentally literate citizens who have the necessary knowledge, skills, and dispositions to sustain a healthy environment. Hollweg, et. al. defines environmental literacy as follows: "Environmental literacy is knowledge of environmental concepts and issues, the attitudinal dispositions, motivation, cognitive abilities, and skills, and the confidence and appropriate behaviors to apply such knowledge in order to make effective decisions in a range of environmental contexts. Individuals demonstrating degrees of environmental literacy are willing to act on goals that improve the well-	The establishment of a new add-on endorsement in environmental education is not recommended in the proposed regulations. Ecology and environmental concepts are incorporated at every level – elementary education, middle education, and secondary education (biology and earth science) in the *Standards of Learning* and the competencies for approved programs.

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Cynthia Smith, George Mason University Dann Sklarew, George Mason University Eileen Merritt, University of Virginia Greg Eaton, Director, Claytor Nature Center, Lynchburg College Joe Baust, Longwood University George Glasson, Virginia Tech Marc Stern, Virginia Tech Sujan Henkanaththegedara, Longwood University Tamra Willis, Mary Baldwin College Tim Thomas, James Madison University		being of other individuals, societies, and the global environment, and are able to participate in civil life." It is a midst that requires problem solving and critical thinking that begins in early childhood. It transcends any subject taught in school and requires a holistic approach. It is what leaders in the field call "using the environment as an integrating context."[i] We must take diversity into account to effectively make people environmentally literate. At every stage and subject, we must help people see the connection between their individual actions and community actions. Many students lack critical thinking and decision-making skills that would enable them to solve real world environmental problems[ii iii]. Research suggests that environmental education programs are more effective when students have an opportunity to learn outdoors, and when their teachers have had focused training prior to leading instruction[iv]. Service-learning programs that engage students in real-world problem-solving can impact new knowledge and skills needed for future civic engagement[v]. Additionally, the research shows this approach improves student's intellectual and emotional development. Also, we include Appendix 2 which lists research supporting the use of the environment as an integrating context. The Commonwealth must ensure that teachers are equipped to provide the kind of multi-disciplinary learning required for environmental literacy. Learning is continuous and creates engaged citizens and communities. Having teacher leaders trained to provide classrooms, schools and school systems with environmental education to educate for environmental literacy <u>should begin with a teaching endorsement that is grounded in guidelines and standards set by the field</u>.[vi vii] Beginning with in-service and graduate school education, the Commonwealth should develop an environmental education endorsement for any teacher who has an initial teaching endorsement. The approach would be to provide at least twelve hours of college credit in environmental education to provide tools to teach environmental literacy across the Commonwealth. Currently, Wisconsin and Kentucky have adopted such an approach where any licensed teacher can take prescribed courses to become endorsed in environmental education. This spans the disciplines and is not restrictive to a specific major or field of study. The outcome is the creation of a cadre of teachers to lead those states in promoting environmental literacy across the educational spectrum. Virginia could make use of the experience of these two states to create and improve upon its approach. This would help provide an initial step, a plan for developing teacher leaders in environmental literacy across the Commonwealth. Existing classes in Virginia including Biology II: Ecology, Earth Science II, AP Environmental Science and Earth Science offered in high school address environmental issues. Students must also participate in a Meaningful Watershed	

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		Education Experience (MWEE) throughout their school year. In most classes, students receive instruction form teachers with endorsements in Elementary Education, or traditional sciences. While instruction via these disciplines is robust, additional course work could strengthen teacher capacity to provide more effective instruction in these areas. Many organizations offer high-quality professional development that prepares teachers for instruction outside the classroom. Some model programs include: the Chesapeake Bay and Watershed Academies, coordinated through the Virginia Resource Use Education Council and state partners, the Virginia Science Standards Institutes, offered by the Virginia Museum of Natural History; and Bay Education workshops and field trips, provided by the Chesapeake Bay Foundation. While there programs are exemplary, and many offer CEUs and college/graduate credit, none of them fit within a larger context of a teaching endorsement in environmental education. The University Consortium for Environmental Education, assisted by the Department of Conservation and Recreation's (DCR) Office of Environmental Education is ready and able to work to develop an environmental education teaching endorsement so that teachers can elect to improve their content knowledge and pedagogical skills in environmental education. This is consistent with Article XI ("Conservation") and the Constitution of Virginia that "it shall be the policy of the Commonwealth to conserve, develop, and utilize its natural resources, its public lands, […and…] to protect its atmosphere, lands, waters from pollution, impairment, or destruction, for the benefit, enjoyment, and general welfare of the people of the Commonwealth." We believe that this endorsement will strengthen our efforts in Virginia to educate students who can solve future and existing environmental problems and become responsible stewards of our natural resources. We deeply appreciate your efforts at the Department of Education and look forward to assisting you and the department in moving this idea forward. [i]Glenn, J. (200) *Environment-based Education: Creating High Performance Schools and Students*. Washington, DC: National Environmental Education and Training Foundation [ii]McBeth, Williams and Volk, Trudi. *The National Environmental Literacy Project: A Baseline Study of Middle Grade Students in the United States.* Journal of Environmental Education. Vol.41, Issue: 1, pages: 55-67 [iii]OECD. (2009). *Green at fifteen? How a 15-Year-Olds Perform in Environmental Science and Geoscience in PISA 2006*, Paris: OECD. [iv]Zelezny, Lynette. *Values as predictors of environmental attitudes: evidence for consistency cross 14 countries*. Journal of Environmental Psychology. Vol. 19, Issue 3, September, 1999, Pages 255-265.	

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		[v]Celio, C., Durlak, J. A., & Dyminicki, A. (2011). *Helping others and helping oneself: A meta-analysis of service-learning programs*. Journal of Experiential Learning, 3, 164-181. [vi]Simmons, Deborah. Guidelines for the Preparation and Professional Development of Environmental Educators. (Washington, DC: North American Association for Environmental Education.) 2010. [vii]Simmons, Deborah. Standards for the Initial Preparation of Environmental Educators submitted and approved by the National Council doe Accreditation of Teacher Education. (Washington, DC: North American Association for Environmental Education.) 2007.	
Emily Massey, Chesterfield County Public Schools	8VAC20-23-90. Alternate routes to licensure.	I too am concerned about the proposed requirement to be eligible for a special education provisional license. We struggle to fill special education positions with the current regulations. I fear increasing them will result in more vacancies. We'll be forced to increase class sizes or use substitutes. While I agree that one-class does not adequately prepare someone to teach special education students, perhaps there are other options. For example, if the individual already holds a full license in a content area, the existing 3 semester hour prerequisite course could be sufficient to allow them to convert to a provisional in special education. Perhaps the 9-hour requirement could be reserved for individuals without any prior teaching experience.	The proposed regulations are amended to (1) remove the nine-semester-hour requirement as a prerequisite for the Provisional (Special Education) License and (2) delete the requirement of issuing Provisional Licenses for two years, instead of three, and require that assessments be taken during the validity of the first two years of the license.
Elizabeth Langran	8VAC20-23-90. Alternate routes to licensure.	Proposed regulation that 9 credit hours or 3 classes should be required to get a provisional SPED license. I support the proposed regulation that 9 credits/3 classes be required for provisional SPED license.	
Mark Ginsberg, Ellen Rodgers; George Mason University	8VAC20-23-90. Alternate routes to licensure.	Strong concern. Faculty are not in agreement with the proposal to increase the semester hour requirement from 3 credits to 9 credits for the Provisional (Special Ed) License. Additionally, the proposed 9 credits do not include the "Foundations" course for Special Education. There is also very strong concern that School Divisions across the Commonwealth will be forced to rely on substitute teachers since there will be a drastic Decrease in those in the provisional pipeline.	
Mindy Abbott, Prince William County Public Schools, Region 4	8VAC20-23-90. Alternate routes to licensure.	All Region IV school divisions want to hire the most highly qualified special education teachers. However, Special Education is a critical shortage area and the reality is that we just don't have the applicants to fill the number of special education vacancies. This change will only result in having more substitute teachers placed in special education classrooms throughout Virginia. Additionally, the 9 semester hours that would need to be completed in order to be issued a provisional license, are courses that have become blended into Approved Programs. It will be very difficult for licensure specialists to determine if course work meets the specific content requirements as set forth by the VDOE Licensure Regulations. As an alternative, we would like to recommend changing the regulation to show completion of the 3 semester hours currently required and providing verification of enrollment in an approved licensure program.	
Asia R. Jones, Ed.D. Loudoun County Public Schools	8VAC20-23-90. Alternate routes to licensure.	It is our goal to hire highly qualified special education teachers for our students. As a former special education teacher, I certainly understand the benefit of having completed required coursework before assuming teaching responsibilities. However, our reality is that special education continues to be a critical	

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		needs/shortage area due to the limited number of applicants in the field. Loudoun County Public Schools, Region IV schools, and others across the state begin the year with vacancies in special education because of the teacher shortage. A number of our special education teachers are provisionally licensed under the current regulations which require a Bachelor's Degree and completion of the special education survey course. These teachers are assigned mentors and are provided professional development as additional support within the classroom. Similarly, our licensure specialists monitor and encourage the prompt completion of the prescribed program of study. Adding an additional six credit hours of requirements to the provisional special education license will eliminate many of the applicants in an already shallow pool of eligible candidates. I respectfully request that this proposal be reconsidered to maintain the existing requirement of three semester hours coupled with verification of enrollment in an approved program of study.	
Dr. Paul D. Johnson, HR Director Page County Public Schools	8VAC20-23-90. Alternate routes to licensure.	As the Director of Human Resources & Administration for Page County Public Schools (Region IV), the following response represents the views of the Administration of Page County Schools. Response to some of the proposed regulation changes to Teacher Licensure include: A few concerns with this proposal. First, I worry that the VDOE Licensure Specialists will not be able to keep pace with the increase in licensure requests. Currently, the turn-around time (with provisional licenses being renewed every 3 years) is challenging (sometimes several months). It stands to reason, that adjusting from a 3 year review, to a 2 year review will increase their workload and ability to be efficient (unless there are plans to add VDOE Licensure Specialists). Secondly, our school division is a rural division in the Shenandoah Valley. Typically, we rank low among Shenandoah Valley school divisions in teacher salaries. This provides great challenges in hiring and retention. Often, we have to hire provisionally licensed teachers, as fully licensed teachers choose higher paying divisions. The 3 year provisional process has been fair and effective for our division to hire competent, qualified teachers who are willing to work towards a goal. In recent years, we have seen a shortage in fully credentialed teachers. I am fearful that an unintended consequence of tightening provisional requirements could actually contribute to a teacher shortage, by making the requirements and time frame more strict. As mentioned in 8VAC20-23-50, it does not seem prudent to tighten requirements for teacher licenses, during a time when economic constraints and available qualified teachers are limited (particularly for the rural, less economically advantaged counties). Our school division has relied heavily on individuals that possess a Bachelor's degree and are willing to enroll in a SPED Master's program (quite often, these are our experienced SPED paraprofessionals). The option of needing 3 hours for a provisional license has enabled us to put experienced	

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		paraprofessionals (with a Bachelor's degree) into a classroom. I believe that extending the requirement to 9 credit hours would limit our effectiveness of finding willing, capable employees on the front end of their Master's program in SPED. The 9 credit hour rule may actually create gaps, in which our only option would then be unqualified substitutes.	
Diane Painter, Shenandoah University	8VAC20-23-90. Alternate routes to licensure.	Upon reviewing the proposed revisions governing the review and approval of education programs in Virginia, it appears on p. 7 that candidates seeking an endorsement in special education-gen curriculum K-12 must have 12 to 15 semester hours in a content area (English, math, science or history/social sciences) in addition to passing a Praxis content exam. In my experience, I have quite a few psychology majors entering our university's initial licensure program in Special Education-General Curriculum K-12. Requiring them to take an additional 12-15 semester hours in a content area in addition to passing a Praxis exam is prohibitive and will only add to the teacher shortage because of time required to complete endorsement requirements. I have found that psych majors who add on content endorsements by passing the Praxis II exams in a content area are doing quite well teaching students with special needs (especially working with children with behavior concerns) and that by passing the Praxis II exams they also know the content students with special needs have to learn. Let's not make it harder to recruit good candidates into the field of special education- let's make the process doable and reasonable.	
Dr. Stacey Timmons	8VAC20-23-90. Alternate routes to licensure.	There is a shortage of special education teachers now and adding more requirements before we can get an applicant a provisional license seeks to further complicate our recruiting and hiring efforts. The area of special education is designated as a critical need area yet this change is being proposed. I would urge more study and reflection on implications this will cause for school divisions.	
Shenandoah University	8VAC20-23-90. Alternate routes to licensure.	I agree that more than 3 credits of special education law are needed in order to obtain a special education provisional teaching license. However, I believe anyone without a teaching license who is applying for a provisional special education teaching license should complete an introductory special education law course that gives an overview of IDEA, in particular the development and implementation of an IEP. That course should be followed by a characteristics course and a behavior management course. It is also important that provisionally licensed teachers who are not already licensed to teach in another area (general education, health education, etc.) need to show that they have completed an undergraduate degree and they can meet minimal skills in reading, writing and math (i.e. taken and passed Praxis Academic CORE, or demonstrate competency with ACT/SAT scores) and they have been accepted in an approved teacher preparation program to complete the rest of their course and internship requirements to obtain a renewable license. In lieu of student teaching, their teacher preparation program should demonstrate that these provisionally licensed teachers have had management and mentorship supervision as part of completing program requirements. These recommendations are made for several reasons. First, provisionally licensed teachers need to have an understanding of the laws, regulations, policies and	

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		procedures that govern the IDEA process. This includes the components of an IEP and their role in creating and following an IEP. They need to understand the characteristics of students with disabilities and what research states are best practices in meeting the academic, social and functional behavioral needs. Management of behavior to include FBA/BIPs is also essential for beginning special education teachers to know. Second, teachers without minimal literacy and numeracy skills are not effective in teaching students who struggle in those areas. Provisionally licensed teachers with low skills in reading and writing have a hard time passing the VCLA and RVE tests- requirements to obtain a renewable teaching license. Third, every beginning teacher, licensed or on provisional status, needs support and mentoring in order to learn what is needed to do their job. This is why it is critically important to provide mentorship within the school system as well as proper supervision within an approved program. Teachers who have such support are more apt to stay in teaching, and the students they serve also benefit from the support. Research shows that it costs schools systems too much money when new teachers leave at high rates within their first five years of teaching.	
Dr. Karen Garza, Fairfax County Public Schools	8VAC20-23-90. Alternate routes to licensure.	Fairfax County Public Schools (FCPS) appreciates the opportunity to provide you with comments on some of the proposed changes to the *Licensure Regulations for School Personnel.* We have concerns to share in the following specific areas: 8VAC20-23-50 A.1 and 8VAC20-23-90 C FCPS does not support the proposed change to a two year provisional license as it will create a significant burden on VDOE Licensure Specialists as well as increase the processing and response time from the VDOE for licensure actions/requests. These changes would also force most school districts to change their current "Non-Renewal" procedures, which currently align with the 3-year validity period of the provisional license and the tenure/continuing contract schedule in Virginia. Please consider changing "c" under this section to read "need to complete an allowable portion of the requirements for the endorsement area" and if possible, offer clarification on what the VDOE would consider allowable. Such as "in general, the candidate must be within 6 credits of meeting the requirements for the endorsement." FCPS continues to support this route to the Provisional (Special Education) License and do not believe that this option should be limited only to individuals that already hold a valid Collegiate Professional or Postgraduate Professional License. We are very concerned about the potential impact of the proposed change to require individuals who have never held a license to complete 9 semester hours of courses in order to qualify for a Provisional (Special Education) License. Such an increase would create an extreme burden on many Virginia school divisions and limit their ability to hire contracted teachers into what is already a critical shortage area. One related negative impact would be increased reliance on substitute teachers due to the	

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		dearth of candidates that would be eligible for obtaining a Provisional (Special Education) License with the increase to 9 semester hours. Another concern is that the proposed revision no longer requires that the candidate complete a "Foundations" course as a prerequisite for the Provisional (Special Education) License. The Foundations course is typically an introductory course and addresses the historical, ethical, and legal aspects of working with Special Education populations.	
Claudia Haggerty, Licensure Specialist, Alexandria City Public Schools	8VAC20-23-90. Alternate routes to licensure.	Alexandria City Public Schools is not in favor of changing to a 2-year Provisional License with the possibility of a third extension. First, from a teacher's perspective, their first year is vitally important and extremely busy. They are getting acclimated to a new environment, learning their craft, finding their rhythm of working with their students, and learning how to effectively collaborate with parents, fellow teachers and school administrators. We would prefer to leave the three year provisional license as it exists today so we do not add pressure to our new teachers. Second, if the goal is to encourage provisionally licensed teachers to take their assessments earlier rather than later, I suggest that this be left at the school division level. At ACPS, we require that all provisionally licensed teachers who are cited for a content area Praxis II test present passing score results to the ACPS Licensure Office during their first year of teaching. While this is not a VDOE requirement, we feel it is reasonable, fair and necessary to verify that our teachers have demonstrated mastery of their content area in their first year. We do not, however, require that the VCLA or RVE exams be passed in their first year. We don't think the added pressure is necessary. Third, having a firm three-year license without an extension keeps things simple. Allowing an extension creates more work for everyone. It already takes approximately six weeks to process an initial licensure request. Implementing this change can only increase the turn-around time. This is a disservice to our teachers. For practical purposes, please leave the existing practice alone. Let the school divisions implement their own policies to address timeliness of test taking. Let's not add pressure to our new teachers. ASPS is not in favor of requiring nine semester hours rather than three semester hours prior to issuing a Provisional (Special Education) License for the simple reason that we already have great difficulty filling our Special Education Teacher positions. WE fear that this change will create a barrier to entry rather than raise the quality of our special education teachers. As it stands now, we can attract promising, talented and enthusiastic teachers who have completed the currently required three-credit class and we can groom them while they continue their course work. By raising the minimum requirement, our pool of candidates will shrink and	

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		it leaves us in a worse position. We will have more instances where we have substitute teachers working with our special education students. This is disruptive and disturbing to our students. Please so not implement the proposed change and make it that much more difficult for us to serve our special education students.	
Beverly Baker, Region IV	8VAC20-23-90. Alternate routes to licensure.	Changing the provisional license to a two-year license will result in additional work for Licensure Specialists in all Virginia school divisions and the Virginia Department of Education. Additional tracking, gathering of documents and changes in many reporting design tools will be required. Region IV schools prefer to have the ability to set in-house guidelines for showing progress and non-renewing licensed staff. We have found that many good teachers need up to the third year to successfully complete the required assessments. These teachers have already completed ESOL, Diversity, Technology Standards, Suicide Prevention and employment mandate training and have become an asset to the school divisions and the students they teach. We feel this will only add to the teacher shortage in Virginia. The current response time for licensure requests sent to the VDOE range from four to eight weeks, depending on the time of year the request is sent. Region IV school divisions worry the response time will be longer due to the increase in licensure requests if the provisional license is changed from three years to two years.	
Dr. Diane D. Painter, Shenandoah University	8VAC20-23-90. Alternate routes to licensure.	In order to attract good, qualified candidates to the teaching profession in Virginia, we need to use education funding at the state level to help school districts hire recent college graduates for paraprofessional positions that place them in schools fulltime at the same time they begin master degree programs that lead to initial teacher licensure. Part of the funding would be used as staff development funds to help pay the tuition of these paraprofessionals who are working toward endorsements in critical need areas such as math, science and special education. By working in schools, these candidates would be earning invaluable teaching experiences - similar to candidates in professional development schools.	The Virginia Board of Education does not license paraprofessionals.
Beverly Baker, Region IV	8VAC20-23-110. Requirements for Renewing a license.	Region IV supports the Virginia history/government course requirement and appreciates the online training provided at no charge to school divisions and license holders.	The comment supports the online Virginia History or State and Local Government Module. This training is required by statute.
Robert N. Corley III, Ph.D., Virginia State University	8VAC20-23-130. Professional studies requirements.	"Professional studies" means courses and other learning experiences designed to prepare candidates to demonstrate competence in the areas of human development and learning, curriculum and instruction, assessment of and for learning, classroom and behavior management, the teaching profession, reading, and supervised clinical experiences.(Institutions offering education endorsements under Administration and Supervision and Support Services do not need to include a professional studies component as part of their program competency offerings.) Rationale: No definition for professional studies is included in this section. Professional studies requirements for early/primary education, elementary education, and middle education: 21 semester hours. These requirements may be	A definition of “professional studies” has been added to 8VAC20-23-10.

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		taught in integrated coursework or modules. • Add the following: • Professional studies coursework and methodology, including field experiences shall be designed for completion within a baccalaureate or graduate degree program. Rationale: Programs may be offered at both undergraduate and graduate levels of study.	
Beverly Baker, Region IV	8VAC20-23-130. Professional studies requirements.	Region IV supports the change to include Assessment however we do not support adding credit hours to the total professional studies requirement. We must be careful that we are not making license requirements more difficult when we are already experiencing a teacher shortage.	The comment supports the additional flexibility in the elementary education endorsements to allow meeting some requirements by passing rigorous content tests. The proposed licensure regulations recommend an additional three semester hours in "assessment of and for learning." Teacher preparation programs must address all competencies; however, credits are not specified.
Dr. Paul D. Johnson, HR Director Page County Public Schools	8VAC20-23-130. Professional studies requirements.	As long as teacher prep programs aren't adding total number of courses/credit hours, this would be OK. We need to be careful that we are not making license requirements more difficult, during a time when available, licensed teachers may be declining.	
Dr. Karen Garza, Fairfax County Public Schools	8VAC20-23-140. Early childhood for three-year-olds and four-year-olds (add-on endorsement).	We would like to express support regarding the following: • The proposed change to allow individuals that hold the Special Education Early Childhood endorsement the option to add-on the "Early childhood for three-year-olds and four-year-olds" endorsement to their existing license (8VAC20-23-140 1).	The comment supports the (add-on) endorsement for the early childhood for three-year-olds and four-year-olds (add-on endorsement).
Robert Pianta, University of Virginia	8VAC20-23-140. Early childhood for three-year-olds and four-year-olds (add-on endorsement).	The proposed regulations provide more and stronger opportunities for promoting a more effective early education workforce in Virginia. The add-on endorsement for 3-4 year-olds and the prek-3 endorsement propose a stronger focus on candidates' demonstrating skills in effective teaching and knowledge of content and child development appropriate to that age range and educational program. The proposed language and endorsements will help strengthen Virginia's educational programs for young children.	
Tracey Pritchard, Liberty University	8VAC20-23-140. Early childhood for three-year-olds and four-year-olds (add-on endorsement).	Special education preparation is related to many early childhood competencies. After completion of the required 9 hours of graduate courses in early education, students holding an active license in special education, general curriculum, K-12, should also be eligible for this add-on endorsement.	The proposed regulations recommend that the candidate must have an earned baccalaureate degree from a regionally accredited college or university and hold a license issued by the Virginia Board of Education with an endorsement in elementary education (such as preK-3 or preK-6) or early childhood special education.
Karen Parker, Liberty University	8VAC20-23-140. Early childhood for three-year-olds and four-year-olds (add-on endorsement).	Candidates who hold an active license in special education general curriculum K-12 should also be eligible for the add-on endorsement. Special education preparation is related to many early childhood competencies. Upon completion of the additional 9 hours of graduate coursework in early childhood that is required for the endorsement, all competencies would be met for candidates who hold the special education general curriculum endorsement.	
Brock Relyea, Prince William County Schools / Region IV	8VAC20-23-150 and 160. Early/primary	The proposed amendments to revise the Early/Primary Education PreK-3 and PreK-6 endorsements by increasing the coursework requirements in Mathematics and Science and provide an option for specified requirements and testing will be a	Comment supports increasing coursework in mathematics and science for the early/primary education preK-3 and preK-6 endorsements.

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	education preK-3 and elementary education prek-6.	positive change for the Commonwealth. As a representative of Prince William County Schools and Region IV, I support these amendments. First and foremost, increasing the requirements for Math and Science for those teaching at the Elementary levels will result in teachers that are well prepared to instruct the next generations of Virginians in these key areas. Providing these teachers with the option for specified requirements and testing will be beneficial to both them and their employing school divisions. As a Licensure Specialist in a rapidly growing school district, I have the privilege of working with thousands of new and current Virginia teachers. One thing that nearly all teachers express to me while discussing endorsements is how much they appreciate both specific course requirements and the option to take assessments such as the Praxis II as a means of meeting license standards. As educators with their primary focus on their classroom and the students they're teaching, the clearer the guidelines related to what they need to do in order to meet the requirements for an endorsement, the better. As a busy school division that needs to fill positions with the most qualified and highly trained educators possible in an efficient manner, specific requirements and testing will help us identify the best people to teach our students and make sure they're eligible for the appropriate licensure. These amendments to increase the coursework requirements in Mathematics and Science and provide an option for specified requirements and testing for the aforementioned Elementary endorsements will not only be good for the students in our Virginia schools, but for their teachers and the school divisions that employ and assist them with licensure, as well.	
Dr. Karen Garza, Fairfax County Public Schools	VAC20-23-150 and 160. Early/primary education preK-3 and elementary education prek-6.	Fairfax County Public Schools (FCPS) would like to express support regarding the following: The additional flexibility in the Elementary Education endorsements allowing more of the requirements to be met by passing rigorous content tests.	The comment supports additional flexibility in the elementary education endorsements allowing some requirements to be met by passing rigorous content tests. The specialization requirement for Special Education-General Curriculum was proposed in the *Regulations Governing the Approval and Review of Education Programs in Virginia*, not the *Licensure Regulations for School Personnel*. This proposed requirement has been recommended to be stricken.
Mark Ginsberg, Ellen Rodgers; George Mason University	VAC20-23-150 and 160. Early/primary education preK-3 and elementary education prek-6.	8VAC20-23-150 & 8VAC20-23-160 There is also support for the specific Methods of Teaching Elem Math and Methods of Teaching Elem Science courses. Clarification is needed on the need for a Specialization for Special Ed - General Curriculum K-12 programs. Does this apply solely to undergraduate programs? Will the license reflect the specialization area? If not, what is the point for IHEs to track this information? Concern with how this will be tracked/recorded and relayed to the VDOE from the IHEs. If required for graduate level programs, then this would be overly limiting to recruitment and admission of candidates.	
LouAnn Lovin, James Madison University	8VAC20-23-160. Elementary education	I was happy to see the increase of required mathematics courses that includes an explicit mention of a math methods course for Early, Elementary, and Middle	The comments supports the increased mathematics coursework. Setting qualifying scores for

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	prek-6.	School teachers preparing to teach mathematics. However, I have grave concerns regarding the option for teacher education programs to replace math content courses with passing a "rigorous elementary subject test prescribed by the Virginia Board of Education" which presumably will be a content Praxis exam. The current situation with the content Praxis exam for early childhood/elementary seems to be a moving target - and it's also not all that clear how Virginia's cut score relates to other states because they keep changing the exam. For too long Virginia has allowed the cut score on the Praxis for early/elementary "content" to be much lower than the cut score required by Middle Ed and Secondary Ed content areas - the latter which have been the highest in the nation. Given the foregone conclusion that there has to be an exam for licensure, Virginia should step up and require their early childhood and elementary teachers to also have to meet the highest cut score in the nation for ALL of their content Praxis exams. Not only is it difficult to find any state where most if not all people eventually pass the elementary Praxis content exams; but D'Agostino and Powers (2009) conducted a meta-analysis on certification exam data that revealed that certification test scores, such as the Praxis, likely do not offer additional information beyond "safeguarding the public from incompetent teaching" – certainly a minimal expectation. In short, the results of that study do not support allowing Praxis to replace required content coursework. In fact, D'Agostino and Powers state "It was found that test scores were at best modestly related to teaching competence and that performance in preparation programs was a significantly better predictor of teaching skill." So including the option to take a Praxis exam over taking content courses raises red flags for me. And assuming the Praxis exams will continue to be used, at the very least, Virginia should require their teachers to meet the highest cut scores. Virginia's children deserve it.	assessments is a separate process; the Board of Education determines the licensure assessments and the cut scores.
Dr. Karen Garza, Fairfax County Public Schools	8VAC20-23-130 and 190. Professional studies requirements.	FCPS is concerned that increasing the Professional Studies requirement from 18 semester hours to 21 semester hours for these specific endorsement areas would make it much more difficult for individuals to complete and meet all Provisional Licensure requirements within the three year validity period. FCPS believes that current regulations are sufficient in requiring that assessment competencies be met via a "Curriculum and Instructional Procedures" course and do not support this added Professional Studies requirement. FCPS is concerned that the proposed change of the "Foundations of Education" requirement to "The Teaching Profession" would only serve to create confusion and difficulty for candidates seeking courses to meet this proposed requirement.	The proposed licensure regulations recommend an additional three semester hours in "assessment of and for learning." Teacher preparation programs must address all competencies; however, credits are not specified.
Kurt Stemhagen, Former Math Teacher Associate Professor in VCU	8VAC20-23-190. Professional studies requirements.	Please reconsider the change from "Foundations of Education" to the "Teaching Profession." "Foundations of Education" is well-developed field of study. The coursework provides a unique and critically important component to Teacher Education bringing perspective meaning to teaching, fostering consideration of the rule of public schools. Studying the "Foundation of Education" plays the key role in the developing professional, wise and ultimately effective teachers for the	The Professional Studies requirement of "The Teaching Profession" is proposed to be amended as "Foundations of Education and the Teaching Profession."

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		Commonwealth. It places day-to-day classroom practice in its wider context. In other words "Foundations of Education" focuses on the wise of education from societal goals to cultural and social trends affecting all aspects of education. Removing the wording might seem trivial but I worry that it would have the effect of cutting off professional studies area from its disciplinary mooring.	
James Wicks, Liberty University	8VAC20-23-190. Professional studies requirements.	I believe it is unnecessary to change the title from "Foundations of Education" to the "Teaching Profession". I believe the historic title is critical in reminding all of us and our teacher candidates of our need to recognize our heritage in American education as well as general historic, philosophical, and social principles associated with the title. If we seek to remove essential foundations from our programs which this title change may suggest then we undermine the valuable message that transmission is necessary for maintaining and strengthening our teacher candidates within an ethically and intellectually rich environment that synthesizes past accomplishments and shortcomings for the sake of building a more stable educational environment beneficial to all citizens within the state of Virginia.	
Andy B. Hollyn L. Samantha B. Paxton S. Alexander S. Moore Becky N. Kayla Kilgore Matti Hamed Jakob Harris Meghan Behl Christine Smith Amanda Shrewsberry, Radford University Elizabeth Martin, Radford University Bryan Tate, Radford University Hailey Smith, Radford University Caitlin L., Radford University McKenzie Hunter Radford University	8VAC20-23-190. Professional studies requirements.	I am opposed to the Virginia Department of Education's proposal to eliminate the title of Foundations of Education from one of the professional studies requirements in the teacher licensure regulations and rename the requirement "The Teaching Profession." While this may seem like a trivial change, I believe that it is actually a very significant and detrimental change. Foundations of Education has been a requirement in Virginia for at least the last 30 years and the content of such courses is still called for, even in the proposed regulation change. In the proposed regulation change, the title of the course changes from Foundations of Education to The Teaching Profession, yet the content of the course remains essentially the same. The proposed regulation appears below: The Teaching Profession. Skills in this area shall be designed to develop an understanding of the historical, philosophical, and sociological foundations underlying the role, development and organization of public education in the United States. Attention must be given to the legal status of teachers and students, including federal and state laws and regulations, school as an organization/culture, and contemporary issues and current trends in education, including the impact of technology on education. Local, state, and federal governance of schools, including the roles of teachers and schools in communities must be included. Professionalism and ethical standards, as well as personal integrity must be addressed. Knowledge and understanding of Virginia's Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers must be included. The Foundations of Education field deals directly with teaching students not only the historical, philosophical, and sociological Foundations of education, but also with what it means to be an ethical professional of education who has examined issues of personal integrity, especially as related to how one successfully remains in the teaching field and how one equitably serves and understands our increasingly diverse student population (the field of multicultural education is a sub-field of the Foundations of Education). *In essence, the Foundations of Education courses*	

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Sandra Schneider Barry Morrison, Pulaski County Schools Teresa Coffman, University of Mary Washington College of Education Linda Bol, Old Dominion University Ashley Riedell, Radford University		*around the state are already doing what the new regulations seem to want, thus why change the name?* This proposed change from "Foundations of Education" to "The Teaching Profession" will needlessly cut the course off from the discipline/field of Social Foundations of Education – a distinct field of study with graduate programs across the nation (e.g. University of Virginia; University of North Carolina Greensboro; University of South Carolina; and the University of Michigan to name a few). The faculty who teach these courses have had specific training in the Foundations fields, and if the name is changed in the new regulations, we worry that this particular professional studies requirement may not end up being taught by the faculty best prepared to do the course justice. Foundations of Education coursework provides a unique and critically important component of teacher education, bringing perspective and meaning to the task of teaching and fostering consideration of the role of public schools in our democracy. Study in Foundations of Education plays a key role in the development of reflective, thoroughly professional, and ultimately effective teachers for the Commonwealth because it places day-to-day classroom practice within wider contexts, providing time and space for consideration of such activities in light of the overall aims of education; such as education's role in supporting freedom of thought, social fairness, care for others, democratic self-government; and the role of schooling in students' and teachers' assumptions, beliefs, and attitudes surrounding diverse communities. In other words, Foundations of Education's focus on the "whys" of education—from societal goals to cultural and social trends affecting all aspects of education—are critical to effective implementation of the "hows" of classroom practice. Historically, Virginia has served as a point of origin for many of the realizations of the crucial role education plays in our democratic society and Foundations of Education study serves to help Virginia's teachers continue to understand, appreciate, and maintain these connections. I hereby petition the Virginia Department of Education to return the title Foundations of Education to its list of prescribed professional studies courses. Foundations of Education scholars will thus be ensured a place in continuing to equip Virginia's teachers not only with the practical methods and techniques needed to be successful, but also with the frameworks to understand how, when, and why to apply those tools in light of the broader contexts of education.	
Aida Manning Sidney Green Barry Morrison Taylor Magda Alexa Fox Carmel Vaccare	8VAC20-23-190. Professional studies requirements.	An online petition was created and can accessed at the following Web site: https://www.change.org/p/virginia-department-of-education-retain-the-foundations-of-education-title-in-virginia-teacher-preparation-regulations?recruiter=406290682&utm_source=share_petition&utm_medium=facebook&utm_campaign=share_facebook_responsive&utm_term=des-lg-share_for_starters-no_msg	

8VAC20-23 *Licensure Regulations for School Personnel*
Public Comment Summary

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Courtney Cavendish Matthew Akers Cheri Morton Kim Gerette Cynthia Stinnette Laura Rowlett Emily Treadway Megha Behl Kalley Thompson Cody Jones Nicole Hancock Annie Blackburn Abby Thomas Martin De Anda Amanda Shrewsberry Brenda Tyler Laura Noll Wendy Burcham Charles Brady Rebecca Philips Susie Loeffler Taylor Downey Shawn Sthreshley Maike Philipsen Heather Nunnally David Naff Marta Montiel Jordan Smith Deborah Marks Teri Johnson Micol Hutchison Melanie Buffington Lara Coggin Donald Belt Lawrence Golonka Lianna Moss-Everhart Bill Muth Colleen Connolly Kurt Stemhagen Aaron Garber Susan Watson Elisabeth Rigsby Gabriel Reich Kathleen Daly Tamara Sober		**Petition**: The Virginia Department of Education has proposed to eliminate the title of Foundations of Education from one of the professional studies requirements in the teacher licensure regulations and rename the requirement "The Teaching Profession." While this may seem like a trivial change, we, the undersigned, believe that it is actually a very significant and detrimental change. Foundations of Education has been a requirement in Virginia for at least the last 30 years and the content of such courses is still called for, even in the proposed regulation change. In the proposed regulation change, the title of the course changes from Foundations of Education to The Teaching Profession, yet the content of the course remains essentially the same. The proposed regulation appears below: • **5. The teaching profession. Skills in this area shall be designed to develop an understanding of the historical, philosophical, and sociological foundations underlying the role, development and organization of public education in the United States. Attention must be given to the legal status of teachers and students, including federal and state laws and regulations, school as an organization/culture, and contemporary issues and current trends in education, including the impact of technology on education. Local, state, and federal governance of schools, including the roles of teachers and schools in communities must be included. Professionalism and ethical standards, as well as personal integrity must be addressed. Knowledge and understanding of Virginia's Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers must be included.** The Foundations of Education field deals directly with teaching students not only the **historical, philosophical, and sociological Foundations of education,** but also with what it means to be an **ethical professional** of education who has examined issues of **personal integrity**, especially as related to how one successfully remains in the teaching field and how one equitably serves and understands our increasingly diverse student population (the field of multicultural education is a sub-field of the Foundations of Education). ***In essence, the Foundations of Education courses around the state are already doing what the new regulations seem to want, thus why change the name?*** This proposed change from "Foundations of Education" to "The Teaching Profession" will needlessly cut the course off from the discipline/field of Social Foundations of Education – a distinct field of study with graduate programs across the nation (e.g. University of Virginia; Virginia Tech; University of North Carolina Greensboro; University of South Carolina; and the University of Michigan to name a few).	

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Antonio Espinoza Aubrey Duke Michael Broda John Broome Kathleen Cauley Shannon Huff Christine Taylor Teresa Coffman Jocelina Santos Molly Allen Krista Johnston Andrew Gilbert Jordyn Jones Stephanie Wasta		The faculty who teach these courses have had specific training in the Foundations fields, and if the name is changed in the new regulations, we worry that this particular professional studies requirement may not end up being taught by the faculty best prepared to do the course justice. Foundations of Education coursework provides a unique and critically important component of teacher education, bringing perspective and meaning to the task of teaching and fostering consideration of the role of public schools in our democracy. Study in Foundations of Education plays a key role in the development of reflective, thoroughly professional, and ultimately effective teachers for the Commonwealth because it places day-to-day classroom practice within wider contexts, providing time and space for consideration of such activities in light of the overall aims of education; such as education's role in supporting freedom of thought, social fairness, care for others, democratic self-government; and the role of schooling in students' and teachers' assumptions, beliefs, and attitudes surrounding diverse communities. In other words, Foundations of Education's focus on the "whys" of education—from societal goals to cultural and social trends affecting all aspects of education—are critical to effective implementation of the "hows" of classroom practice. Historically, Virginia has served as a point of origin for many of the realizations of the crucial role education plays in our democratic society and Foundations of Education study serves to help Virginia's teachers continue to understand, appreciate, and maintain these connections. We, the undersigned, hereby petition the Virginia Department of Education to return the title Foundations of Education to its list of prescribed professional studies courses. Foundations of Education scholars will thus be ensured a place in continuing to equip Virginia's teachers not only with the practical methods and techniques needed to be successful, but also with the frameworks to understand how, when, and why to apply those tools in light of the broader contexts of education.	
Cate S.	8VAC20-23-190. Professional studies requirements.	The Foundations of Education field deals directly with teaching students not only the historical, philosophical, and sociological Foundations of Education, but also with what it means to be an ethical professional of education who has examined issues of personal integrity, especially as related to how one successfully remains in the teaching field and how one equitably serves and understands our increasingly diverse student population (the field of multicultural education is a sub-field of the Foundations of Education). *In essence, the Foundations of Education courses around the state are already doing what the new regulations seem to want, thus why change the name?* This proposed change from "Foundations of Education" to "The Teaching Profession" will needlessly cut the course off from the discipline/field of Social Foundations of Education – a distinct field of study with graduate programs across the nation.	
Harvey Klamm,	8VAC20-23-190.	I ask that you keep the current foundations course requirement. I have worked in the	

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Liberty University	Professional studies requirements.	field of education in Virginia for 43 years. During that time, I have observed a growing pragmatic desire within education to reflect less on the foundations of why schools function as they do, in preference to just preparing to teachers pedagogically. To decrease the amount of time focused on the philosophical, theoretical, and historical aspects of the foundations of education, from a full course to an element within a course as advocated in this change, will significantly impact teacher preparation by minimizing understandings of the roots of education that are fundamental to the thrust and values within pedagogy. May we not sacrifice the teaching of who we are and how we came to be as schools and as teachers for the sake of streamlining regulations that will dilute the actual preparation of our next generation of professionals?	
Emily Treadway, Radford University	8VAC20-23-190. Professional studies requirements.	The Foundations of Education field deals directly with teaching students not only the historical, philosophical, and sociological Foundations of education, but also with what it means to be an ethical professional of Education who has examined issues of personal integrity, especially as related to how one successfully remains in the teaching field and how one equitably serves and understands our increasingly diverse student population (the field of multicultural education is a sub-field of the Foundations of Education). In essence, the Foundations of Education courses around the state are already doing what the new regulations seem to want, thus why change the name?	
Audra Parker, George Mason University	8VAC20-23-190. Professional studies requirements.	I am writing in response to the proposed changes to the Initial Teacher Licensure Regulations for elementary educators. As program coordinator and an instructor for the current required course (Foundations of Education), I would like to encourage the Board to consider keeping the focus on social/political/economic/cultural contexts of education as a requirement for preservice teachers. I teach this course fairly regularly at Mason in our introductory semester, and I find that exploring with these topics allows preservice teachers to unpack their preconceived notions of schooling and to grapple with the idea that not all students experience school in the same way that they did. Their learning curve in this course is tremendous, and their openness to understanding how diverse learners school experiences vary across contexts. This is particularly important as our population continues to become more diverse and as our students attain teaching positions in the vastly different areas of Virginia. Similarly, I would also encourage the Board to reconsider removing the Social Studies Methods course requirements from elementary teacher preparation. Social Studies is a critical content area that is often the center of opportunities for content integration--a key instructional approach in elementary schools and one that is supported by a wealth of research in elementary student learning.	
Kristan Morrison, Radford University	8VAC20-23-130. Professional studies requirements. and 8VAC20-23-190. Professional studies requirements.	I am writing to express my concerns with some changes proposed in the Teacher Licensure Regulations for the Commonwealth of Virginia. Specifically, my concerns are in these areas: 8VAC20-23-130. Professional studies requirements. Item 5 8VAC20-23-190. Professional studies requirements. Item 4 In essence, the changes proposed in these sections seem to be doing four things:	

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		1. Removing the title "Foundations of Education" and replacing it with "The Teaching Profession." 2. Moving the assessment content out of the foundations course into a separate course. 3. Explicitly adding in content on professionalism, ethical standards, and personal integrity. 4. Adding in content on Virginia's Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers. While I certainly agree with item number 2 above, that the assessment content is important enough to be moved out and made a professional studies requirement of its own, I do have some strong concerns about item 1. My primary concern rests with changing the title of the professional studies requirement of "Foundations of Education" to "The Teaching Profession." While it might seem minor, such a title change represents something very significant to the field of educational foundations. Perhaps the writers of the proposed regulations are unaware that there is a field called the Foundations of Education (also referred to as the Social Foundations of Education), which is served, among others, by a national organization called the Council for Social Foundations of Education (CFSE). The CFSE has developed a set of professional standards purposed with informing state regulatory agencies on initial teacher certification requirements in the field of the foundations of education (http://csfeonline.org/about/csfe-standards/). Removing the wording of "Foundations of Education" from the professional studies requirement in the licensure regulations would, in effect, divorce this professional studies area from its disciplinary mooring. All professional studies requirements for licensure should be linked to an academic field/area because there is a need for a united professional voice to help articulate what happens in this course (especially when it concerns such a broad statement as "the historical, philosophical, and sociological foundations of education"). How the Commonwealth of Virginia titles a professional studies requirement (regardless of how an IHE ultimately titles the course) is important. By using the title "Foundations of Education," the Commonwealth is affirming the value of a particular professional field as well as helping an IHE understand who has the expertise to teach such courses (e.g. people who have graduated from PhD programs specializing in the Foundations of Education). *The state regulations regarding teaching licensure are legal documents, and thus semantics DO matter.* Additionally, as relates to items 3 and 4 in the listing above, the disconnection of "Foundations of Education" as a title seems inconsistent with the wording that follows the title change in the proposed regulations. The Foundations of Education field deals directly with teaching students not only the historical, philosophical, and	

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		sociological foundations of education, but also with what it means to be an ethical professional of education who has examined issues of personal integrity, especially as related to how one successfully remains in the teaching field and how one equitably serves and understands our increasingly diverse student population (the field of multicultural education is a sub-field of the foundations of education). In essence, the foundations of education courses around the state are already doing what the new regulations seem, on the surface, to want. Based on the fact above that the Foundations of Education is already doing what the proposed regulations seek for "The Teaching Profession" course to do, and that foundations scholars are the best equipped to carry out this mission, I assume that the proposed change to the title is merely a case of the writers of the regulation changes not fully understanding that the terminology "Foundations of Education" is referencing a particular academic field/focus. I hope that my explanations above have illustrated how the term "Foundations of Education" is important, that such referencing determines how a university teacher preparation program best plans this course and finds qualified individuals to teach it, and thus needs to remain in the regulations.	
Fred Orelove Mary Ellen Huennekens Elizabeth Marlowe Jacklyn Lewis Stephanie Fitzgerald Molly Dellinger-Wray, VCU Partnership for People with Disabilities Kathleen Lynch, VCU Donn Dockery, VCU	8VAC20-23-130. Professional studies requirements. and 8VAC20-23-190. Professional studies requirements.	Because childhood trauma is so pervasive and interferes with learning, and because new teachers receive only minimal information on this topic, I strongly recommend strengthening these requirements in the regulations. Specifically, I suggest the following language be added: Sec. 8VAC20-23-130(1) and Sec. 8VAC20-23-190(1): Following the words "substance abuse" and before the words "family disruptions," add "trauma, including child abuse and neglect and other adverse childhood experiences." Sec. 8VAC20-23-130(3) and Sec. 8VAC20-23-190(5): Add a sentence at the end of the paragraph as follows: "Approaches must also take into account the impact of trauma on the student, including child abuse and neglect and other adverse childhood experiences."	The text was revised to include, "trauma, including child abuse and neglect and other adverse childhood experiences."
Deborah Speece	8VAC20-23-130. Professional studies requirements.	I would like to add my voice to those who are calling for stronger licensure requirements concerning childhood trauma. Teachers are often the first line of protection for child victims. They must know how to recognize the signs and how to respond.	
Denise Powers	8VAC20-23-130. Professional studies requirements. and 8VAC20-23-190. Professional studies requirements.	Childhood trauma knows no SES or other boundaries. It impacts brain development, behaviors and learning, and much more. Yet, preparing educators and education personnel receive only minimal information on this topic, It is essential that we strengthen these requirements in the regulations. Specifically, the following language should be added: Sec. 8VAC20-23-130(1) and Sec. 8VAC20-23-190(1): Following the words "substance abuse" and before the words "family disruptions," add "trauma, including child abuse and neglect and other adverse childhood experiences."	

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		Sec. 8VAC20-23-130(3) and Sec. 8VAC20-23-190(5): Add a sentence at the end of the paragraph as follows: "Approaches must also take into account the impact of trauma on the student and the learning environment."	
Wayne Barry	8VAC20-23-130. Professional studies requirements. and 8VAC20-23-190. Professional studies requirements.	Lastly, recent additions to requirements for first-year teachers to enter the classroom have included training in detecting and reporting suspected child abuse. With the undetected mental health needs of children in schools coming to our attention with increasing and unwelcome frequency, I would like to suggest that the Virginia Board of Education look for ways to ensure that teachers and administrators be expected (through regulation) to receive training in the MANDT method of de-escalating child upheaval, and training in the basics of Mental Health First Aid, before they are assigned to a classroom in any school building.	The requirement that individuals must complete training or certification in emergency first aid, CPR, and the use of an AED is a statutory requirement.
Robert N. Corley III, Ph.D., Virginia State University	8VAC20-23-130. Professional studies requirements. and 8VAC20-23-190. Professional studies requirements.	Professional studies requirements for adult education, preK-12 endorsements, and secondary grades 6-12 endorsements: 18 semester hours. Professional studies requirements for special education: 21 semester hours. These requirements may be taught in integrated coursework or modules. Add the following: Professional studies coursework and methodology, including field experiences shall be designed for completion within a baccalaureate or graduate degree program. Rationale: Programs may be offered at both undergraduate and graduate levels of study.	This comment addresses approved programs. Colleges and universities must address competencies within professional studies requirements.
Goochland County Public Schools	8VAC20-23-280. Career and technical education – trade and industrial education	Please take a look at the technical professional license for Building Trades. It is not feasible to find a person with the number of hours in electricity, plumbing, HVAC, and carpentry. We would like to see a specialty in any one of these areas count toward licensure. Literally, no person has all four. Also, please consider a longer time period for completing the three required courses. Since many of these professionals do not even have a college degree, taking three courses is a hardship in an area that is already difficult to recruit. Frankly, we would like to see the option in CTE (and JROTC) to hire these individuals based on their experience expertise and require divisions to train them in Human Growth and Development, Curriculum, Discipline, and Technology. We feel that CTE and JROTC licenses would be easier to recruit if we provided these skills in training rather than a required course paid by the teacher without flexible scheduling options.	The requirements for Building Trades are not specifically listed in the regulations. Virginia statute allows the issuance of a provisional license for three years. During that time period, three courses are required. A division superintendent may submit an alternate plan for approval to meet the professional studies requirements.
Chris Dovi, CodeVA	8VAC20-23-300. Computer science.	CodeVA, the state's primary organization advocating for and providing training to Computer Science teachers, has deep concerns about the proposed licensure for computer science as it may affect current veteran teachers teaching Computer Science. Many of those current CS teachers are Math endorsed; that endorsement status is what the state has indicated this regulatory change seeks to "fix." As the proposed regulatory change currently reads, there is no provision allowing those CS teachers	The proposed regulations offer the computer science endorsement. The proposed regulations do not recommend that teachers currently endorsed in mathematics may no longer teach computer science.

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		to continue teaching the course if they lack either the primary or add-on CS endorsement. Also not addressed is whether a teacher offering the course one year, but whose class lacks sufficient enrollment during the following year would be able to then teach the class in the third year, should it then have sufficient student enrollment. This omission is in spite of the reality that these are highly qualified teachers (some have been a part of the College Board's process of development for the new AP CS Principles course), and represent the front line for the state's efforts to graduate CS-literate students at a time when Computer Science jobs are growing at a rate that is four times the national average. Virginia is currently 7th in the nation for AP Computer Science A test takers. Based on these students' exemplary test scores, these current Math-endorsed teachers clearly are qualified to teach Computer Science. The list of teachers whose current endorsement would no longer allow them to teach the course includes two current AP CS A readers, an elite designation from College Board that entrusts these teachers with being part of the small international team that grades all AP CS A tests. Unlike other foundational subject areas like math or English, this course represents the only standardized Computer Science course in the state - there are only a handful of districts able to offer standard-level CS courses for want of teachers, or for reasons related to how CS currently can count as an elective course. This means that Virginia is FAR from producing enough students possessing the requisite CS literacy skills needed to fill a digital jobs gap in the state that is fast growing. The current AP stats show fewer than 2,500 students took the exam in 2014. Meanwhile, the CS jobs gap is widening fast; nearly 35,000 jobs currently, with a projected 70,000 jobs in just a few years, according to the State. CodeVA voiced its concerns directly to State DOE representatives early in this process. We see no changes to address this clear concern that could have the unintended effect of doing untold damage to the State's current high school Computer Science capacity.	
Michael Starsman, Virginia Wesleyan College	8VAC20-23-300. Computer science.	I am a 2007 graduate of Hickory High School, and a product of the Chesapeake Public School's initiative to provide Chesapeake students with a technical and practical understanding of the technologies and mechanisms that drive the and influence the everyday American. As a high school senior in 2006, I enrolled in a class listed as an elective by CPS. I expected the course to "probably" be useful in college, and in all likelihood, an easier A than Trigonometry, which my Dad was pushing for. Unfortunately for me, the course turned out to be much more technical and challenging than I had hoped for. However, I was encouraged and pushed to pursue the subjects we studied: Photography and Film Development, Photoshop, and Professionally Using	

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		Microsoft Office, a skill universally used today. The class provided an interesting dynamic; plenty of radically new subjects for us to grasp, coupled with the time to explore the subjects for ourselves. The class was encouraged to learn a program or technique, and then to create with it. Retrospectively, this flexibility and push into these new frontiers brought on a new idea of its own. I was, from the first beginning, to learn at my own will, exploring and growing my base through the course structure. As I transitioned into college, I felt drastically more prepared than my classmates. I even began teaching people Photoshop and revising PowerPoint presentations my Fall semester. I present to you only one idea I wish for you to consider. I transitioned from using these programs to teaching these subjects independently, but I learned them first in the Chesapeake Public School system. Because they offered a course that was auxiliary, I was introduced to a more technological world that awaited me beyond Hickory, and it hasn't slowed down yet. The class taught propelled us to a different echelon of understanding to the technologies that phase in and out of our fast-paced culture. As the world continues to become a more technology-oriented and digital society, we must continue to provide students with the outlets necessary to grip the world a little bit stronger upon graduation from high school. If it happened for me, someone who looked for an easy course to skip out on Trigonometry, it can certainly happen to another person whose story has yet to be written.	
Bruce Watson, Director of Career and Technical Education	8VAC20-23-330. Engineering.	I'm speaking in opposition to the proposed Engineering endorsement regulation. In many of our elementary schools, students are exposed to Children's Engineering programs where they "engineer" solutions to real-world problems and design challenges given to them by their teacher. This program is not designed to make every child an engineer, but to expose them to design process, problem-solving, creating thinking, analysis, and STEM activities. As students matriculate to secondary schools, they have an opportunity to expand on the engineering principles they have learned in an elementary school as they participate in middle school technology education courses that we refer to as "pre-engineering" in nature. As students move to high school, their course choices greatly increase in the core subjects as well as in CTE courses. Certainly, one valid way to look at the purpose of secondary education focuses on two major points: 1. To expose students to as many different experiences as possible, including co-curricular or extra-curricular learning, and 2. To help students find their passion for learning and possible post-secondary and career choices.	The endorsement in "engineering" is recommended to be established. The engineering endorsement is another pathway for individuals to become licensed and endorsed to teach engineering courses. Individuals holding valid Virginia teaching licenses with an endorsement in technology education may teach engineering courses.

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		It is not the responsibility of secondary education to ensure that students graduate with a marketable skill. To that point, secondary engineering teachers are not expected or required to create professional engineers, but to foster a student's interest in engineering through the secondary courses, some of which may be dual-credit, and to guide each student to appropriate post-secondary education opportunities offered at our 2 and 4 year universities. According to Dr. James Lane, Superintendent of Goochland Schools: "Goochland County Public Schools are currently offering at least two engineering courses taught by current Career and Technical Education teachers; at least one of them is a dual enrollment course being offered through James Madison University. The purpose of these classes is to help expose students to engineering, while at the same time providing the necessary pre-requisite engineering courses. The Commonwealth of Virginia, by offering an engineering teaching endorsement, could potentially create a problem in that most Engineering teachers also teach other courses. Whereas we have an excellent Engineering program now, we could not sustain a full time teacher without having them teach other courses. We would be comfortable if the Technology Education endorsement could also continue to teach engineering." To place additional requirements on school divisions, particularly small school divisions would create monetary and logistical challenges that would be difficult or impossible to overcome and ultimately may bring the demise of some engineering courses. In summary, I reiterate that we do not need another engineering program, but rather, consideration of increased funding for further staff development for our Technology Education teachers and for renovation and updating of our engineering labs to reflect 21st century technologies.	
Valdis Edward Ozols, Technology and Engineering Teacher	8VAC20-23-330. Engineering.	I am a Technology and Engineering Education teacher at Bath County High School. I teach classes in programming and technical drawing, In addition, I sponsor the First Tech Challenge Robotics Team and the KidWind wind generation team. As a Virginia K-12 educator for the past 8 years, I am writing to express my deep concern regarding proposed changes to the *Regulations Governing the Review and Approval of Education Programs* in Virginia. Specifically, my concerns target the proposed regulation, Engineering as a new program of study and 8VAC20-23-330, the addition of an engineering teaching license. If passed, this will affect the current high school pre-engineering programs and teachers. One significant issue in attracting CTE teachers in Virginia is the low rate of pay compared to private industry. Having a separate engineering program will eliminate classes for some students. Virginia led the nation in 1988 in developing the first high school engineering courses within the subject area of Technology Education, and later incorporated nationally recognized engineering courses developed by Project Lead The Way (PLTW) that align with post-secondary engineering programs. As a result the	

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		Virginia Technology Education programs have produced students who successfully completed post-secondary 4-year Engineering programs not only through Virginia universities, but others across our nation. The Technology Education curriculum is nationally recognized by the NSF, NASA, NAE, and other credible organizations as addressing the K-12 technology and engineering content and practices. My associations and their members have advocated for STEM partnerships for many decades. At the K-12 level in Virginia that partnership was specified in 2011 with the passing of Senate Joint Resolution 308, which established a shared responsibility among the existing science, technology, and mathematics subjects. Rationale for NOT endorsing a new engineering program includes the following: 1. As submitted to the Virginia DOE in 2013 the proposed revisions to the Virginia Technology Education Regulations infuses engineering in a manner that aligns with the ITEEA national Standards for Technological Literacy and the National Assessment of Educational Progress (NAEP) for Technology and Engineering Literacy. 2. K-12 engineering education nationally, and in Virginia, is focused on the engineering design process, as specified by the American Society of Engineering Education (ASEE), ITEEA, and the Next Generation Science Standards. 3. Technology Education is an approved subject area in Virginia K-12 education that teaches the engineering design process. 4. Engineering courses, including Project Lead the Way, are currently taught in Technology Education. 5. I ask that the infrastructure for STEM education, inclusive of program regulations, funding, and professional development, remain directed at the existing science, technology, and mathematics education programs in Virginia.	
Brock Relyea, Prince William County Schools / Region IV	8VAC20-23-330. Engineering.	In regard to the proposed creation of a new Engineering endorsement, PWCS does not support this amendment. We believe that teachers that have a Technology Education endorsement are prepared to teach engineering courses and to support this, our school division provides additional engineering training through Project Lead the Way. We do not see the addition of an Engineering endorsement as a benefit for students.	
Mark Ginsberg Ellen Rodgers; George Mason University	8VAC20-23-330. Engineering.	8VAC20-23-330 General support for this proposal.	

8VAC20-23 *Licensure Regulations for School Personnel*
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Dr. Karen Garza, Fairfax County Public Schools	8VAC20-23-330. Engineering.	We currently have a critical need for technology and engineering education teachers. However, we are very concerned that the approval of the stand-alone Engineering endorsement would only serve to create a new critical need area, particularly if it precluded technology education teachers from teaching engineering at the secondary level. The proposed Engineering endorsement appears to duplicate content that has long been covered and continues to be a part of technology education. It is our understanding that the proposed endorsement was developed without the inclusion of Virginia's technology and engineering education professionals. This only perpetuates a "silo" approach to STEM education and runs counter to the sentiments of SJR308 (2011) that specified engineering education within Virginia is the shared responsibility of science, technology, and mathematics.	
Debra Shapiro, VA Technology & Engineering Education Association President	8VAC20-23-330. Engineering.	I am writing in regards to the proposed Engineering endorsement. As a Technology and Engineering teacher for 29 years I am able to teach all of the material for each of our courses including those that are engineering. My degree not only included all of the "Technology Education" requirements but also included Physics, Chemistry, Algebra, Geometry, Trigonometry, and Calculus. For someone to say that I do not have the understanding of those courses is absurd. I have also taken some engineering courses in my college career as I thought that may be the career path in which I was heading. Experience taught me differently. In my years as an educator I have had the opportunity to complete internships at NASA, shadow workers in various fields including engineering, and attend workshops to update my skills and knowledge. Every one of us with a license in Technology Education completes course work and/or professional development to renew our license every five years. I guarantee many of those folks are taking classes to improve their skills and knowledge in the courses they are teaching, including engineering. The Virginia Technology and Engineering Education Association offers staff development for all Technology and Engineering educators as does the International Technology and Engineering Educators Association. I have worked as a drafter in an engineering firm and was required to do all of the calculations and design that our engineers performed. Yes, they checked behind me, I was rarely wrong. I had the knowledge base to perform these tasks. Many of our Technology and Engineering educators have come from industry. They have the ability to teach as they earned their degree in Technology Education or went through a Career Switcher Program where they learned pedagogy. This same opportunity is available to all of the engineers that have a desire to teach engineering in Technology and Engineering education. One does not need to be an engineer to teach engineering just as one does not need to be a chemist to teach chemistry. As Technology and Engineering educators we do not teach "Trades" that is part of the Trade and Industrial program. This seems to be a misconception with the engineers that desire new licensure. Yes, we can build, weld, operate machinery, work on computers and cars, etc. Many of those programs are housed in Career and	

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		Technical Centers with in our school systems but not at our schools. Technology and Engineering Education is not a training ground for trades or any career. Technology and Engineering Education is an opportunity for students to explore Technology and Engineering. My main concern in all of this is the fact that we have a shortage of Technology Education teachers. If an Engineering endorsement is going to be required to teach an engineering course you are going to further reduce the pool of teachers. I lost one of my student teachers to engineering a few years ago. He had a Technology Education degree. He has become a successful engineer. If we are losing Technology and Engineering educators to engineering due to the financial benefits, how many engineers are going to want to teach for half of the salary they would make as an engineer? Finally, our high schools are not the training grounds for any career. Careers are created in trade schools, colleges, and universities. Our high school students are exposed to enough engineering (and other career clusters) to decide if they are interested in the field. If the interest exists, those students will choose to go to college and complete a degree in engineering. The smartest thing would be for the Engineers and Technology and Engineering educators to team up, work together and give the students the best of all of STEM.	
Greg Pearson, Senior Program Officer National Academy of Engineering	8VAC20-23-330. Engineering.	The Board is to be applauded for recognizing the importance of engineering education at the K-12 level. The National Academies, among other groups, have been following the evolution of more integrated forms of pre-college STEM education for many years, and the role of engineering in these efforts is significant. (See, for example, the 2014 report, STEM Integration in K-12 Education, and the 2009 report, Engineering in K-12 Education). Engineering, through the engineering design process, provides application opportunities for math and science that are often missing in traditional instruction in these subjects. Its focus on concrete, real-world problem solving also has the potential to increase student motivation to learn. As the Board is aware, the field of technology education has had a major role in early efforts to introduce engineering to the K-12 classroom, starting with the 2000 publication of the Standards for Technological Literary, which devote considerable attention to engineering. The standards have informed technology education teacher training programs as well as the development of some of the most successful engineering curriculum projects in the country, such as Engineering is Elementary (Museum of Science, Boston), the Engineering by Design Program (International Technology and Engineering Educators Association [ITEEA]), and coursework offered by Project Lead the Way. As the Board also knows, the recently published Next Generation Science Standards put new demands on K-12 science teachers to incorporate engineering practices alongside those for science, and the College Board is in the early stages of	

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		designing an AP Engineering course. These developments, combined with the general uptick in more integrated forms of STEM education, suggest a growing demand for teachers familiar with engineering. While there is no formal consensus on the exact skills and knowledge teachers need to effectively deliver engineering in the K-12 classroom, experience to date suggests a degree in engineering is not necessary. This is not to suggest that K-12 education would not benefit by having more individuals with engineering background involved in teaching. However, at the current time, the bulk of those teaching engineering coursework in K-12 have training in technology education or science. There are efforts, such as the UTeach Engineering program in Texas, that are encouraging newly minted engineering grads to go into teaching. But these initiatives are producing teachers certified to teach K-12 science and math, not engineering, per se. The pathways to a teaching career in K-12 engineering are not well mapped out, as this is still an evolving landscape. Whatever actions the board ultimately takes on this issue, I would hope that it does not inadvertently weaken the role of the technology education community in providing engineering experiences to K-12 students in the state.	
Michael E. Evans, Hampton City Schools	8VAC20-23-330. Engineering.	I am an electrical engineer. I entered the teaching profession after 20 years of commissioned service with the USAF. I have a master's degree in education and have been teaching now for 13 years. I am currently certified in Secondary Math, Physics and Technology Education as well as a National Board Certified Secondary Math Teacher. I am in favor of a separate certification for high school teachers teaching engineering courses. I believe the proposal put forth in (8VAC20-23-330) provides a sound framework to ensure students receive consistent engineering instruction. The pathways outlined provide non-engineer degree holders adequate options to obtain an engineering teaching certification. Likewise engineers should be encouraged to enter the teaching field without impractical licensure requirements in order to shoehorn them into a certification which they may not be in fact instructing. We demand/expect all other subject matter teachers to have a litany of college level courses in field in order to become certified, the same should be true for those teaching engineering courses.	
Jesse W. White, Retired Educator	8VAC20-23-330. Engineering.	I am a proponent of STEM learning for all children. I have worked with the Virginia STEM Learning Network, the STEM Innovation Network, and have brought a Governor's STEM Academy to your attention in addition to my job. When I think of the collaboration that can and should occur among the many disciplines that make up our education system, I feel confident in your leadership and ability to make the right decisions. As a Technology teacher and Career and Technical Education Director in Hampton, I advocated that all children, whether first generation STEM learners, children from environmentally challenged homes, or Governor's School candidates should learn STEM and seek to improve not only their economy, but to contribute to local, regional, and the Virginia economy. I ask	

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		that you direct the parties involved in this proposed endorsement to work together to improve the system that has been developing, improving, and providing good results for almost 30 years. I have witnessed proponents of this endorsement heckle K-12 teachers in public and at conferences and conventions, saying "That is not engineering." This finger shaking is the epitome of the ills that plague public education; those who lack the research and practice attempt to shame good teachers into submission rather than collaborate. Children must learn at developmentally appropriate levels. Engineers are created at the post-secondary level. It is up to K-12 educators to get them there. Virginia has quite a number of STEM and particularly good Technology and Engineering programs. This current proposed endorsement ignores this work and the people who brought engineering to Virginia as far back as the 1980's. Dr. Cannaday, as the Superintendent in Hampton, you saw the work of Robert Johnson and others develop the Center for High Technology. Today, that is a Project Lead the Way program and a Robotics program taught by engineers who are Technology teachers. Their students have won engineering awards. In close, I hope that Virginia continues with its current K-12 engineering system, based in good research and practice that works for all children, and allow improvement rather than replacement. As engineering changes in the next century, the purposes of creating a STEM literate society are the same and collaboration among its disciplines is the key. While there may be a prima facie logic to creating a new endorsement, history proves that education reform without due process or research leads to faulty logic and less student ability. Please do not allow this endorsement to continue as submitted.	
Philip A. Reed, The Program Coordinator for a Virginia Approved, Nationally Accredited Technology Teacher Preparation Program at a STEM Intensive Research University	8VAC20-23-330. Engineering.	I am the program coordinator for a Virginia approved, nationally accredited Technology teacher preparation program at a STEM intensive research university. I initially spoke to the Board of Education (BOE) and the Advisory Board on Teacher Education and Licensure (ABTEL) in 2014 regarding key clarifications of K-12 technology and engineering education at the state and national levels. The documents I cited form the foundation for Virginia's technology education program and include: • Garmire, E. & Pearson, G. (Editors). (2006). *Tech Tally: Approaches to Assessing Technological Literacy*. Washington, D.C.: National Academies Press. http://www.nap.edu • International Technology & Engineering Educators Association (ITEEA). (2000,2002,2007). *Standards for Technological Literacy: Content for the Study of Technology*. Reston, Virginia: Author. http://www.iteea.org • Katehi, L., Pearson, G., & Feder, M. (Editors). (2009). *Engineering in K-12 Education: Understanding the Status and Improving the Prospects*. Washington, D.C.: National Academies Press. http://www.nap.edu • National Academy of Engineering. (2010). *Standards for K-12*	

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		Engineering Education? Washington, DC: National Academies Press. http://www.nap.edu • Pearson, G. & Young, A. T. (Editors). (2002). *Technically Speaking: Why all Americans Need to Know more about Technology*. Washington, DC: National Academies Press. http://www.nap.edu Technology education program information on the Virginia Department of Education's website: (http://www.doe.virginia.gov/instruction/career_technical/technology/index.shtml) as well as the Virginia CTE Resource Center website (http://cteresource.org/about/) demonstrate that the program is aligned to national trends in K-12 technology and engineering education. In fact, some states (e.g. Missouri) and professional organizations (e.g. ITEEA, CTETE, VTEEA) use the term *technology and engineering education*. A separate engineering education program in Virginia is not needed because the Virginia model covers technology and engineering education… but the name has not been changed to reflect this. There are additional issues and confounding questions with the proposed engineering program in the *Regulations Governing the Review and Approval of Education Programs in Virginia* [8VAC20-42]. If the goal of the proposed engineering program is to get more students to enter engineering then, by definition, that is career and technical education. Such a program already exists in technology education and engineers already have a pathway to Virginia licensure through technology education (see 8VAC20-23-270. Career and technical education - technology education). Engineering (especially engineering design as outlined in *Standards for Technological Literacy* and the *Next Generation Science Standards*) is an integral part of Virginia's technology education program. The technology education program in Virginia is improved through existing channels such as the curriculum revision schedule and DACUM panels used annually by the Department of Education's Office of Career and Technical Education. These processes involve engineers and other professionals. Engineers wishing to improve the technology and engineering education program in Virginia should collaborate with the VTEEA and the Department of Education's Office of Career and Technical Education rather than propose a full program duplication through back doors. If the new engineering program regulations are approved, will the state start fracturing all programs by specific professions?	
Jeremy Aldrich, Harrisonburg City Public Schools	8VAC20-23-330. Engineering.	The new Engineering endorsement may be helpful to us as well, so long as it is in addition to, and not in place of, the Technology Education endorsement. We have been fortunate to have some wonderful Technology Education teachers who are also good Engineering teachers; the new regulation should not take options away from them when endorsements are matched with courses to determine highly qualified teacher status.	
Donald Williams, P.E., Former Engineer and Current CTE Teacher at	8VAC20-23-330. Engineering.	Engineering is a separate subject. It is NOT science, math or even technology. We have a wide assortment of technology education courses for those students who are interested in the broad study of technology. Many of these serve the purpose of	

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Phoebus High School Hampton, Virginia		teaching technological literacy. *Our country recognizes the importance of engineering, but it is a near fatal flaw to think a science, math or technology teacher can teach engineering. Placing engineering in the Technology Education curriculum may have seemed appropriate in the past, but it should now evolve to the distinct discipline that it really is.* Technology Education (TE) teachers are well trained for many of the general courses in technology education. They are not trained as engineers or even possess rudimentary levels of knowledge in the physics and engineering topics involved in courses such as Project Lead the Way (PLTW). PLTW attempts to train teachers in their courses, but an 80 hour summer training is insufficient time to expect a candidate teacher to actually understand statics, dynamics, kinematics, thermodynamics, electricity/electromagnetics, electronics, fluid mechanics, etc. I have watched teachers in these summer trainings who don't know the subject matter even when the training concludes. It must be realized, but it is rarely explained, that the PLTW summer training courses ONLY require the teacher to DO the same content that the student will do in the school year. It doesn't teach anything beyond the course itself. *Shouldn't the teacher have knowledge beyond the course he/she is teaching?* Virginia's engineering courses are taught by any Technology Education teacher available to teach the course, with no training in any formal or informal engineering program. Any engineer could identify these teachers when they see them teach a topic that they only know superficially. Imagine a class where a student asks a reasonable question that is "just beyond" what is covered in their high school textbook. Most Technology Education teachers won't have a clue. Teachers don't have to know everything, but they should be competent in their subject. Engineering subject matter is still "taught" by the teacher with the aid of a textbook. *We don't expect students in math and science courses to "discover" the answers to all their questions.* The current status of Technology Education teachers standing in the classroom teaching engineering does a disservice to both students and engineering. Students see mildly competent or incompetent adults in the role of engineering expert. Students are taught that building mousetrap cars, CO2 cars, paper airplanes, balsa bridges, etc. is engineering. Many of these "projects" are poorly conceived because students are hardly taught the connection between the science and math (i.e. no calculations) to their design. That's not engineering! We aren't preparing students well enough to pass engineering school in college. *I'm not sure currently whether curriculum for high school engineering courses like PLTW are more limited by the student's or the teacher's abilities. This should never be the case!* We could verify this lack of knowledge in those who are teaching our students engineering. Ask the teachers of engineering courses to pass an AP Physics test. Physics is the science associated with most of the applications of engineering taught	

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		in high school engineering courses. I doubt many of them would pass a combined Algebra, Geometry, Trigonometry, and Statistics test. I am certain the majority of those teachers who would not meet the licensing requirements of the proposed engineering endorsement would fail the test. *Why do we let them teach a subject that they don't Understand?* The arguments made for keeping engineering in Technology Education are simplistic: a. One argument made for keeping engineering in Technology Education is that they're already doing it. This is the logical fallacy of circular reasoning. b. Another argument is that they teach the engineering design process (practically a mantra for state Technology Education and VTEEA representatives). That flow chart is taught in the first week. But Technology Education teachers don't know how to do the FULL engineering design process because they can't teach the required math and science and its application. Watch an engineering class and see how little (if any) calculations are done as part of a project. We are misleading students. c. We won't be able to find the teachers to teach higher performing engineering classes. But this is actually an admission that current teacher are weak or incompetent. d. Technology Education teacher colleges can't use the word "engineering" in the title of their courses. This is because the school of engineering knows the sharp differences in what is taught in college Technology Education courses versus what is taught in actual engineering courses. *So if we recognize that Technology Education doesn't really teach engineering in college, why do we pretend that it's sufficient for high school?* e. But Technology Education courses currently teach "design". Just because you have the word design in the curriculum, doesn't make the course equal to engineering. Fashion Marketing and Art teach design. I don't think anyone confuses these courses with engineering. *Technology Education design is just primitive size and shape creativity at the most. Again, it misleads students into thinking engineering can be divorced from math and science, calculations, and the depth of engineering discipline.* The turf war is really about money. Perkins funds are designated for CTE courses. So the current Technology Education colleges and CTE directors use the scare tactic that engineering won't get money from Perkins Act. If the Perkins funds are currently being properly spent on Technology Education "engineering like" courses now, then can't they be used for engineering courses after these proposals are implemented? In the past, CTE has morphed from its roots in Industrial Arts and	

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		Vocational Education, absorbed ROTC, and includes the wide variety of endorsements that currently fall under CTE. Couldn't CTE accept that the engineering endorsement is required to teach any course with engineering in the title (similar to what the colleges do with courses titles)? This would be a SIMPLE SOLUTION THAT JUST REQUIRES THE WILL TO DO IT. IT IS A CLEAR CHOICE TO IMPROVE THE QUALITY OF ENGINEERING EDUCATION IN VIRGINIA. Virginia will provide better education in engineering by raising the standards. Education and society call it STEM not STM. Let's make Virginia fulfill the "E" for engineering. Let's make the discipline real.	
Jon Calma, Engineering Director in the Nuclear Propulsion Division (NPD) at Huntington Ingalls Industries - Newport News Shipbuilding (HII-NNS)	8VAC20-23-330. Engineering.	I graduated from Old Dominion University (ODU) in 2000 with a Bachelor's of Science Degree in Mechanical Engineering and obtained a Master's of Engineering degree in Mechanical Engineering in 2001 from ODU. After graduating from ODU with my BSME, I accepted a position at HII-NNS as an engineer in the Nuclear Engineering Overhaul Department. After approximately five years as an engineer with increasing responsibilities, I was promoted into supervision in this engineering department. As an engineering manager for several years, I was given the opportunity to lead and manage several engineering sections in Nuclear Engineering and work with many engineers with varying disciplines and backgrounds. It was very enlightening to hear each engineer's educational background and experience as I got to know them over the years. I was promoted to Director of Engineering four years ago in the same Nuclear Engineering Overhaul Department. In this new position, I was able to hire new engineers and help mentor the engineers in my department as well as other engineers within my Engineering Division. I also got involved in other engineering initiatives at HII-NNS to help promote engineering to local middle and high school students through the Career Pathways program in the company. I have always been a proponent to promote STEM programs and encourage students to enter STEM fields of study and continue to encourage and support students to pursue technical and engineering disciplines. I have found this career in engineering at HII-NNS very self-satisfying with a larger purpose in protecting our country through great assets such as the nuclear carriers and submarines we build at HII-NNS! Several months ago, I took over the positon as President of the Peninsula Engineers Council (PEC) and through this group, I will continue to encourage and endorse engineering careers for all students. I am writing in support of the new Engineering Teacher Endorsement and provide the following statement: The Peninsula Engineers Council (PEC) is comprised of seventeen professional engineering societies active in the Hampton Roads area. We represent thousands of practicing engineers from private industry and government laboratories. Our members span many engineering specialties including but not limited to aerospace, chemical, civil, electrical, material, naval architects and marine, mechanical, nuclear, structural, systems, and welding engineers. Our members' formal	

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		education ranges from Bachelor's and Master's degrees to PhD. Outside of work, they support apprentice programs, community college programs, and K-12 education STEM programs throughout Hampton Roads. In 2012 and 2014 the PEC wrote letters to the Virginia Department of Education expressing our beliefs that there is an insufficient offering of engineering related classes in the Virginia Public School System and that there is an insufficient quantity of qualified teachers to teach these classes. The letters were written over the signature of the PEC President at those times: Dr. Christopher L. Rumsey and Gary Fuller respectively. The PEC continues to support the concept of creating an engineering endorsement so that engineers may become teachers without having to qualify as technology education teachers, and so that our children will have engineering teachers who are best qualified by training to teach engineering. As we see it, an engineering endorsement should not replace technology education teachers with engineers, rather it is to recognize that engineers are uniquely qualified to teach pre-college engineering classes and, because of their deeper curriculum background in math and science, they are also potentially discipline-qualified to teach other math or science classes. In closing, the PEC applauds the efforts of ABTEL for the language they have developed to create the new Engineering Teacher Endorsement. Thank you for this opportunity to participate in this very important teacher licensure revision process.	
Donald Williams, P.E., Former Engineer and Current CTE Teacher at Phoebus High School Hampton, Virginia	8VAC20-23-330. Engineering.	I have 17 years of experience as a mechanical engineer, project manager and department head. I designed automated material handling systems for 7 years, and then worked in architecture and engineering for 10 years. I left this voluntarily to become a high school teacher. I now have 23 years of experience teaching such varied courses as the middle school technical education series, Principles of Physics, all four semesters of Cisco CCNA computer networking, Virginia's version of Introduction to Engineering, Robotics I and II, and PLTW Introduction to Engineering Design, PLTW Digital Electronics, PLTW Computer Integrated Manufacturing, and PLTW Engineering Design and Development. I also have coached Phoebus High School's award winning FIRST Robotics Competition team 2028 for 10 years. I think there are many good points being discussed about the proposed Engineering endorsement. I give all the commenters the credit for their benevolent intentions in regards to education of our youth. Only a few of the comments on this Town Hall or at the BOE meeting on Oct 23 used such emotionally charged words such as "shame" and "inferiority", or resorted to "leprechaun and unicorn" insults. I'm confident most of us recognize in each other the sincere desire to promote engineering education in Virginia whether we eventually "win" or "lose" in this decision.	

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		I do see a few recurring comments from those opposed to the regulation that should be addressed: The most disturbing claims are those who speak as if the regulations will require the teacher to be an engineer. That is a misunderstanding that is easily clarified by reading the actual text of 8VAC20-23-330: "*3. Earned a baccalaureate degree from a regionally accredited college or university and completed an engineering technology, science, or technology education major with at least 12 semester hours of coursework in engineering courses, including:* a. *Introduction to engineering design;* b. *Statics or dynamics;* c. *Circuits or fluid mechanics; and* d. *Thermodynamics"* 8VAC20-23-330 options 1 and 4 also allow alternative paths to engineering endorsement that don't require being an engineer. *This is certainly not limiting this endorsement to only engineering professionals.* If you look at the requirements for a Technology Education endorsement, we find in 8VAC20-23-270: *"3. Earned a baccalaureate degree from a regionally accredited college or university with a major in one of the following fields of study: architecture, design, engineering, engineering technology, industrial technology, or physics and completed a minimum of 15 semester hours of technology education content coursework, including at least 3 semester hours in each of the following areas:* a. *The nature of technology;* b. *Technology and society;* c. *Engineering;* d. *Abilities for a technological world; and* e. *The designed world".* Notice that it requires 15 credits in various Tech Ed courses even if the candidate already has an engineering or engineering technology degree. *This is an irrational double standard, yet it is the Tech Ed teachers and their professional organizations who are complaining.* Also, if you search the requirements for many endorsements you will find varying amounts of credit hours required to obtain most endorsements. That Engineering requires 12 credits is actually on the low end of the scale. Some are as high as 18 credits. A related item is the claim that an "engineer off the streets" could be fully licensed without education/pedagogical training. The proposed endorsement as with all	

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		endorsements addresses only the discipline or technical qualifications. This gets a teacher candidate a three-year non-renewable provisional license. The collegiate professional 5-year renewable license will continue to require professional education courses for engineering teachers just as for any other teacher. Another common argument is that high school engineering offers exploratory courses. There are at least three problems with this: • PLTW says its courses are college level credit worthy. From their site it says, "More than 150 institutions of higher education actively recruit PLTW students and provide recognition opportunities, including admissions preference, scholarships, and course credit." It can't be exploratory and equal to a first or second year college course. Yet they still fall short of college level because most students don't actually get college credit. This situation would be helped by having engineering teachers with a stronger background in engineering and/or engineering education. • For example, look at the curriculum of PLTW's Digital Electronics or Computer Integrated Manufacturing. College students have come back and proclaimed how similar these two courses were to college courses they took. They are far too rigorous to be called exploratory courses and well beyond Tech Ed's lite exploratory courses. • Some want to keep the course attractive to more students and fun. "Easy" "build a Rube Goldberg device" engineering courses mislead students. Some may not like the marketplace's determination of status and value, but the laws of supply and demand, the level of math and science required in the first year, and dropout rates argue that engineering is one of the more difficult degrees. Once we accept that these courses are not exploratory, we recognize that they should be preparing high school students for the rigor of college engineering programs. "We already teach engineering and we have for 20 years!" claim the Tech Ed teachers and their organizations. Many of the state's Tech Ed "engineering" courses are still marginally approaching the level of math, science and engineering that are appropriate to a course that intends to prepare students for college engineering school. PLTW courses are significantly closer but they run into the problem of high school Tech Ed teacher training. They attempt to solve this problem by an 80-hour summer course. But this course only walks the teacher through the same 135-hour course the student will take. I have seen this in all four PLTW summer training courses I've attended, and the same has been reported by my fellow PLTW teachers in my school system. So at the end of the school year, the student may know as much as the teacher. None of the opponents of this proposed Engineering endorsement have shown how or where a Tech Ed teacher learns anything more about engineering than this rudimentary level of education. Engineering is a recognized profession outside of	

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		this limited discussion as it pertains to the proposed endorsement. It's certainly unusual to suggest that the high level of knowledge required to be an engineer is just "picked up" along the course of teaching Tech Ed. The current CTE - Technology Education endorsement (8VAC20-23-270.3) only requires actual coursework in engineering for those who are being endorsed through an existing degree in "architecture, design, engineering, engineering technology, industrial technology, or physics." 8VAC20-23-270.2.c speaks of engineering as vague "comprehension of the attributes of technological design." 8VAC20-23-270.2.a even attests to engineering as another field. Virginia's Tech Ed teacher colleges do not teach engineering. Engineering is taught at the various schools of engineering. This isn't allowed in any core subject endorsement. Bringing Engineering into the K12 arena will improve the status of the professional relationship with math and science core subjects and thus raise the potential for real collaboration with peer level teachers. In the flurry of objection, no one has offered that there may be an easy compromise for current Tech Ed teachers. 8VAC20-23-70 (common to all endorsement paths) seems to indicate that once an Engineering endorsement is created, a Praxis II test will be made that allows a Tech Ed teacher to skip the coursework and use the test as the means to become endorsed in Engineering. This test will have to be different than the current Tech Ed Praxis II test because the subject matter of engineering is different than that of tech ed. The test will have to be written by Engineering educators and the engineering community. It might look like a short version of the general Fundamentals of Engineering (FE) exam that many engineering majors take as they are completing their undergraduate coursework. The coursework and the test will evolve as engineering courses are disentangled from Tech Ed courses. Assuming that some of the current Tech Ed teachers will pass this test, we will have done a service to the students of Virginia public schools. Those teachers who can pass the test will be able to keep teaching Engineering courses. Those who can't pass the test shouldn't be teaching engineering. Anecdotes about some individual who is a great engineering teacher but who can't pass a test doesn't stand up to even the standard for Virginia high school students. They have to pass high stakes tests to "prove" their educational merit for a diploma. So Virginia's Tech Ed teachers, directors, and professional organizations like to speak about CTE as a leader in the past in engineering. But they shun this next evolutionary step. Let's make engineering education in Virginia a leader for the future. Let's require highly qualified and highly educated teachers for the demanding discipline of engineering.	
Michael Piccione, Virginia Technology and Engineering Education	8VAC20-23-330. Engineering.	I am writing to express my deep concern regarding proposed changes to the *Regulations Governing the Review and Approval of Education Programs in Virginia*. Specifically, my concerns target the proposed, Engineering as a new	

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Association (VTEEA), International Technology and Engineering Educators Association, (ITEEA), Member and Technology Educator, Thomas Jefferson High School for Science and Technology Einstein Fellow, Emeritus 2011-2012 National Science Foundation		program of study and the addition of an engineering teaching license. If passed, this will affect the current state high school pre- engineering programs and teachers. We are the top high school in the country according to Newsweek and this licensure change would adversely impact the teachers in our program. The Technology Education curriculum is nationally recognized by the NSF, NASA, NAE, and other credible organizations as addressing the K-12 technology and engineering content and practices. My associations and their members have advocated for STEM partnerships for many decades. At the K-12 level in Virginia that partnership was specified in 2011 with the passing of Senate Joint Resolution 308, which established a shared responsibility among the existing science, technology, and mathematics subjects. Rationale for NOT endorsing a new engineering program includes the following: • As submitted to the VA DOE in 2013 the proposed revisions to the Virginia Technology Education Regulations already infuses engineering in a manner that aligns with the ITEEA national Standards for Technological Literacy and the National Assessment of Educational Progress (NAEP) for Technology and Engineering Literacy. • K-12 engineering education nationally, and in Virginia, is already focused on the engineering design process, as specified by the American Society of Engineering Education (ASEE), ITEEA, and the Next Generation Science Standards. • Technology Education is an approved subject area in Virginia K-12 education that already teaches the engineering design process. • Engineering courses, such as Engineering Design, Energy Systems, Robotics, and Prototyping are currently taught in our Technology Education department. Please keep the current structure for STEM education, inclusive of program regulations, funding, and professional development. Permit the content to remain directed at the existing science, technology, and mathematics education programs in Virginia, if change needs to be made then direct more resources to the teachers that are currently teaching, not away from them.	
Bob Kolvoord, College of Integrated Science and Engineering, James Madison University	8VAC20-23-330. Engineering.	I am writing in support of the creation of an endorsement in Engineering for high school teachers in Virginia. I currently serve as the Dean of the College of Integrated Science and Engineering at James Madison University (JMU), and previously served as the interim director/unit head of our new Engineering program. I hold a PhD in Theoretical and Applied Mechanics from Cornell University (1990) and have served as a faculty member in the innovative Integrated Science and Technology (ISAT) program at JMU since 1995. I was recognized with a State	

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		Council of Higher Education Outstanding Faculty Award for Teaching with Technology in 2012. During my more than twenty year career at JMU, I have worked extensively with Virginia STEM teachers in developing new applications for technology use in the classroom. I have also been a part of efforts in ISAT to develop and support an endorsement for CTE teachers. The development of an Engineering endorsement is critical to help support the inclusion of engineering in the K-12 curriculum. CTE teachers simply do not have the background to be able to support instruction in engineering design, the most critical element of engineering for K-12. Engineering, and specifically engineering design, is not a significant part of CTE teacher training – I can say this with some authority having worked trying to develop a CTE endorsement track at JMU, as well as leading an engineering undergraduate program with design at its core. The need for an Engineering endorsement is critical to those of us developing innovative undergraduate programs in engineering. Students coming to JMU from CTE programs simply don't have an understanding of what engineering entails, and many struggle at the outset of our program. In addition, we see the possibility of a career teaching engineering as a potential draw to bring more talented and motivated students to our program. In Virginia, the current endorsement or license for high school engineering teachers is in technology education. Technology education, by its nature, focuses on technologies that exist today – how to build them, how to use them, and how to repair them if they break. Technology education is important in developing the production workers of the future. However, engineering focuses on how to *create* technology of tomorrow to solve human or societal problems and needs in the face of constraints. Students graduating from our engineering program are not currently eligible for certification in Virginia (even with appropriate education coursework). In order to teach the discipline in which they have a degree, they must complete substantial additional coursework – a clear disincentive to becoming a teacher. At a time when we need more K-12 teachers in this area, this is clearly not good policy. If Virginia wants to bring high-quality engineering curricula to its high schools, it needs engineering teachers with a significant amount of engineering coursework or experience – either as an engineering major, or, in addition to a science or technology education major, or as a practicing engineer. Virginia must become more welcoming to engineering majors and reduce barriers to bringing them into the teacher workforce if we are to build our capacity to teach engineering in K-12. An engineering endorsement will be a dramatic step forward to improving and spreading engineering in Virginia's high schools.	

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Samuel E. Benson, Marsteller Middle School, Prince William County Public Schools, 2015 Northern Region, VTEEA, Middle School Technology and Engineering Education Teacher of The Year	8VAC20-23-330. Engineering.	I have been teaching Technology Education in the state of Virginia for over forty-five years. Before any changes are made to the present Technology Education teacher certification procedure, please consider the words written by the commenter, George D. Bishop, VACTE representative and Governmental Relations Chair, VTEEA. He said it so very well. Classroom management skills are a very important part of the teaching-learning process. Please re-consider what will be required for engineers to become teachers. Please, stay with what we presently do to prepare our CTE educators for the classroom.	
D.E. Shapiro, President, Virginia Technology and Engineering Education Association	8VAC20-23-330. Engineering.	On behalf of the Virginia Technology and Engineering Education Association, I offer the following to support our request: • In 1988, the Virginia was the first Commonwealth/State to add Engineering courses to the existing Technology Education Program. • In 2011 the Senate Joint Resolution 308' Establishing Shared Goals for an Engineering Program of Study with Shared Responsibility Among the Science, Mathematics, and Technology Disciplines was passed which specifies a partnership between our existing science, technology, and mathematics subjects to teach Engineering. • In 2011, the Virginia Technology Education Association changed it their name to Virginia Technology and Engineering Education Association to reflect the Engineering Education (VTEEA) taught within our Technology Education Programs. This also mirrors the addition of engineering in our parent organization the International Technology and Engineering Educators Association. • Engineering Education is already included in our Science, Technology, and Math Programs. Our schools are already teaching STEM in our K-12 courses. It is unnecessary to make further provisions for Engineering Education or Engineering Education Licensure. • The VTEEA includes staff development in Engineering Education in their Summer Staff Development to assist in preparing all Technology and Engineering Education programs. Our Project Lead the Way (PLTW) instructors all have had in-depth instruction on teaching engineering in the required PLTW courses. • The Technology Education curriculum is nationally recognized by the National Science Foundation, NASA, National Academy of Engineering, and other credible organizations that address the K-12 technology and engineering content and practices. • We already have a teacher shortage throughout education. Creating another endorsement requirement will only add to the number of teachers to be hired for these positions. Please support the programs that are already offered and the licensure currently in place. Do not add to already strained budgets and shortages of teachers. Our current	

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		Technology Education program in Career and Technical Education does an excellent job of preparing students for both career and college opportunities.	
Dr. Brenda D. Long, Executive Director, Virginia Association for Career and Technology Education	8VAC20-23-330. Engineering.	I am opposed to the *Licensure Regulations for School Personnel* proposed Engineering Endorsement and the Regulations Governing the Review and Approval of Education Program proposed Engineering program. The proposed Engineering endorsement duplicates content that has long-been covered and continues to be a part of technology education. Virginia is a national leader in secondary engineering education since the Technology Education Service created the first high school engineering courses in 1988. If the goal of the proposed engineering endorsement is to get more students to enter engineering, then, by definition that is Career and Technical Education. Such a program already exists in technology education and duplication of endorsements is not needed. Engineers already have an avenue to Virginia licensure thorough technology education (reference 8VAC20-23-270 Career and Technical Education--Technology Education), as well as, through the Career Switcher program, or through a provisional licensure program. Engineering is an integral part of Virginia's technology education program. This statewide program is improved thorough existing channels such as the curriculum revision schedule and the DACUM panels used annually by the Department of Education's Office of Career and Technical Education. To have a separate engineering endorsement and an engineering program, are clearly a duplication of services. During a time of continued budget constraints at the local school division, funding a separate engineering program is a waste of valuable resources, when engineering concepts are already in place within the technology education curriculum. Senate Resolution 308 passed in 2011 specified engineering education within Virginia is the shared responsibilities of science, technology, and mathematics and not the silo approach to STEM as proposed by the separate engineering endorsement. An engineering endorsement is already in place through technology education and engineer programs and concepts are already in place through the technology education curriculum.	
George D. Bishop, VACTE Representative/Governmental Relations Chair, VTEEA	8VAC20-23-330. Engineering.	The Commonwealth of Virginia Code currently covers engineering and does an excellent job of preparing students for both career and college opportunities. Competencies are delivered by trained educators who are also content knowledge professionals. Career and Technical Education instructors welcome the opportunity to speak with anyone who has a vested interest in education and discuss the options available to the students of Virginia. The current proposal, designed to create an engineering discipline is unnecessary and redundant. Current Virginia Code already incorporates the instruction of engineering coursework within the Career and Technical Education umbrella. There is no statistical evidence that Virginia public schools are not meeting the needs of colleges and universities with regard to students continuing post-secondary study in the field of engineering. In fact, there is ample evidence cited by numerous studies that there are actually too many engineers graduating from our nation's colleges and universities each year. Furthermore, according to the United States Department of	

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		Labor's Bureau of Labor Statistics, the employment prediction for 2012-2022 job growth in mechanical, aerospace, and industrial engineering fields is slower than average. I also oppose the proposal creating an additional path for engineers to gain teacher licensure. Virginia Code currently offers options for certification that are based on sound reasoning. There is no need to reinvent the wheel for engineers who are simply seeking to escape the pedagogy requirement. Research shows that content knowledge is only 20 percent of what makes a good teacher. Engineers need to understand the ramifications of decisions they might make in a secondary classroom and be especially mindful of adolescent development. Simply knowing how mathematics and science are applied to the engineering process is not enough to warrant placing engineers into a classroom without formal training. I certainly do not oppose having engineers in the Career and Technical education field, nor do I oppose having engineers teaching mathematics or science if that is their desire. What I do oppose is having a separate discipline for engineers and different licensing procedures for engineers to teach, especially procedures based upon faulty reasoning which, if followed to a logical conclusion, would say that only lawyers could teach criminal justice. Additionally, research shows that the science and engineering courses at the nation's colleges and universities lose students based not on student performance or secondary school preparation, but on the quality of college education, be it poor teaching resources or lack of pedagogy. Pedagogy training is absolutely necessary to develop effective educators. In the majority of comments posted I see no actual statistics provided that support the need for a stand-alone engineering discipline. The following publications should be read and digested prior to making a determination to add engineering as a discipline or making any changes to the regulations for endorsement for Virginia. This effort to change the existing Virginia Code is unnecessary, arbitrary, and redundant. Such a change will weaken the standards already in place and by which Technology Education teachers demonstrate on a daily basis the application of mathematics and science (engineering) through the use of technology. Science, Technology, Engineering and Mathematics (STEM) education is alive and well in Virginia without the proposed changes. http://www.asee.org/papers-and-publications/publications/college-profiles/2011-profile-engineering-statistics.pdf http://www.theatlantic.com/education/archive/2014/03/the-myth-of-the-science-and-engineering-shortage/284359/ http://www.tbp.org/pubs/Features/Su09Brown.pdf http://www.urban.org/research/publication/eye-storm/view/full_report	
Teresa Lindberg, President Virginia Association for Career and	8VAC20-23-330. Engineering.	I am writing in opposition to the proposed Engineering endorsement and that it be struck from the *Licensure Regulations for School Personnel* and recommend the proposed regulations for engineering programs be stricken from the *Regulations*	

8VAC20-23 *Licensure Regulations for School Personnel*
Public Comment Summary

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Technical Ed		*Governing the Review and Approval of Education Programs in Virginia* (8VAC20 - 542): The rationale behind this opposition is due to the following reasons: 1. The engineering endorsement duplicates curriculum and content that is an essential part of technology education. The technology education program curriculum is revised annually by the Department of Education Office of Career and Technical Education which actively partners with industry and business to provide dynamic and high quality programs to meet current, emerging and projected labor market needs. The technology career cluster and pathways lead to credentials that qualify students for a range of career opportunities from entry to professional level. Furthermore, if Engineers wish to change, improve, modify or add competencies/curriculum and/or skills should collaborate with Department of Education Office of Career and Technical not duplicate a program that is very successful. 2. The proposal will create an individualism approach to STEM education that clearly is against the Senate Joint Resolution 308 passed in 2011 which specified engineering education within Virginia is the shared responsibility of science, technology and mathematics. Virginia is and will continue to be a national leader in engineering education. Our Virginia Technology and Engineering Association members have been involved in the development of Standards for Technology and The National Assessment of Educational Progress Technology and Engineering projects as well as various National Academy of Engineering projects. In addition, our Technology Educators has become and will continually be internationally known for the annual Engineering Conference it hosts for elementary educators.	
Jesse W. White, Citizen	8VAC20-23-330. Engineering.	I have a current Post graduate Professional Virginia Teaching License with endorsements in Technology Education, Adult Education, and Building Trades. Over the course of my career, I taught high school Technology, served as President of the Virginia Technology and Engineering Education Association, been a Career and Technical Education Director in Hampton, Virginia, a business owner, a building contractor, and directed adult developmental disability programs. I have worked in both the private and public sectors over the last 40 years. I have a B.S.E. in Industrial Technology, an M.Ed. in Vocational and Adult Education, an Ed.S. in Vocational Education Leadership, and completed all but my dissertation in Human Performance Technology and completed training in Quality, Lean Processes, and Six Sigma. I have been recognized for leadership and service by my peers in K-12 and have developed solid industry-education partnerships, career academies, and served as a board member in the Virginia Association for Career and Technical Education, Virginia Children's Engineering Council, and other leadership roles.	

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		Before retiring last month, my work included developing STEM middle school programs, the only health and medical sciences middle school program in Virginia, and the first Governor's Health Sciences Academy. I helped develop one of the first Governor's STEM academies as well as the Architecture and Applied Arts Governor's STEM Academy in Hampton and one in the application phase to ensure the students in Hampton have rigorous academic and performance-based real career experiences. I have also re-designed the engineering program in Hampton where we graduated two Gates Millennium Scholars, have students who went to post-secondary engineering school or into industry, and students who have done well in ABET accredited post-secondary engineering programs. I have also built positive relationships with our local and regional employers. After listening to and reading comments on the proposed new Engineering endorsement, I do not believe this solution of a new and separate Engineering endorsement represents the needs of the Commonwealth, our schools, the career field of engineering, nor our community's needs or education priorities. I am not saying this work is flawed, however, I do think it is important to measure the right question. If there is a need to improve instruction, why reinvent the wheel? In the Town Hall comments, it is said (paraphrased) that there is no engineering at the K-12 level. I ask, then where did our engineers come from if they did not learn to be engineers in high school? How did they come to know about these careers and how did our students, who do not know an engineer in their home life, succeed in enrolling in a postsecondary engineering program? Where do first generation STEM learners look in their development and growth for that positive and encouraging adult (teacher)? In the Virginia Board of Education approved and industry-validated curriculum, Engineering has been in our schools since the 1980's and is currently taught at the developmentally appropriate level. I believe that the initial idea of the Governor's STEM Academies was to resolve the very concern that is posed as if nothing is being done. The advent of the Governor's STEM Academies in 2008 surely have an impact on creating new engineers. There are now 23 Governor's STEM Academies in Virginia. These STEM Academies rely on Technology Education for engineering content and processes which is embedded in the essential competencies even if the name of a course does not match a university course. My colleagues and I agree that there is no established need for the proposed endorsement outlined in 8VAC20-23-330. The National Academy of Engineering does not advocate for a segregated curriculum. Mastery of Science, Technology, and Mathematics are the disciplines required to be able to apply the engineering design process. This new endorsement will not guarantee a stronger engineering background of a teacher nor an ability to assure student learning. Currently, there are no barriers to bringing college graduates with engineering degrees and licenses into the teaching profession. Hampton has several and they have been teaching Technology and Engineering for decades. I strongly oppose the creation of this engineering	

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		endorsement. While continuous improvement processes are always needed, and in this case we hear from those who state a need for improvement, it is my hope that the focus of time and money be put in improving the current system (one that has produced desired results) rather than create a fuzzy model that has no research base, nor clarity in its outcomes. It would diffuse school divisions' ability to produce college and career ready adults. Perhaps the advocates of this proposal would offer their time to assure a better curriculum offering rather than create an unnecessary burden on the schools in the Commonwealth. I believe that a reevaluation and review of more current and relevant data, particularly from the Governor's STEM Academies would now be more of an urgent need to avoid potential waste of state and local tax dollars. Please do not allow this proposed engineering endorsement. The National Academy of Engineering publications have consistently recommended that efforts toward K-12 Engineering Education standards should be in collaboration with Science, Technology, and Mathematics. Virginia's Technology Education teachers, leaders, and professors have worked, since the 1980's, to create an Engineering curriculum that starts as early as Kindergarten, proceeds through middle school and high school in several forms, and has produced graduates who have gone through university to professional engineering careers. Publications and others who have promoted stopping what we are currently doing and starting a K-12 engineering curriculum, have done so in context of common core standards and outdated federal policy. The Commonwealth of Virginia not only has a working solution, but many of those teachers have reached out to their science and mathematics colleagues in collaboration and interdisciplinary efforts curriculum teams. However, in the oft cited 2010 publication, Standards for K-12 Engineering Education? (See: http://www.nap.edu/download.php?record_id=12990 National Academy of Engineering) and particularly in the section, "Overall Conclusion," is: "The committee concluded that, although it is theoretically possible to develop standards for K–12 engineering education, it would be extremely difficult to ensure their usefulness and effective implementation. This conclusion is supported by the following findings: (1) there is relatively limited experience with K–12 engineering education in U.S. elementary and secondary schools, (2) there is not at present a critical mass of teachers qualified to deliver engineering instruction, (3) evidence regarding the impact of standards-based educational reforms on student learning in other subjects, such as mathematics and science, is inconclusive, and (4) there are significant barriers to introducing stand-alone standards for an entirely new content area in a curriculum already burdened with learning goals in more established domains of study" (page 1, Executive Summary).	

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		However, Virginia does have extensive experience with K-12 engineering with different approaches and since the 1980's. It is in this that a lack of true collaboration has occurred as Mathematics and Science SOL's have created a separation and Engineering has been adopted as a component of Technology Education. The Virginia Department of Education has not adopted the name of its Technology Education Services as has occurred in the Virginia Technology and Engineering Education or the International Technology and Engineering Educators Association department name. This should be corrected as the only research-based engineering education is found in Technology Education. The book does cite the ITEEA Standards of Technological Literacy when making its case for and Engineering curriculum. Further, in "RECOMMENDATION 1" of the publication, Standards for K-12 Engineering Education? "Federal agencies, foundations, and professional engineering societies with an interest in improving precollege engineering education should fund a consensus process to develop a document describing the core ideas of engineering that are appropriate for K–12 students. The process should include the views of a wide range of stakeholders. Work should begin as soon as possible, and the findings should be shared with key audiences, including developers of new or revised standards in science, mathematics, engineering, and technology at the national and state levels." In "Guidelines for the Development of Instructional Materials," "One important benefit of core ideas would be to support the development of guidelines for K–12 engineering instructional materials. Guidelines would help curriculum developers focus these materials on the core ideas and ensure that students would be exposed to materials representative of the actual practice of engineering. Thus guidelines could have an immediate, positive effect on the development of K–12 engineering curricula" (page 2 Executive Summary). The Virginia Board of Education should direct the Superintendent of Instruction to use available resources such as Technology Education Services and began work to account for the current K-12 Engineering programs, teacher ability, and available national standards of practice. Only then should a separation from current practice occur. Further, in "Special Characteristics of K–12 Engineering Education," "K–12 engineering education has three important characteristics that must inform standards development and implementation. First, as noted in Chapter 1, compared to other K–12 subjects, engineering has a very small footprint in schools; in addition, almost no undergraduate programs provide training for prospective teachers of engineering. To put it simply, K–12 engineering education is in its infancy, and this has implications for standards. Second, engineering has strong connections to mathematics, science, and technology, school subjects for which there already are K–12 content standards. In addition, existing standards, particularly for science and technology, exploit their natural connections to engineering. Thus it is reasonable to ask if new engineering standards must include explicit links to these and perhaps	

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		other content standards. Finally, because of the postsecondary, professional track in engineering, some K–12 engineering curricula focus on preparing students to enter engineering schools, sometimes called the "pipeline" approach (e.g., Project Lead the Way, www.pltw.org). However, content standards for K–12 school subjects are typically based on a "mainline" goal, that is, general literacy in that field of study. This raises the question of whether there should be two sets of standards for K–12 engineering and, if so, how they might differ" (page 17). I propose that this board reflect on the historical basis that 1, Engineering is a career field and that the study of careers is in the domain of Career and Technical Education. In this is the question of which other K-12 curriculum areas outside of Career and Technical education have endorsements and separate curricula in their career fields? 2) That as Virginia improves its effort to provide a K-12 Engineering Curriculum, that it be a collaborative effort amongst the Science, Technology, and Mathematics disciplines, and 3) that until real research and practice emerges as something different than what Virginia provides at developmentally appropriate levels, the domain "engineering" whether with a lower case or capital E remain in Technology Education. This would allow a transition, should one be necessary, rather than to further spread the education funding, efforts, and clarity. While there may be a prima facie logic to creating a new endorsement, history proves that education reform without due process or research leads to faulty logic and less student ability. In addition, claims that engineering is not present in Virginia K-12 are missing current data about what does occur. In addition, while the need for engineers is evident at some companies, it is the post-secondary institutions who need the K-12 pipeline. Industry requires the 4-year graduate. Universities need the high school graduates. Please do not allow this endorsement to continue as it is currently written. Instead, follow through with recommendations to create a true collaborative as the Governor's STEM Academies suggest.	
Jim Batterson, Former Sr. Advisor to the Commonwealth for STEM Initiatives	8VAC20-23-330. Engineering.	For a teaching license endorsement in mathematics or a science, Virginia requires high school teachers to have either a major in the subject or significant coursework in that subject. For example, to be endorsed in chemistry, one must, in part: *"…Complete a major in chemistry or 32 semester hours in chemistry, including inorganic chemistry, organic chemistry, physical chemistry, and analytical chemistry and other preparation consistent with the competencies required for the endorsement; or* *Earned an endorsement in another science discipline and at least 18 credits in chemistry, including preparation in each of the following areas: inorganic chemistry, organic chemistry, physical chemistry, and analytical chemistry."* However, there is no similar requirement to teach engineering in VA, but, instead, a high school teacher must get a technology education endorsement. There is no endorsement for engineering in VA and, thus, there is currently no guarantee that a high school engineering teacher has either a major or significant coursework in the	

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		engineering discipline. College preparation for technology education involves knowing about a very broad range of technologies, how to use them, how to repair them, and to some extent the engineering design process. It is aimed at preparing students to go directly into the workforce with a national certification or to go to a community college or apprentice program for additional formal coursework. Though using some technologies, engineering majors do not learn about the breadth of technologies that technology education majors learn, but learn more advanced mathematics, advanced science, and specific advanced engineering analysis and design coursework that technology education majors do not take. Evidence of these differences can be found in the requirement that engineering majors take an additional 12 hours of specific technology education coursework to qualify for a technology education endorsement (proposed to be raised to 15 additional hours) and in the currently proposed engineering endorsement which is the subject of this paper which provides for twelve specific hours that a science or technology education major should take to be endorsed in engineering. Simply put technology and engineering are not equivalent. Technology is a *result* of applying scientific knowledge and engineering knowledge and processes to solve a problem or societal need. Since 2010, a team of high school engineering teachers and professional engineering subject matter experts from academe, government labs, and industry, have worked with ABTEL and the VDOE to create an appropriate set of engineering content area knowledge requirements for an engineering endorsement to address the Board of Education Goal 5 of "highly qualified and effective educators". This paper provides details on the differences and relationships between the S, T, and E of STEM, some of the differences in formal preparation of engineering and technology education college graduates, and finally a history of activities that led to the proposed engineering endorsement 8VAC20-23-330 and the proposed competencies for an approved teacher preparation program in engineering, 8VAC20-543-280 in the proposed licensure packages before you today. BACKGROUND AND STEM DEFINITIONS Numerous reports[1] over the past decade have spoken to the link between innovation and STEM (Science, Technology, Engineering, and Mathematics) education. Science, technology, and mathematics all *serve* innovation but innovation itself is born of the engineering design process (the "E" of STEM) – not the scientific method. And engineering is not equivalent to technology. In short:	

[1] Examples are: testimony by Aneesh Chopra on Supporting Innovation in the 21st Century Economy to Committee on Science and Technology, Subcommittee on Technology and Innovation, United State House of Representatives, March 24, 2010; "Innovation America – A Final Report" from The National Governors Association, July 2007; The 2009 report by the National Academy of Engineering and National Research Council, "Engineering in K-12 Education", is available from the National Academies Press (www.nap.edu).

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		• Science discovers the principles of the natural world – the world that is; • Engineering produces the human-designed world – the world we want; • Technology is the result of applying scientific and engineering knowledge and processes to solve a problem The Commonwealth requires significant mathematics and science coursework of all children for successful completion of and graduation from the K-12 program. Very little is required in technology and nothing is required in engineering for graduation. A number of Virginia's schools participate in excellent extra-curricular engineering activities such as FIRST Lego, Tec, and Robotics[2]. A relatively small number of Virginia schools participate in curriculum-based engineering programs such as *Virginia Children's Engineering* in K-5 and *Project Lead The Way* in high school. The locus for the limited K-12 engineering activity in Virginia since its introduction in the late 1980's has been in Career and Technical Education where these important initiatives were first taken and have been sustained. The accompanying PowerPoint graphic shows the STEM "continuum" from mathematics on the left to the trades on the right. At the top of the chart, on the left, one sees that mathematics is taught as primarily theory while trades, at the other end of the spectrum, on the far right, is almost all hands-on with very little theory. In the middle of the chart, we find engineering – the "E" of STEM. Engineering is an even blend of hands-on and theory and, while the trades focus on teaching students how to build and repair *existing* systems, engineering focuses on the design and fabrication *new* systems – innovation. These columns should not be seen as isolated "stovepipes" but rather blending one into the other and each should be recognized as a continuum itself. For example, in the science column, we show a range from a theoretical physicist who is very close to being a mathematician, to an experimental physicist, who must be very familiar with engineering in order to get experimental apparatus designed and built. Watchers of the television series "Big Bang Theory" will recognize the main characters: Sheldon as a theoretical physicist, Leonard as an experimental physicist, and Howard as the engineer. All three characters need to work together to move science (our knowledge of nature and the universe) forward. Sheldon must develop theories about matter and the universe that are either validated or disproven via Leonard's experiments - which of course are done with machines and instruments designed by Howard and built and maintained by skilled technologists and craftsmen (who we unfortunately do not see on the show). The skills represented by each of the columns are equally important. Furthermore, Leonard must have trades and crafts people (technicians) to manufacture, operate, monitor, and repair when necessary, the machines that carry out his experiments. A couple of specific examples to further understand the chart:	

[2] Other examples include Future Cities, Egg Drop and model boat and race-car contests.

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		Engineering and the trades (the right-hand three columns): Let's look at an example in which a car is brought into a garage with some unexplained problem. In the far right-hand "trades" column, a traditional automobile-repair CTE course teaches the student how to repair a car – identifying a problem with an automobile and correcting it with an off-the-shelf replacement part. This trade's graduate can identify the problem with the car, go to the parts supply room, get a replacement part, install it, and send the fixed car on its way. For the same situation, an *engineering technologist* (next column to the left) would be trained to do the same problem diagnosis and repair, but, also, in a case where the part was not available in the supply room, would be able to *manufacture* a replacement part using computer aided design and manufacturing or fabrication – often known as a "middle skill". Moving one more column to the left, the *engineer* may not be able to do the problem diagnosis, but once given the failed part and its location in the car system, would be able to combine her additional knowledge of science theory, perhaps in materials chemistry, and engineering analysis of the vehicle requirements to analyze why the original part failed and then innovate the design of a totally *new* part from an alloy or polymer or composite or different alloy that is maybe stronger, lighter, safer, cheaper, or more environmentally sound than the standard part on the shelf. Science and engineering (the left-hand three columns): In a second example, consider a NASA mission objective such as the one that led to the design and incredibly successful mission of the NASA Mars Rover and Science Lab, Curiosity: is there now or was there ever life on Mars? NASA *scientists* must determine what needs to be measured and how well it has to be measured. *Engineers* must then take these requirements and design an instrument to meet them. But also they must meet requirements and constraints from project managers regarding the size, mass, energy consumption, and cost of the instrument. These constraints often lead to the engineers and scientists working closely together to find compromises in the original measurement requirements in order to meet mission constraints. The engineering designs are taken by engineering technologists and skilled crafts and trades people, who then fabricate this novel instrument within the specifications and stringent requirements dictated by the planetary science mission and the hostile space environment. Furthermore, engineers must design and technicians must fabricate the rocket, descent vehicle, and the rover vehicle, and engineers must design the guidance trajectory from Earth to Mars, and a very complex descent through an unknown Martian atmosphere to a safe landing at a specified location on the incompletely-known Martian surface. So, as mentioned earlier, the knowledge and skills represented by any column are not better or worse or more or less important than those represented in any other column – they are just different. A synthesis of ALL of them are required to move our knowledge of the universe forward and provide technological advances to safely satisfy human needs in society.	

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		TEACHER PREPARATION But we have a "gap" in Virginia. Until just recently, while mathematics and science were found in the VDOE Instruction Division, the trades and engineering were found in the separate Technology, Career, and Adult Education Division. Thus, in Virginia, we have had a culture of an "either-or" dichotomy of curriculum with hands-on instruction for those traditionally going directly into the workplace or to community college, removed from the more theoretical curriculum that is aimed at the college-bound. The State Superintendent has recently corrected this mid-20th century organizational paradigm by bringing CTE into organizational alignment with mathematics and science. However the endorsement requirement for engineering teachers, which developed in CTE over the years, continues to be that of technology education. The purpose the proposed engineering endorsement, 8VAC20-23-330, is to provide for engineering teachers with an appropriate background and formal training in science, math, and engineering. The close relationship with science and the importance of engineering has been recognized by several statewide and national reports including: • The 2007 science & engineering panels sponsored jointly by NASA and Virginia's Secretary of Education[3] • The 2011 National Research Council "Framework for K-12 Science Education" • The 2011 National Academies of Engineering Report on K12 Engineering Education[4] • The 2012 Next Generation Science Standards In 2013, on recommendation from ABTEL, the VBOE approved a change to the 8VAC20-22 teaching licensure package which did include both a recommended engineering endorsement (now 8VAC20-23-330) and a set of competencies required for K-12 teacher preparation programs in engineering (8VAC20-543-280)	

[3] The engineering panel was composed of eleven practicing engineers drawn from industry, government labs, and academe along with three high school engineering teachers.
[4] *"The committee concluded that, although it is theoretically possible to develop standards for K–12 engineering education, it would be extremely difficult to ensure their usefulness and effective implementation. This conclusion is supported by the following findings:*
(1) there is relatively limited experience with K–12 engineering education in U.S. elementary and secondary schools,
(2) there is not at present a critical mass of teachers qualified to deliver engineering instruction,
(3) evidence regarding the impact of standards-based educational reforms on student learning in other subjects, such as mathematics and science, is inconclusive, and
(4) there are significant barriers to introducing stand-alone standards for an entirely new content area in a curriculum already burdened with learning goals in more established domains of study. "

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		in Virginia. These are the subject of today's public hearing. If the endorsement does not become regulation, things will remain as they are today, with, for example, a chemical engineering major from M. I. T. unable to get a provisional teaching license to teach engineering in Virginia's high school without completing twelve (to be increased to fifteen hours in the technology education proposal also before you today) additional hours of technology education courses to satisfy requirements for a technology education endorsement. There are, in general, three major degrees offered by universities in the area of technology and engineering: • Technology Education[5] (schools of education) • Engineering Technology[6] (schools of engineering) • Engineer[7] (schools of engineering) The formal post-secondary education for the science, engineering, and technology disciplines reflects the needs of the graduate practitioners – often containing significant coursework from the neighboring discipline. Thus scientists have significant mixes of math and engineering depending on their theoretical or applied bent, while engineers must have significant math, science and hands-on engineering technology training to carry out their profession. Technology education majors, while having extraordinary hands-on experience across a very broad array of technologies, lack the in-depth science and math theory as well as engineering analysis and design coursework to teach legitimate engineering courses….just as engineering majors often lack hands-on skills in a significant number of areas to teach high school technology education courses. While not the same as coursework taken by science majors, an engineering major does have significant coursework in advanced science. All engineers must know a significant amount of physics. Chemical engineering majors generally will take a significant number of chemistry theory and lab courses. This will lead to a new paradigm for filling out the teaching schedule for high school engineering teachers as Virginia allows for adding additional endorsements via passing the *Praxis 2*	

[5] Nominally offered by schools of education, *technology education* focuses on the critical hands-on skills traditionally taught in shop or vocational education classes. Professors are seldom engineers, but rather technology education and trades specialists themselves.
[6] Nominally offered by schools of engineering, *engineering technology* contains more engineering, mathematics and science than technology education and the graduate is prepared for a career as a project manager using current tools and technology to carry out projects that require today's technology. Engineering Technologists are implementers rather than designers.
[7] Offered by ABET (Accreditation Board for Engineering and Technology) accredited schools of engineering, *engineering* requires that the student have significantly more and higher level mathematics and science than engineering technologists. The engineer is trained on conceptual aspects as well as hands-on application so as to be prepared to innovate through the design of new systems of value to society.

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		content knowledge exams. Thus with the addition of knowledge of Modern Physics, any engineering major would likely be prepared to pass *Praxis 2* in physics; chemical engineering majors should easily qualify to teach chemistry; geo engineering majors qualify to teach earth science; and bio engineering majors to teach biology. Of course, engineering majors can also opt for the traditional process of taking 15 technology education hours and teach technology education along with engineering. Just as math and science teachers are required to have degrees or a significant number of hours in their content area, so have we reached the point in high school (pre-college) engineering, wherein, engineering teachers should have a degree in engineering (or at least significant career experience in an engineering field following a mathematics, science, technology education, or engineering technology degree). INDUSTRY SUPPORT AND HISTORY OF THE PROPOSED REGULATIONS In 2011, a presentation was made to ABTEL on behalf of ten technology and academic leaders[8] from across the Commonwealth, requesting "that ABTEL investigate the establishment of an engineering licensure endorsement for high school teachers and recommend that such investigation substantially involve a panel of practicing engineers (subject matter experts) drawn from university engineering schools, national laboratories, and industry". In 2012 a five-person[9] panel of engineers from universities, a government laboratory, and industry, in collaboration with a senior technology education coordinator from a large urban school division, developed and submitted to ABTEL a draft set of requirements for a high school engineering teacher endorsement. The requirements offered five separate options or pathways to the endorsement in an effort to accommodate as many backgrounds as possible while still assuring that students taking engineering courses have appropriately qualified engineering teachers. Thus there were pathways for science majors, engineering majors, and technology education majors with each pathway simply assuring that the prospective licensee have a proper mix of math, science, and hands-on engineering coursework or professional experience. For example, while an engineering major would qualify straight-away, technology education and	

[8] This group included: Capt. Joe Bouchard (USN ret.), Former Delegate VA General Assembly; Doug Dwoyer, Director (retired) of Research, NASA Langley Research Center; Tim Early, President/CEO, Hampton Roads Technology Council; Rear Adm. Bill Hayden (USN ret.), Executive Director, STARBASE Victory, Portsmouth Public Schools; Rick Lally, Interim Director, Innovate!HamptonRoads; John Ledgerwood, Engineering & Technology Coordinator, VA Beach Public Schools; Bob Lindberg, President & Executive Director, National Institute of Aerospace; Brett Vassey, Executive Director & CEO, Virginia Manufacturers Association; and Jonathan Whitt, Executive Director, Region 2000 Technology Council.

[9] Members (and pertinent affiliation at the time) were Bob Kolvoord, Head of the Interdisciplinary & Applied Science Dept (and developer and former interim Dean of the Engineering major) at James Madison University; Doug Dwoyer, retired Director for Research & Technology at NASA Langley Research Center; Bob Lindberg, President of the National Institute for Aerospace, former vice-president Orbital Sciences Corp; John Ledgerwood, Technology Education Coordinator for VA Beach Public Schools; and Jim Batterson, Head, Dynamics & Control Branch at NASA Langley Research Center

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		science majors would be required to have completed 12 hours of specified engineering coursework. In 2011, Senate Joint Resolution SJ308[10] was passed requesting the VDOE: "….to establish shared goals for an engineering program of study, and assign a shared responsibility for this program between the existing science, mathematics, and technology disciplines…and… that K-12 engineering not be subsumed by just one curriculum domain, but only taught in conjunction with science, mathematics, and technology education by teachers with appropriate training in the engineering design process, the scientific method, science, and manufacture to specifications and constraints." The intent of SJ308 was NOT to limit the outcome to the "current departments of technology, math, and science", but rather (and because there was and still is not an engineering department) to force a meeting between these existing elements to see what might be the right approach for developing engineering skills for the Commonwealth's students "…by teachers with appropriate training….". This resolution led to the appointment of an "Engineering Education Advisory Committee" by the VDOE which met in late 2011 and was composed of 16 citizen participants from across the Commonwealth with a pretty good skill mix led and facilitated by VDOE senior staff in instruction, science, and technology	

[10] WHEREAS, STEM is the acronym used in K-12 education for Science, Technology, Engineering, and Mathematics; and
WHEREAS, each component of STEM differs from the others in subtle but important ways; and
WHEREAS, science is concerned with the discovery of the laws by which nature works— the discovery of the natural world; and
WHEREAS, mathematics is concerned with the study of patterns and relationships among quantities, numbers, and shapes; and
WHEREAS, technology education is concerned with the modification of the natural environment in order to satisfy human needs and wants; and
WHEREAS, engineering is concerned with the creation of the human-designed world—the purposeful shaping of science and technology to meet societal needs; and
WHEREAS, innovation, critical thinking, and problem solving are highly desired twenty- first-century capabilities in the Commonwealth and the nation; and
WHEREAS, innovation is born directly of engineering rather than science and mathematics; and
WHEREAS, the engineering design process differs from the scientific method; and
WHEREAS, engineering design leads to the manufacture or fabrication of a product that meets design requirements and constraints; and
WHEREAS, engineering teachers require a significant background in the engineering design process and the manufacture to specifications process as well as science, mathematics, and technology education; and
WHEREAS, mastery in the engineering design process or manufacture to specifications process is not required of science and mathematics teachers; and
WHEREAS, mastery in science and mathematics is not required of technology education teachers; and
WHEREAS, a robust K-12 STEM education will lead students to successful transition to higher education in engineering; now, therefore, be it
RESOLVED by the Senate, the House of Delegates concurring, That the Department of Education be requested to establish shared goals for an engineering program of study, and assign a shared responsibility for this program between the existing science, mathematics, and technology disciplines; and, be it
RESOLVED FURTHER, That K-12 engineering not be subsumed by just one curriculum domain, but only taught in conjunction with science, mathematics, and technology education by teachers with appropriate training in the engineering design process, the scientific method, science, and manufacture to specifications and constraints.

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		education. There were three engineers including me, a number of education school personnel including two technology education faculty members from ODU's School of Education, a chemistry professor, and science museum personnel. The workshop was led and facilitated by the VDOE assistant superintendents who were responsible for science and math and for technology education. The final report draft from the VDOE to the Governor and General Assembly was not sent out to the sixteen members of the advisory committee for editorial comment and corrections. There were several misinterpretations in the report that could have been caught by such a step, but, rather, it was publicly released as SD-13 in December of 2011. The VDOE had for years been severely (even structurally) stove-piped with respect to technology education and science/math education with engineering assigned to technology education. SJ308 was an attempt by its sponsors to get the three existing departments to work together to develop an appropriate position on addressing engineering education – it was not intended to restrict the result to the existing departments. It was meant to be enabling – not restrictive. In December 2012 in response to a VDOE NOIRA regarding revisions in teacher licensure regulations, two of Virginia's leading and largest engineering and technology professional organizations, the Virginia Manufacturers Association (VMA) and the American Council of Engineering Companies-VA (ACEC-VA), submitted a recommendation that the state create an engineering endorsement with two clear purposes in mind: • Ensuring that high school engineering teachers are highly qualified in engineering content education • Removing barriers to bringing engineering majors from universities into the Virginia teaching workforce To this end, these industry leaders submitted a specific recommendation for the wording of such an endorsement…wording that was very close to the wording of 8VAC20-23-330 before you today. In addition to the joint ACEC-VA/VMA submittal, letters of support for the submittal were sent by several individual engineering and technology leaders from industry and academe. In addition to the proposed endorsement wording, the team of five engineering and technology education professionals developed and submitted to VDOE a proposed set of competencies for a teacher preparation program in engineering. This proposal was modeled on the template already in use for a physics teacher preparation program in Virginia colleges and universities. Both proposed regulations were approved by ABTEL in May of 2013 and recommended to the VBOE, which approved them on June 27, 2013. They then underwent scoring and vetting in the executive branch as the first part of Stage 2 of	

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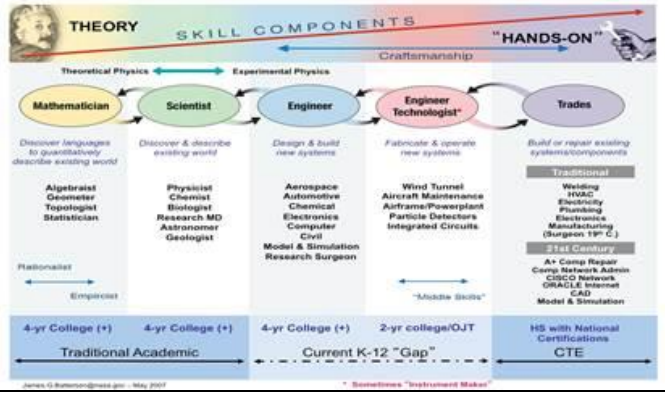
		the VA Regulatory Town Hall Process and have come before you today after that vetting and scoring. SUMMARY Unlike a physics, biology, earth science, chemistry, or math major, an engineering major cannot get a provisional teachers license upon college graduation with a content area degree. The engineering major must take an additional 12 hours of technology education courses to be endorsed in technology education and begin teaching. Moreover, there is no requirement that engineering teachers in Virginia have significant formal coursework of the type taken by engineering majors, thus depriving high school engineering students of a teacher with significant engineering content knowledge. 8VAC20-23-330 was developed in collaboration of practicing engineers from academe, government labs, and industry and technology education professionals and is aimed at assuring that (1) high school engineering teachers have an adequate background in engineering knowledge and (2) removing barriers to engineering majors entering the Virginia teaching workforce. In addition, 8VAC20-543-280 defines the competencies that Virginia's colleges should meet as a guideline in creating an engineering teacher preparation program. See chart:  	
Jarrod Haselbauer, Prince William County Schools	8VAC20-23-330. Engineering.	I have been a teacher in Virginia for the past 5 years, and have 10 years of experience overall. Most of those years I have taught the Project Lead The Way Engineering curriculum, and I am a Master Teacher and pilot school for the Computer Science & Software Engineering course. I oppose the proposal (8VAC20-23) creating an additional path for engineers to gain teacher licensure. Virginia Code (8VAC20-23) currently offers options for certification that are based on sound reasoning. Multiple studies have shown that content knowledge is NOT enough to make a good teacher. Sound educational pedagogy and training is an essential part of good teaching, and it includes far more than the ability to apply	

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		formulas to a purpose. Engineers are always welcome in the teaching profession as long as they have gone through the necessary training and gained the background knowledge & skills that will allow them to succeed in the classroom - which includes pedagogy, classroom management and preparation skills. Content knowledge is important, but alone does not a SUCCESSFUL teacher make. As it currently stands, there is only one college in the state of Virginia that has a Technology Education undergraduate degree, and this past year that program graduated NO teachers because all of those students went into industry. We cannot make an already tenuous situation worse by adding further requirements and more specializations in a field where the state and most of the country is facing massive shortages over the next 10 to 20 years. There is a high need in every state on the East Coast for more Technology Education teachers, and making it more difficult to earn certification for classes that are in high demand will mean students will suffer from lack of opportunity or lack of understanding if they are taught by someone without educational training. As posted by a coworker and friend of mine, George Bishop, I share the following: In the majority of comments posted I see no actual statistics provided that support the need for a stand-alone engineering discipline. The following publications should be read and digested prior to making a determination to add engineering as a discipline or making any changes to the regulations for endorsement for Virginia. This effort to change the existing Virginia Code is unnecessary, arbitrary, and redundant. Such a change will weaken the standards already in place and by which Technology Education teachers demonstrate on a daily basis the application of mathematics and science (engineering) through the use of technology. Science, Technology, Engineering and Mathematics (STEM) education is alive and well in Virginia without the proposed changes. http://www.asee.org/papers-and-publications/publications/college-profiles/2011-profile-engineering-statistics.pdf http://www.theatlantic.com/education/archive/2014/03/the-myth-of-the-science-and-engineering-shortage/284359/ http://www.tbp.org/pubs/Features/Su09Brown.pdf http://www.urban.org/research/publication/eye-storm/view/full_report	
Steven Barbato	8VAC20-23-330. Engineering.	I'm here today to share important information regarding activities that support technology and engineering educators from national perspective. ITEEA has a strong tradition and extensive history of supporting technology and engineering educators at all levels across the country. Our research, professional development,	

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		curriculum, and assessment efforts are driven by the unique ability of our educators to utilize technology and engineering content and practices in order to bring STEM to Life for ALL students! The opportunity for ALL students to learn STEM through an engaging engineering design lens provides them vital opportunity to become both technologically and engineering literate. The 2014 National Assessment of Education Progress (NAEP) released the Technology and Engineering Literacy assessment framework, which identifies what technology and engineering knowledge and skills should be expected of ALL students. NAEP directly involved the technology and engineering educator profession to develop and inform its assessment. The NAEP framework broadly defines technological and engineering literacy as "the capacity to use, understand, and evaluate technology as well as to understand technological and engineering principles and strategies needed to develop solutions and achieve goals." NAEP issued this statement with the release of the TEL assessment:"…it is the time for technology and engineering literacy to take its place alongside the traditional literacies in reading, mathematics, and science as a set of knowledge and skills that students are expected to develop during their years in school." The NAE (National Academy of Engineering) project, funded by Chevron, is motivated by increasing prevalence of Prek-12 engineering education in the United States, and increasing expectations for science teachers to connect science learning with engineering design created by the *Next Generation Science Standards*. NAE President C.D. Mote Jr. supports this effort by stating "LinkEngineering provides the first-ever platform for K-12 teachers and informal educators to work and learn as a community toward the goal of improving the reach and quality of U.S. precollege engineering education." ITEEA, along with all of its Virginia Technology and engineering educator professionals welcome the opportunity to work with the entire engineering community to build an even stronger and more viable partnership moving forward – one that assures that all Virginia students have the opportunity to advance through their educational experiences and emerge into our society as technologically and engineering literate citizens!	
Jon VanDeventer, Virginia Director of School Engagement for Project Lead the Way	8VAC20-23-330. Engineering.	Project Lead The Way is a national nonprofit organization that provides a transformative learning experience for K-12 students and teachers across the U.S. to develop in-demand knowledge and skills necessary to thrive in an evolving world. We currently serve 36 Virginia school divisions with students enrolled in engineering courses at middle schools, high schools, technical centers, and Governor's STEM or Health Science Academies.	

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		We recognize that the most important factor in a student's academic success is the quality of the teacher in the classroom, and that the best teacher endorsement policies provide adequate flexibility necessary to place the most effective teacher in the classroom. PLTW supports state regulations that award endorsements for licensed teachers who successfully complete rigorous professional development. We applaud you for considering an alternative pathway to teach engineering and we respectfully request you ensure current and future technology education instructors are allowed to deliver engineering content. As you are well aware, teacher shortage in critical content areas is an issue in many states across the nation. The Virginia Department of Education has identified math and science grades 6-12 as two of ten critical shortage areas and the most difficult to fill. These same teachers are ideal to teach high school engineering. We must find ways to increase flexibility to enter the teaching profession without compromising quality. We must make finding, hiring, and retaining qualified instructors a priority and encourage math and science teachers to consider attending professional development to teach engineering. If the proposed endorsement for engineering id passed, we believe it is critical that both current and future technology education instructors are allowed to deliver engineering content. This will ensure that engineering programs remain accessible to all students within our great public school system.	
Goochland County Public Schools	8VAC20-23-330. Engineering.	Goochland County Public Schools are currently offering at least two engineering courses being taught by current Career and Technical Education teachers; at least one of them is a dual enrollment course being offered through James Madison University. The purpose of these classes is to help expose students to engineering, while at the same time providing the necessary pre-requisite engineering courses. The Commonwealth of Virginia offering an engineering teaching endorsement could potentially create a problem in that most Engineering teachers also teach other courses. Whereas we have an excellent Engineering program now, we could not sustain a full time teacher without them teaching other courses. We would be comfortable if the Tech Ed endorsement could also continue to teach engineering. The role of secondary education is to expose students to a variety of interests in an effort to help the student identify their passions.	
Johnny J. Moye	8VAC20-23-330. Engineering.	I do not support the proposed Engineering Endorsement. Engineering should be available to everyone, not just the select few students who plan to be engineers. The engineering design process is a broadly applicable skill that all students should learn and use to solve real life problems. Virginia's technology education program already presents students with opportunities to take courses that challenge them with hands on activities that use the engineering design process while practicing the mathematics and science students they learn in their core courses.	

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		Virginia's technology program is very successful in teaching engineering. During the 2014-2015 school year there were 312 schools with 9,063 students enrolled in 12 different courses that contained engineering in the title of the name. Over the past 10 years, 48,262 students took these same elective courses. Certainly there are more courses that teach engineering design and habits of mind (e.g. geospatial technology, electronics technology, construction technology, architectural drawing, etc.). STEM education is on the minds and lips of many educational leaders today. The main issue with creating a valid STEM program is to integrate the practice of science, technology, engineering, and mathematics together. This integration is already occurring in many Governor's STEM Academies. If we are to create another engineering program requirement, it will further isolate those four areas of STEM versus creating true integration. I do support the requirements laid out by Senate Joint Resolution 308 passed by the General Assembly in 2011. In 2012, Dr. Patricia Wright submitted a letter to the Virginia General Assembly providing the plan for Virginia to use existing mathematics, science, and technology courses to teach engineering. By collaborating, these teachers will learn from each other, use common examples in their lessons and therefore strengthen student success in all course work, even beyond mathematics, science, and technology courses. In conclusion, creating a more rigorous engineering endorsement requirement will not be in the best interest of the majority of students in this great Commonwealth. By doing so, we will create additional teacher shortages and provide engineering courses to a select few students versus to all students who would otherwise benefit from learning engineering. The bottom line is not winning the argument of how and by whom engineering should be taught. It should be about ensuring that engineering programs are available to all students. By doing so, our students will be the winners.	
Austin Mantay, STEM instructor, engineer	8VAC20-23-330. Engineering.	I am a STEM teacher & a PROFESSIONAL ENGINEER w/ 4 college degrees. My father worked for NASA for 40+ years, and I have been around the engineering disciplines my whole life. That being said, I am one of the FEW STEM teachers in Virginia that would qualify to CONTINUE to teach the engineering courses our students need. Yes, it would be a UTOPIA if fully educated engineers with real world experiences could teach the STEM courses with the word 'ENGINEERING' in it, but it is a *genie wish, riding a unicorn looking for a leprechaun with a pot of gold*, a.k.a., it will NEVER WORK. Example: Engineers that get out of universities with a 4-5 year bachelor or another 2-3 years for the graduate degree, will want to make the 80k-140k+ a year they deserve, not the 40k a teacher makes. Plus, most schools only have 1-2 bells of	

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		engineering courses per year, so the 'engineers' are also going to teach photography or construction, which they will not want to do. Also, in my 14 years of teaching, I have watched 5 different engineers try to retire/ transition into teaching STEM, and 4 only made it just 1 year and the other made it 1.5 years, before going back to industry in the middle of the year. They often are brilliant, but have no idea on what classroom control is (they can't handle teenagers). This coupled with a paycheck that is 33% of what they were earning, in a field where there are PLENTY of engineering jobs available, why would they stay? I DO NOT SUPPORT this bill, as it will drop back the TECH ED/ Trade & Industries/ STEM education system that we have been building up since the 1980's. Students love doing hands on activities, and many of the high school engineering teachers I know are TECH ED/ Trade & Industries/ STEM educated, and are still *GREAT ENGINEERING INSTRUCTORS.* Often students learn math and science principles while applying engineering skills. If you pass this silly pants of a bill, each school will just re-adopt the 2 year Principles of Technology Curriculum from the late 90's, and the engineering teachers will still teach the SAME WAY, so don't waste our tax dollars trying to slow us down, we will just shift directions to continue to teach the students of tomorrow engineering principles. The comments from these individuals have the wrong attitudes/ trying to get great STEM teachers transferred/ forced into moving/ resignation. The engineers making 80k-140k will not apply for those pie in the sky jobs you're dreaming up.	
Benjamin A. Lilly, American Council of Engineering Companies - Virginia (ACEC/VA)	8VAC20-23-330. Engineering.	In December of 2012, the American Council of Engineering Companies - Virginia (ACEC/VA) and the Virginia Manufacturers Association (VMA) jointly submitted a proposal in response to a NOIRA regarding revision of "*Licensure Regulations for School Personnel*". In our submittal, we supported the creation of a new engineering endorsement for high school teachers, and, via this public comment, now support the resulting regulation 8VAC20-23-330 - Engineering endorsement. ACEC/VA is the largest engineering firm association in the state, made up of more than 80 independent engineering firms representing more than 5,000 employees throughout Virginia. ACEC/VA brings together engineering firms and offers the opportunity to connect with others in their industry and tackle the issues that the engineering community faces. One of those issues is workforce hiring difficulties, caused in part by a lack of sufficient numbers of students choosing to pursue careers in engineering following completion of their K-12 education. ACEC/VA believes that the current proposed engineering endorsement, 8VAC20-23-330 will accomplish the following elements: 1. Ensure high school engineering teachers are highly qualified in	

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		engineering content coursework; and 2. Remove barriers to bringing engineering majors from universities directly into the Virginia teaching workforce; and 3. Provide multiple pathways to an engineering endorsement while maintaining appropriate engineering content area knowledge, skills, and experience Again, on behalf of both ACEC/VA, we support the creation of an engineering endorsement 8VAC20-23-330 for high school teachers in Virginia.	
Christopher Burns, Teacher	8VAC20-23-330. Engineering.	A separate license for teaching engineering courses is not needed or necessary. I have been teaching for 4 years now and I have taught engineering at the high school level for 2 of those years. I teach a rigorous amount of Math and Physics that astound my peers who are current Engineers in the field. Those that wish to teach after being an Engineer can already do so following one of the already created routes. This proposition is unnecessary and has the potential to create more problems in Virginia than it can solve.	
Dr. Mary Eckert, Chesterfield County Public Schools Department of CTE	8VAC20-23-330. Engineering.	As a 28 year Career and Technical Education (CTE) professional educator (administrator and former teacher), I am not in favor of a separate license for engineers. There are already routes for professionals to enter teaching. Technology Engineering Education teachers are in high demand and it is difficult to find enough applicants for current positions. Adding separate license for engineers will hinder rather than help our dire situation.	
Dr. Charles J. Camarda, Sr. Advisor for Engineering Development at NASA's Langley Research Center (LaRC)	8VAC20-23-330. Engineering.	I began my career as a research engineer at LaRC in 1974 with an undergraduate degree in aerospace engineering from the Polytechnic Institute of Brooklyn. I conducted research analysis, design, and testing in high-speed/hypersonic vehicle structures and thermal protection systems received my Master's Degree in Mechanical Engineering from George Washington University in 1980 and a PhD in Aerospace Engineering from Virginia Tech in 1990. I was a technical branch head for the Thermal Structures Branch for five years prior to my departure to NASA's Johnson Space Center (JSC) after being selected for the 16th Astronaut Class in 1996. I flew one Space Shuttle Mission, STS-114 Return-to-Flight following the Columbia disaster and became the Director for Engineering at JSC following my mission. I served a detail assignment to NYU Polytechnic for two years where I taught several engineering design courses and led an effort to infuse creativity and innovation into the engineering curriculum there. While at NYU, I also taught several engineering design courses with students form over 40 local high schools in the New York/New Jersey areas. I am currently the Sr. Advisor for Engineering Development at NASA LaRC. In 2007 I worked with the Governor's Panel on education in the state of Virginia to develop an engineering program of study in high schools in the state of Virginia. I have also been working these past 5 years while at NASA to develop integrated programs of study in engineering design by connecting students in college, high school, and middle school and the faculty and educators with subject matter experts (SMEs) in industry, academia, and the government. I am also on the educational	

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		boards of several museums, universities and non-profit organizations. I believe it is time we connect students with engineering at an early age and believe it is a natural way to connect the scientific principals they are currently studying with the physical laws which form the basis for engineering study. To me, engineering helps excite and motivate young learners by allowing them to experience the "right-side" of their brain and the joy of creative discovery and problem solving. Understand the rigorous mathematical principles which relates the theoretical understanding of the physical world around us requires, at the very least, an engineering undergraduate degree. Engineering requires the mathematical and numerical understanding to accurately model and represent physical behavior (fluid mechanics, structural mechanics, thermodynamics, heat transfer, electrical flow, etc.) and to experimentally test and validate theoretical/numerical models. This understanding, and thus the ability to teach this understanding, is impossible without a prior degree in engineering. I agree with the recommendations as stated in 8VAC20-23-330 and recommend that engineering educators in the State of Virginia have a degree in engineering from an accredited institution.	
Douglas Bitterman, Engineer	8VAC20-23-330. Engineering.	I appreciate the opportunity to submit these comments in strong support of the proposed engineering endorsement for high school teachers in Virginia. I am an Engineer that has been employed with the global engineering firm CH2M HILL for the past 26 years, all as a resident of Virginia. I have a Master of Science degree in Civil Engineering from Stanford University and specialize in the investigation and remediation of environmental contamination. I have also been actively involved for more than 10 years via a managerial role I hold at my company in promoting STEM education in Virginia, particularly the 'E' in STEM. In this role I have directly engaged as a speaker on engineering topics in numerous K-12 classrooms, elected to sponsor STEM-related programs such as FIRST Robotics at several schools, and currently serve as a Board Member of the Virginia Beach Education Foundation. I also previously served as the Chair of the Education Committee of the American Council of Engineering Companies (ACEC), Virginia Chapter. This Committee's mission is to promote the 'E' in STEM in the Commonwealth of Virginia on behalf of the consulting engineering community. During my term as the Education Chair of ACEC Virginia, I was fortunate to play a role in helping to promote the 'E' in STEM in a variety of ways, including ACEC Virginia's sponsorship and my involvement with the annual Virginia Children's Engineering Convention, and via support for the proposed engineering endorsement. The primary reason the Virginia engineering community supports this endorsement is due to the difficulties engineering firms face with respect to workplace hiring. This difficulty is caused in part by a lack of sufficient numbers of students choosing to pursue college-level education and careers in engineering following the completion of their K-12 education. In order to remedy this situation,	

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		my perspective is that the engineering community would like to see: • Significantly more opportunities in Virginia's K-12 school system for students to be exposed to instruction in Engineering, and • Virginia K-12 students receive the educational foundation sufficient to more successfully pursue Engineering at the university level. The engineering endorsement is an important first step to achieving these goals because it addresses two critical issues that are problematic in Virginia's K-12 education system: 1. *Assuring that high school engineering teachers are highly qualified in engineering subject matter*. The technology education leadership in Virginia took the initiative decades ago and helped introduce engineering concepts into K-12 education in the Commonwealth, and that contribution has been invaluable. However, in the 21st century, this is no longer good enough. Engineering is a fundamentally different discipline than both science and technology. Other commenters that have preceded me (that are Engineers) understand this and have pointed out the important and substantial differences between Engineering and these other disciplines, so I won't repeat them here. More true Engineering courses that properly introduce K-12 students to Engineering are needed both to promote the career path and to prepare students for the very rigorous programs of instruction required to achieve college degrees in Engineering. From the decaying infrastructure problems looming over the U.S. to the ever more complex, global issues facing mankind, many more Engineers are needed than our education system is currently producing to innovate and to design the solutions to these problems. And in order to have more true Engineering courses and to properly teach our current Engineering courses, such as those within the Project Lead The Way (PLTW) program, we need teachers that are highly qualified to teach Engineering, working alongside the technology education teachers that so ably teach existing coursework in technology and applied technology. 2. *Removing barriers to engineering majors teaching in Virginia's high schools*. The current endorsement scenario where Engineering is inappropriately viewed as a technology education discipline is a significant barrier for Engineers who wish to teach. An Engineer already fully qualified to teach Engineering based on their degree in Engineering is forced to complete an additional 12 hours of technology education courses in order to meet the requirement for a technology education endorsement. This makes no sense. This barrier must be removed in order to bring more Engineers into the teaching profession and to lay the foundation for more true Engineering coursework to be added to high	

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		school curricula across the Commonwealth. I have read the earlier comments posted by some members of the technology education community arguing for preservation of the status quo, and there are several recurring assertions in these comments that I believe are incorrect and warrant a response: 1. *Claim: Engineers will not want to teach because they can make much more money elsewhere*. This is a very cynical viewpoint that presumes that people with engineering degrees are motivated predominantly by financial considerations more than people with degrees in science, math, or technology. The irony is that people with a technology background sufficient to be qualified as a technology education teacher could also make substantially more money than teaching by pursuing a job in advanced manufacturing, with a firm offering technology services, or through many other avenues. In my view, it is the barriers that currently exist for majors in Engineering to obtain a teaching endorsement, as explained above, that are the primary impediment for Engineers to become teachers. If those barriers were removed, and Engineers could become teachers without the significant added investment of 12 or more credit hours of unnecessary coursework to achieve an endorsement that doesn't even reflect their discipline, the candidate pool would grow. 2. *Claim: Schools cannot sustain a full-time Engineer as a teacher because there are so few engineering classes that they would need to teach other courses*. This is a valid issue, but one that I view as having relatively easy and potentially win-win solutions. Where necessary, Engineers are natural candidates to round out their schedules by teaching science or math classes, for which it also can be difficult to find enough teaching candidates. All degreed engineers have very strong backgrounds in physics and mathematics. And the specific engineering disciplines add on top of that significant coursework in other sciences. For example, all Chemical Engineers have an extremely strong chemistry background, as will a Geotechnical Engineer in Earth Sciences. Ideally, the science and mathematics teaching endorsements would be amended to recognize that Engineers have substantial science and math coursework as part of their degrees and to eliminate unnecessary barriers for them to meet the requirements of the various science and math teaching endorsements as long as they have achieved at least a minimum number of credit hours in specific science or math coursework (e.g., a minimum of 18 credit hours). But even absent that, it is highly likely an Engineer, given his or her very strong science and mathematics background, could achieve a science or mathematics teaching endorsement without much difficulty by taking the relevant Praxis II exam(s). And I would also argue that science and math teachers with an engineering background would enhance instruction in	

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		these disciplines by being in a unique position to credibly point out to students by example how the theory in science and math can be directly applied to real-world innovation and problem-solving, potentially causing students to be more interested and engaged in science and math coursework. Of course, if Engineers would like to teach technology education coursework in addition to Engineering, then it would be appropriate for them to complete the requirements to obtain a technology education endorsement in addition to their engineering endorsement. 3. *Claim: The proposed engineering endorsement will somehow restrict engineering courses to a select few students who plan to be engineers versus all students that would benefit from exposure to engineering*. This point of view is illogical, and is illustrative of the fundamental lack of understanding of the differences between *Engineering* and *Technology* that is unfortunately so pervasive in the technology education community. Other than some of the coursework in the PLTW program, there are very few courses currently being offered in Virginia high schools that are actually true Engineering courses, and that includes some with the word "Engineering" in the course title. These include *technology education* classes that touch on the concept of engineering design, but do not delve into the connection between science and math and the design process to the extent necessary to be considered true Engineering courses. That said, these *technology education* courses are absolutely needed, and the proposed engineering endorsement should not and will not impact the ability for technology education classes to be offered or for technology education teachers to teach them. But the objective of the proposed engineering endorsement is to establish the necessary foundation for more true Engineering courses to be offered in Virginia high schools in addition to these technology education classes. This can't happen unless teachers of Engineering are fully qualified and competent to do so. In conclusion, I would like to share an article in the Richmond Times-Dispatch I read the other day that illustrates how the status quo is not working to achieve the 21st century workforce that Virginia needs to be competitive in the global marketplace. Our education system is the most critical element in building that workforce and providing opportunities for the residents of the Commonwealth to be as successful as possible. The full article can be viewed at: http://www.richmond.com/news/virginia/article_95b358ee-21c3-58c8-b34b-fba1c6687ef8.html. The article in part describes Governor McAuliffe's attempts to woo major companies to bring jobs to Virginia and quotes him as saying: "I can't bring in jobs unless we have the workforce. That is the secret sauce." The article specifically mentions Governor McAuliffe's conversation with the CEO of Canon, which earlier this year announced a $100 million investment in its Newport News, Virginia facility and is currently looking to locate a new research and development	

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		center. The Governor made a pitch to the executive for the project to be located in Virginia. Governor McAuliffe indicated that the CEO replied that Canon is currently struggling to fill 18 engineering jobs in Newport News, and stated: "He said if you can't fill those, how are you possibly going to handle my new R&D facility? Which is a very powerful statement." Please enact the proposed requirements in 8VAC20-23-330 and establish an engineering endorsement for high school teachers in Virginia as a small but important step forward.	
Thomas Oliver Mooney, Jr., Electrical Engineering Graduate of Virginia Commonwealth University School of Engineering.	8VAC20-23-330. Engineering.	I am a Hickory High School graduate, and an Electrical Engineering Graduate of Virginia Commonwealth University School of Engineering. It has come to my attention that there is a proposal, which would create a separate Engineering program of study. I believe that this would be a mistake. The better solution would be more support of the Senate Joint Resolution 308, which would create a collaborative teaching environment, as opposed to separating the disciplines further. Engineering heavily relies on mathematics, and science. The classes that we have in technology inspired me to become an Engineer. I believe that integrating the STEM subject classes would greatly improve the effectiveness of preparing young minds for the college environment. There are programs in Virginia now that are excellent at this integration, programs such as TSA (Technology Student Association), FIRST (For Inspiration of Science and Technology), and VEX (VEX Robotics Competition). These, as well as other, programs offer the integration of Science, Technology, Engineering, and Mathematics in a way that no single class can. The addition of a separate Engineering class is unnecessary. Engineering itself is just the act of problem solving, using math, science, and technology to help with that process. The classes that we have in Technology are already using that mentality successfully.	
Debra Shapiro, VA Technology & Engineering Education Association President	8VAC20-23-330. Engineering.	I am writing in regards to the proposed Engineering Endorsement. As a Technology and Engineering teacher for 29 years I am able to teach all of the material for each of our courses including those that are engineering. My degree not only included all of the “Technology Education” requirements but also included Physics, Chemistry, Algebra, Geometry, Trigonometry, and Calculus. For someone to say that I do not have the understanding of those courses is absurd. I have also taken some engineering courses in my college career as I thought that may be the career path in which I was heading. Experience taught me differently. In my years as an educator I have had the opportunity to complete internships at NASA, shadow workers in various fields including engineering, and attend workshops to update my skills and knowledge. Every one of us with a License in Technology Education completes course work and/or professional development to renew our license every five years. I guarantee many of those folks are taking	

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		classes to improve their skills and knowledge in the courses they are teaching, including engineering. The Virginia Technology and Engineering Education Association offers staff development for all Technology and Engineering educators as does the International Technology and Engineering Educators Association. I have worked as a drafter in an engineering firm and was required to do all of the calculations and design that our engineers preformed. Yes, they checked behind me, I was rarely wrong. I had the knowledge base to perform these tasks. Many of our Technology and Engineering Educators have come from industry. They have the ability to teach as they earned their degree in Technology Education or went through a Career Switcher Program where they learned pedagogy. This same opportunity is available to all of the engineers that have a desire to teach engineering in Technology and Engineering Education. One does not need to be an engineer to teach engineering just as one does not need to be a chemist to teach chemistry. As Technology and Engineering educators we do not teach "Trades" that is part of the Trade and Industrial program. This seems to be a misconception with the engineers that desire a new licensure. Yes, we can build, weld, operate machinery, work on computers and cars, etc. Many of those programs are housed in Career and Technical Centers with in our school systems but not at our schools. Technology and Engineering Education is not a training ground for trades or any career. Technology and Engineering Education is an opportunity for students to explore Technology and Engineering. My main concern in all of this is the fact that we have a shortage of Technology Education Teachers. If an Engineering Endorsement is going to be required to teach an engineering course you are going to further reduce the pool of teachers. I lost one of my student teachers to engineering a few years ago. He had a Technology Education degree. He has become a successful engineer. If we are losing Technology and Engineering Educators to engineering due to the financial benefits, how many engineers are going to want to teach for half of the salary they would make as an engineer? Finally, our high schools are not the training grounds for any career. Careers are created in trade schools, colleges, and universities. Our high school students are exposed to enough engineering (and other career clusters) to decide if they are interested in the field. If the interest exists, those students will choose to go to college and complete a degree in engineering. The smartest thing would be for the Engineers and Technology and Engineering Educators to team up, work together and give the students the best of all of STEM.	
Stephanie Parker, Technology Education Teacher	8VAC20-23-330. Engineering.	I am a Technology and Engineering Education teacher at Blacksburg Middle School. I teach 6th-8th grade Introduction to Technology and Inventions and Innovations classes. I am also a FIRST Lego League coach for two robotics teams	

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		and the Technology Student Association advisor for both Blacksburg Middle and Blacksburg High School. As a Virginia K-12 educator for the past 11 years, and a member of both the Virginia Technology and Engineering Education Association (VTEEA) and International Technology and Engineering Educators Association (ITEEA), I am writing to express my deep concern regarding proposed changes to the Regulations Governing the Review and Approval of Education Programs in Virginia. Specifically, my concerns target the proposed regulation, Engineering as a new program of study and 8VAC20-23-330, the addition of an engineering teaching license. If passed, this will affect the current high school pre-engineering programs and teachers. The addition of a new subject area is not needed in the already overcrowded education system. Many of our career and technical education classes here at the middle school level have already been cut due to funding issues. Virginia led the Nation in 1988 in developing the first high school engineering courses within the subject area of Technology Education, and later incorporated nationally recognized engineering courses developed by Project Lead The Way (PLTW) that align with post-secondary engineering programs. As a result the Virginia Technology Education programs have produced students who successfully completed post-secondary 4-year Engineering programs not only through Virginia universities, but others across our nation. The Technology Education curriculum is nationally recognized by the NSF, NASA, NAE, and other credible organizations as addressing the K-12 technology and engineering content and practices. My associations and their members have advocated for STEM partnerships for many decades. At the K-12 level in Virginia that partnership was specified in 2011 with the passing of Senate Joint Resolution 308, which established a shared responsibility among the existing science, technology, and mathematics subjects. Rationale for NOT endorsing a new engineering program includes the following: 1. As submitted to the Virginia DOE in 2013 the proposed revisions to the Virginia Technology Education Regulations infuses engineering in a manner that aligns with the ITEEA national Standards for Technological Literacy and the National Assessment of Educational Progress (NAEP) for Technology and Engineering Literacy. 2. K-12 engineering education nationally, and in Virginia, is focused on the engineering design process, as specified by the American Society of Engineering Education (ASEE), ITEEA, and the Next Generation Science Standards. 3. Technology Education is an approved subject area in Virginia K-12 education that teaches the engineering design process. 4. Engineering courses, including Project Lead the Way, are currently taught	

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		in Technology Education. I ask that the infrastructure for STEM education, inclusive of program regulations, funding, and professional development, remain directed at the existing science, technology, and mathematics education programs in Virginia.	
Victor Terry, Technology and Engineering Education teacher	8VAC20-23-330. Engineering.	I am a licensed Technology and Engineering Education teacher with 20 years of teaching experience. I should note that my teaching license gives me no more right to go out and engineer a civil structure than an engineer's license gives them to come in and teach my class. My four year Bachelor of Science from Virginia Tech is not inferior to a four year degree in Engineering; it is different. I am a licensed educator that has proven through the years to have the ability to manage a public school classroom and relate to and teach the students about Technology and Engineering Education. I have former students in all walks of life, including engineering. Not one of my former students has thanked me for teaching them the extra math, physics, science, etc… the majority have thanked me for caring enough about them to provide guidance along the way, and for teaching them to think critically, problem solve, and to apply the use of tools like the computer, 3d printer, CNC technology, or even hand tools from the tool cabinet to solve problems. I am not in favor of changing legislation to let any professional engineer walk in off the street to teach Engineering classes in our public school system. We have a mechanism in place for career switchers who want to do that and meet those licensing requirements. Are there truly Engineers out there that think they are so far superior to those of us with degrees in education, that they can walk in and do our jobs with no preparation in our field? Has our society so undervalued educators as to afford us so little respect? I have a hard time believing that Engineers want to take the pay cut and work in our public schools. I chose to be an educator, because it is what I wanted to do. I have a passion for Technology and Engineering as well as teaching and helping students. I have taught classes in middle school, high school, and even dual-enrolled college classes during my tenure. I helped to initiate an Engineering class at a new STEM-H academy that was dual enrolled with a community college in collaboration with a professor of Engineering who taught at both Virginia Western Community College and Virginia Tech. I believe in rigorous programs and high standards as well as authentic assessment. I don't believe a paper and pencil test is the best way to prove to a teacher that you can ride a bicycle. The student should get on the bike and ride and the teacher will see the skill is valid. Let the educators teach, the engineers design, and politicians may God guide you to take care of your constituents with wisdom. By all means make Technology and Engineering a required subject discipline like Math, Science, and Social Studies. Every student needs the knowledge base and it is long overdue, but please do not tell me that a licensed Technology Teacher in Virginia cannot handle a high school, middle school, or even elementary school engineering class. If you need further proof, ask current students studying in ABET accredited engineering programs who also matriculated through our Technology and	

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		Engineering programs statewide. If you want to help further, bring back accredited teacher preparation programs to train technology and engineering teachers like the program in Technology Education that was closed at Virginia Tech. Those who can, do. Those who can do more with less, teach. Thank you for the forum to voice my opinion.	
Dr. Thomas E. Pinelli, NASA (Retired)	8VAC20-23-330. Engineering.	I support the proposed engineering endorsement – qualifications, requirements, and certification – for high school teachers in Virginia and believe that the adoption and implementation of this endorsement (1) is an important step in the process of adding engineering to the high school curriculum; (2) will dramatically bolster STEM (science, technology, engineering, and mathematics) education in the Commonwealth; and (3) will increase educational and career opportunities for all Virginia students and teachers, especially females and minorities. <u>Brief Bio</u> I grew up in Southside Virginia and now live in Yorktown, Virginia. I hold a Ph.D. from Indiana University, Bloomington in Information Science with minors in information and technology policy. My research interests include the information-seeking behavior of engineers (as distinct from scientists), engineering education, workforce development, technology policy, and STEM education. I have authored over 300 publications on these and related topics and I have received numerous awards, recognitions, and commendations for my research and professional contributions. I am a Senior Fellow of the Society of Technical Communication, an Associate Fellow of the American Institute of Aeronautics and Astronautics, a Senior Member of the American Society for Engineering Education, and I have served on a number of engineering education committees. <u>Relevant Work Experience</u> I recently retired after 40 years of federal service from the NASA Langley Research Center. In my last 10 years of service I held two important positions: (1) Deputy Project Manager for Education, NASA Modeling and Simulation Initiative and (2) NASA University Affairs Officer (UAO). In Assignment 1, I managed the MODSIM K-16 Education and Training Demonstration Project, an effort that focused on developing modelling and simulation (MODSIM) as both content and a methodology for enhancing and enriching K-16 STEM (science, technology, engineering, and mathematics) education and training with the goal of creating a 21st Century workforce. In Assignment 2, I served as the UAO. As the UAO, I represented and promoted NASA to high schools, community colleges, colleges, universities, consortia, and community-based (for profit and not-for-profit) STEM organizations. My position required me to develop, manage and evaluate internships programs that prepare, recruit, and retain students in the STEM pipeline and facilitate high school, undergraduate, and graduate students interaction with NASA engineers and scientists. I also served on several engineering education working groups,	

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		committees, and panels. **Engineering** Leadership in technological innovation is essential to U.S. economic and national security. In an increasingly global, knowledge-based economy, technological innovation – the transformation of new knowledge into the design of products, processes, and services of value to society – is critical to competitiveness, long-term productivity growth, and improved quality of life. The nation's primacy in technological innovation, its national security, and its economic vitality depend on a wide array of factors, one of which is engineering education and practice. Engineering is not applied science. Science is an introverted activity that is concerned with the natural world. Scientists study problems that are usually generated internally by logical discrepancies or inconsistencies or by anomalous observations that cannot be accounted for within the present intellectual framework. Engineering, on the other hand, is an extroverted activity that is concerned with the designed world. Engineers use the design process – identifying a problem, designing a solution, testing and improving the design – to produce workable solutions for our nation's most pressing problems and to create the innovations that give us modern life with all its advances and conveniences. Engineering yields solutions that are workable and effective; it seldom pursues the why. Generally speaking, engineers produce knowledge and designs, products, and processes (artifacts); they make decisions based on incomplete data and approximate models. A high-profile, recent case in point, the Boeing 787 Dreamliner: Building on existing and new (breakthrough) "game-changing" technology, the Dreamliner has "leap frogged" the competition and revolutionized the contemporary large commercial aircraft (LCA) industry to now become the most modern airplane in the world. The creation of the 787 Dreamliner has given Boeing a competitive advantage over its competition. In designing and developing this aircraft, the engineers of Boeing used advanced manufacturing, computational methods, and systems integration to transform commercial air travel while offering the LCA industry a wide-body aircraft with exceptional environmental performance by significantly lowering operating costs, providing superior fuel efficiency, and weight reduction through the use of lightweight and environmentally friendly carbon composites. **Engineering Versus Technology** Engineering and technology are intertwined terms in modern society, especially in popular culture. However, technology is not engineering although it is a process dominated by engineers, engineering technologist, technicians, and "craft" skills. The word "engineering" is often used as a synonym for technology. Sometimes the terms are used interchangeably as the distinctions between the two	

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		are not always clear and because technology is often a consequence of engineering and science. Engineering is often characterized as having four main branches -- chemical, civil, electrical, and mechanical -- each with multiple subcategories. Technology is a human endeavor. Technology is additive. America's standard of living and way of life depend upon technology. Hence, an understanding of what technology is, how it works, how it is created, how it shapes and influences society (and vis-versa) becomes increasingly important. Through the years the definition of "technology" has changed. Collectively, technology can be seen as a collection of tools, techniques, skills, methods, and processes that, as an output, usually manifests itself as a process, product, system, service, or an entire industry. The word 'technology' can also refer to a collection of knowledge, techniques, and tools and can be combined with a discipline to create specific technologies – automotive, communications, construction, manufacturing, and transportation – that are representative of specific industries or clusters of industries. Engineering courses in a high school curriculum might include engineering fundamentals, engineering design, statics and dynamics, and fluid mechanics and high school technology (education) courses might include foundations of technology, technology and society, technological literacy, manufacturing systems, and power and transportation. In terms of STEM education, engineering and technology complement one another and one does not negate nor diminish the importance of the other. However, one is not a substitute for the other. Engineering and technology are separate subjects each requiring separate knowledge and skill sets. With the passage of the proposed engineering endorsement, Virginia moves from STEM to STEM education and the (instructional) integration of science, technology, engineering, and mathematics. Our students, education as a whole, and the Commonwealth will be better for the change. Engineering Teaching Endorsement With the passage of proposed engineering endorsement College graduates with a bachelor's degree from an ABET-accredited program will find it easier to enter the teaching profession. Students will now be guaranteed authentic and expanded course offerings and highly qualified, teachers who are also subject-matter (engineering) experts. Virginia's work-force, economic development, and job creation efforts will be strengthened. I strongly support the creation of the proposed engineering endorsement for high school teachers for these reasons.	
Ed Prior, Retired from NASA Langley	8VAC20-23-330. Engineering.	I received my BS in engineering from the University of Illinois, my MS in astronomy from UVA, and an MS in management information systems from GWU. I have limited experience as a teacher, but my wife Margaret taught at the	

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		middle and high school level for 6 years. During 40 years at NASA Langley, I had many opportunities to be involved in both science and engineering projects and activities. My last 7 years at NASA were spent working with university professors and both undergraduate and graduate students from every state in the USA who came to spend internships at Langley---some for the summer, some for the whole year. I read Mr. Jim Batterson's comments here and strongly agree with him that changes need to be made in how Virginia---and for that matter, how the United States---approaches the teaching of engineering at our schools. While physics is an important subject for engineers to learn, and mathematics is the indispensable language of both physics and engineering, the reality for our national economy is that engineers are the prime movers when it comes to developing innovative products using the principles of physics. And yet it is difficult to find any American schools that provide a solid grounding in engineering principles for its students. I am astonished that, in the example that Mr. Batterson provides in his comments, an MIT chemical engineering major is required by the State to take 12 hours of technology education courses in order to receive a provisional technology education license to teach in high schools here. The proposed 8VAC20-23-330 endorsement can give our students a much stronger background in engineering, help end or greatly modify the odd Virginia restrictions on bringing in fresh engineering college grads to teach them---and help position more Virginia young people to begin productive and innovative careers as our nation fends off engineering and technology challenges from our economic competitors all over the globe.	
Ronald Vickers, Elected Council Member for the Town of Luray	8VAC20-23-330. Engineering.	As an elected council member for the Town of Luray, Virginia I attended this year's annual Virginia Municipal League conference held at the Richmond Marriott. The keynote speaker for lunch Tuesday was our Governor Terry McAuliffe. His speech focused on the accomplishments our Commonwealth has made with his focus on building a new Virginia economy. He spoke on promoting education in his next budget with emphasis on our ability of producing STEM graduates with skills ready for existing and future jobs. I agree with educating our youth for employment. I am a public school teacher at Luray High School. I've been teaching Technology Education electives for over 30 years now. In fact I've served as President of our Virginia Technology Education & Engineering Association and am currently the Valley Regional President. Throughout my career I have seen my profession change with the times. State approved courses in the Commonwealth are reflective of the changing world as they should be. As I am sure you know, an industry certification is important for students to earn in high school. I was pleased to hear Governor McAuliffe recognize this fact and his desire for certifications be continued and even expanded. However I am writing to express my deep concern regarding proposed changes to the *Regulations Governing the Review and Approval of Education Programs in Virginia*. Specifically, my concerns target the proposed Engineering as a new program of study and the addition of an engineering teaching license. If	

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		passed, this will affect the current high school pre- engineering programs and teachers. I really do not understand the thoughts behind creating a NEW license to teach engineering subjects in our public high schools. I was part of the professionals in developing the first high school engineering courses within the subject area of Technology Education, and later incorporated nationally in recognized engineering courses developed by Project Lead The Way (PLTW) that align with post-secondary engineering programs. Students are already being challenged with engineering subject matter in our existing curriculum. Virginia's Technology Education curriculum is nationally recognized to address the K-12 technology and engineering content and practices. I and many more teachers like myself have fought for our inclusion in STEM conversations that have come forth. If I remember correct, the 2011 Senate Joint Resolution 308 established a shared responsibility among the existing science, technology, and mathematics subjects. I simply do not believe adding another license category will help matters. In fact I see a severe shortage of newly trained and certified Technology Education professionals in our state. I regularly get emails announcing openings to fill the positions of retiring personnel and other folks leaving the profession. I know of positions that went unfilled this fall and programs are beginning to close due to lack of qualified teachers. I prefer the VDOE to focus on getting more in-state universities to offer Technology Education undergraduate degrees to my students that display an interest upon leaving high school. For Virginia to have the skilled workforce for existing and future jobs, I believe we should work more closely with community colleges and universities to teach those skills. To create another licensure requirement simply works against what we have that is working now. The VTEEA has already submitted to the VA DOE in 2013 the proposed revisions to the Virginia Technology Education Regulations that infuses engineering in a manner that aligns with the ITEEA national Standards for Technological Literacy and the National Assessment of Educational Progress (NAEP) for Technology and Engineering Literacy.	
Benjamin A. Lilly, American Council of Engineering Companies (ACEC/VA)	8VAC20-23-330. Engineering.	In December of 2012, the American Council of Engineering Companies - Virginia (ACEC/VA) and the Virginia Manufacturers Association (VMA) jointly submitted a proposal in response to a NOIRA regarding revision of 8VAC20-23-10 et seq. - "*Licensure Regulations for School Personnel*". In our submittal, we supported the creation of a new engineering endorsement for high school teachers, and, via this public comment, now support the resulting regulation 8VAC20-23-330 - Engineering endorsement. ACEC/VA is the largest engineering firm association in the state, made up of more than 80 independent engineering firms representing more than 5,000 employees throughout Virginia. ACEC/VA brings together engineering firms and offers the opportunity to connect with others in their industry and tackle the issues that the	

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		engineering community faces. One of those issues is workforce hiring difficulties, caused in part by a lack of sufficient numbers of students choosing to pursue careers in engineering following completion of their K-12 education. ACEC/VA believes that the current proposed engineering endorsement, 8VAC20-23-330 will accomplish the following elements: 1. Ensure high school engineering teachers are highly qualified in engineering content coursework; and 2. Remove barriers to bringing engineering majors from universities directly into the Virginia teaching workforce; and 3. Provide multiple pathways to an engineering endorsement while maintaining appropriate engineering content area knowledge, skills, and experience. Again, on behalf of both ACEC/VA, we support the creation of an engineering endorsement 8VAC20-23-330 for high school teachers in Virginia.	
Philip A. Reed, Technology Teacher	8VAC20-23-330. Engineering.	I have over 20 years of experience as a secondary technology teacher, administrator, and program coordinator for a technology teacher preparation program in Virginia. There are key issues and questions that need to be addressed with the proposed engineering endorsement in the *Licensure Regulations for School Personnel*. After reviewing ABTEL and BOE materials, it appears the engineering regulations were proposed by a handful of supporters. Further review of Virginia Town Hall postings from this limited number of supporters clearly indicate there are gross miss-perceptions regarding K-12 technology and engineering education. For example, technology education is not "trades" and does not prepare technicians. *Trade and Industry* is the area in the Virginia licensure regulations that covers the trades. So, although the procedures for proposing regulation changes have been followed, there appears to be a severe lack of validity in the process. Virginia has been a national leader in secondary engineering education ever since the Technology Education Service created the first high school engineering courses in 1988. With such a rich history and strong leadership through the Virginia Technology and Engineering Education Association (VTEEA) and the Virginia Children's Engineering Council, why weren't these organizations part of this process? Such an effort as the proposed engineering endorsement clearly perpetuates the silo approach to STEM education and is counter to Senate Joint Resolution 308 passed in 2011 that specifies engineering education within Virginia is the shared responsibility of science, technology, and mathematics. The Board should consider how this proposal arrived, reject it, and develop a process and/or task force to move K-12 technology and engineering education forward in a deliberate, collaborative manner.	

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Kenneth Noonan, Chesterfield County Public Schools	8VAC20-23-330. Engineering.	I have been teaching Technology Education at both the Middle School and High School levels for 14 years. I currently teach Middle School Pre-Engineering Courses and am my school's Activities Director. My current certifications are in Technology Education and Administration and Supervision K-12. I work in Chesterfield County which is one of the largest school systems in the state and serve on the county STEAM committee which is working to enhance and bridge our curriculum to make our students more able to apply STEAM problem solving to real world issues and problems. I am also an officer of the Virginia Technology and Engineering Education Association and member of the International Technology and Engineering Education Association and the Virginia Children's Engineering Council. Requiring a separate endorsement to teach Engineering Courses will not solve the proposed issue. Teachers with the Technology Education endorsement are already versed in teaching the Engineering Design Process, Materials Properties, Modeling and Simulation, Cross Curricular Application of Science and Mathematics, CAD Applications, CNC Applications, Coding, etc. Students enrolled in CTE courses coded to Technology Education are already learning and applying engineering concepts. Requiring a separate endorsement for Engineering will create a larger disparity in an area that is already experiencing a critical shortage of teachers. The better solution would be to offer more incentives to entice more qualified teacher candidates into the field and into teacher preparation programs. The issue is not about the current teachers that we have, it is about not having enough teachers to provide solid Technology and Engineering instruction. Engineers create new Technology. Technology Education's main focus is on that fact. We teach how to create innovative solutions to problems through design and application. We are not the enemy to engineering. We are the product of engineering and one in the same. We already have strong State and National relationships with Science and Math Education. Requiring a new, separate Engineering endorsement is reinventing a wheel that is already working. That is not smart engineering. This endorsement is separating in nature and not collaborative. I have personally been involved with rewriting the curriculum for Technology Education courses to increase rigor and relevance to better fit the modern world and educational setting. I love engineering and so do my students. That is why they are in my class. They like to be challenged and using the Engineering Design Process to solve problems. There are a ton of excellent Engineering classes across the state learning solid engineering foundations. I am sure there are classes out there not doing what they are supposed to as well. A smarter solution than wiping the field clean with a separate endorsement would be to pinpoint with precision the weaker programs and bring them up to par. Make sure teachers are getting the professional development to stay current and relevant. My class curriculum changes every year as it should since Technology and Engineering's job is to make changes to solve	

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		problems. Instead of building a new table with the Engineering endorsement I would like to invite everyone to the existing Technology Education table to break bread and work towards making our curriculum the strongest it can be. The time and resources being utilized in this argument would be better served collaborating together. United we stand, divided we fall.	
Albert L. DiMarcantonnio, Williamsburg, Virginia	8VAC20-23-330. Engineering.	I urge your support for the proposed 'engineering endorsement' requirement for high school teacher qualifications and certification. The proposal addresses the key point differentiating engineering from technology and applying rigorous math and science disciplines that are essential to understanding, practicing and teaching engineering with the competency and passion that will hopefully make a positive difference in our next generation of engineering professionals. My opinion herein is personal and is based on a forty-year career in civil government, the military and private industry in programmatic, operational and technological/engineering roles as a practitioner, manager and executive. I took my technical education in Aerospace Technology at the Academy of Aeronautics where I also earned an FAA Aircraft and Power plant Mechanic License. At Columbia University I received a B.A. in Government. I also attended the U.S. Naval War College, Command and Staff program. A Naval Aviator, I have over 3000 flight hours in jet and prop aircraft and served as Airframes Branch Officer and Aircraft Division Officer aboard aircraft carriers and ashore. I have a Commercial Pilot license and am qualified in the DC-8 aircraft. I worked as a systems engineer for Pacer Systems, Inc. developing the multi-media training curriculum for the SD-330 commercial aircraft, was technical advisor for the P3C Orion avionics upgrade, and managed the training and installation of the Anti-Submarine Warfare Data Interpretation and Analysis Center for the Canadian Forces. In an active Reserve capacity I was Commanding Officer of several space units of national importance and the architect and first Director of the Naval Space Reserve Program. For GE, I was manager for C3I programs involving imagery sensing and space communications projects and was book manager and on-orbit electrical systems analyst for the Defense Satellite Communications System. At GTE I was manager of Imagery and Intelligence Systems and later, manager of commercial enterprises building a business base in Africa. For NASA, I served as Business Manager and as Deputy Director of the International Space Station Program. Detailed to DoD, I was Deputy Undersecretary for Space programs, Program Executive for the congressional interest Pacific Disaster Center and representative to the Vice President's Global Disaster Information Network initiative. I later served at the National Reconnaissance Office. I am currently the Director of Special Programs at NASA Langley Research Center in Hampton, Virginia. In 2014 I was publically awarded for my support to STEM education by the Governor's School for Science and Technology. Technology is not engineering. I have worked in both roles as an operator, manager	

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		and executive for aircraft, space craft, communications and ground based sensor systems and platforms. Technology involves the assembly, diagnostics and maintenance and repair of hardware and software systems. Engineering involves innovation, invention and creativity in the conceptualization, analysis, design, test and systems integration of hardware, software systems and operational processes. Engineering requires a working understand and applications facility of specialized systems and familiarity of various adjacent engineering disciplines. This understanding is based on the practical knowledge of math and science academic tools that allow for complex thought and cost effective and efficient design and test protocols that would not be readily intuitively obvious. Engineering involves coming to know what you don't know and finding solutions to unchartered problems and many times, building previously unimagined capabilities through the final design process. A competent engineer has working knowledge of a broad range of engineering disciplines in addition to his/her specialty -- mechanics, electrics, civil, chemical, materials, computer and others. These are often applied to the development of aerospace, automotive, infrastructure, naval, information and other platforms. Engineering is 80% intellectual, 10 % manual, and 10% inspirational. Technology is 15% mental, 80% manual and 5% inspirational. One may be trained to be a technologist but one must be educated to be an engineer. Technology is working with things that exist and are documented and known in their structure and operation. Engineering is imagining things that do not exist, designing them and interfacing them to practical applications. The design process itself requires complex critical analysis, an imaginative problem solution set, real or simulation protocols, and production and operation documentation. Education is gotten through classical academics in the hard engineering, science and math disciplines and practical internships and industry experience. Engineering must be precise, sustainable, and mission and environmentally survivable. A casual understanding or application of the tools of engineering quite often leads to disaster and a bad day for the technologist, manager, policy maker, executive, and public and private user of the engineering equipment. Engineering requires attention to detail and does not lend itself to generalization. An engineer makes a very long term and challenging commitment to academics and practice that relies heavily on truly quality based teaching in the early years. Many people live in the world that others build. Engineers are builders and responsible for raising the standard of living to the previously imaginable standards enjoyed today. Teaching engineering is not a certification that should be arbitrarily conferred on the basis of politics, tenure or casually related skills lest the student body be disadvantaged. Teachers as well as students must be accountable to a regents-like certification process by an independent agency lest we end up with paper certifications with no performance improvement in our next generation of engineers and abandon the advantages of good engineering to other nations. The proposed	

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		endorsement should be specified and applied in the most effective letter and spirit to serve the students. The endorsement should not be watered down to accommodate a jobs program but to uplift those talented teachers who would rise to the hard work of teaching as a national mission and a calling. The current population of qualifiable teachers should be allowed sabbaticals to develop meaningful experience and be appropriately compensated separate from their contemporaries based on the academic difficulties, teaching challenges and engineering leadership qualities required to be a STEM teaching professional. The proposed engineering endorsement is a step in the direction of building a student body with a competency, imagination and passion for engineering. Yet, this will happen only if they are exposed, taught and mentored by those with the same competency, imagination and passion.	
Toby Smith, Engineer	8VAC20-23-330. Engineering.	I oppose the idea of requiring an Engineering degree, or an Engineering endorsement to teach Engineering-related classes that are already being taught by Technology Education teachers. I earned my B.S. in Technology Education from Virginia Tech in 2002. Upon graduating with my degree, I spent one school year teaching high school Architecture and Engineering Drawing and Design, and then left teaching to work as a full-time Engineer in 2004, and have worked as an Engineer ever since. I have worked as a Quality Engineer, Industrial Engineer, Project Engineer, Process Engineer, Six Sigma Black Belt, and currently work as a Manufacturing Engineer along with leading the Configuration Management efforts at my company. Dictionary.com defines • Technology as: the branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment, drawing upon such subjects as industrial arts, engineering, applied science, and pure science. • Engineering is defined as: the art or science of making practical application of the knowledge of pure sciences, as physics or chemistry, as in the construction of engines, bridges, buildings, mines, ships, and chemical plants. First, in some of the other comments posted here, I saw comments that said that Technology and Engineering are different because Technology focuses on how to use tools... and Engineering focuses on design and creation. Right, wrong, or indifferent... those comments don't hold a lot of meaning if you actually stop and think about it. For example... a Tech Ed teacher may teach how to use CAD software. What is CAD software used for? In my job as an Engineer, I use CAD to DESIGN and CREATE new tools, parts, fixtures, etc. that make my life or my customers' lives easier. That means I'm using Technology to Engineer, right? How about a Tech Ed teacher who teaches computer programming? A programmer learns the rules and grammar of programming languages so that they can DESIGN and CREATE new software to solve new problems or answer a need. Again... the	

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		know-how of recognizing, using, and creating Technology was required to do the work of Engineering. See where I'm going? I think we'd all be hard-pressed to think of a tool (technology) that isn't used for designing, creating, or applying concepts (engineering). Can you have one without the other? Second, let's just be honest. If a new college graduate steps into the job market with their shiny new engineering degree in hand, and the high probability of landing an entry level Engineering job with a $70K+ per year salary, why would they choose to enter into a career making roughly half that? With the shortage of qualified teachers that already exists, why would rules be put in place to make the shortage exponentially tougher to fill? Unless something is about to happen to drastically increase teachers' salaries, this idea that a meaningful number of college graduates with Engineering degrees are going to choose to teach instead of work as an Engineer is wildly unrealistic. Teachers work long, hard hours (most likely longer hours than most salaried Engineers I'd bet), for much, much less pay. You have to be realistic. On top of that, it is inappropriate to believe that an Engineering degree will give the skills needed to handle a classroom full of students and the multitude of new challenges they present every day. That idea seems to have been forgotten in many of the other comments in this forum. Engineers don't exactly have a reputation for being the most outgoing, people-person types of personalities... Technology doesn't exist without Engineers... and Engineers don't exist without Technology. Technology is far too wide of a topic to believe that Engineering can contain it, and Engineering is far too wide of a topic to think that Technology can contain it. But either Technology or Engineering without the other falls short of its great potential. To say that designing and creating is limited only to Engineering is inappropriate. It's also short-sighted to believe that Technology is the only path to design and creativity. To believe that you can separate Engineering from Technology is simply incorrect, which is why I oppose the idea of requiring an engineering-specific endorsement to teach classes already properly taught by Technology Education teachers.	
Jennie Chiu, University of Virginia	8VAC20-23-330. Engineering.	I write in strong support of the proposed engineering endorsement. As engineering is the real-world application of science and mathematics, introducing engineering in precollege settings can not only improve science and mathematics content learning, but also increase student interest and motivation in STEM careers. The proposed endorsement strengthens opportunities for students to be involved in engineering, especially those who may not traditionally be interested in STEM fields.	
Bruce Davidson, Science Specialist for Newport News Public Schools	8VAC20-23-330. Engineering.	I am currently a Science Specialist in Newport News Public Schools. I currently work with mentoring new science teachers, science curriculum, professional development, and support for physics teachers. I have over 40 years of experience with K -12 education and taught physics at Warwick High School, Newport News, Virginia. I have past experience with CTE teaching in Newport News, STEM programs, and I have mentored math teachers as well as science teachers. I strongly support 8VAC20-23-330 and believe that these changes are needed if we are serious about an education curriculum in high school, with high standards, to	

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		prepare our students for university level engineering schools. As a physics teacher, I strived to give my students exposure to the field of Engineering and took numerous college trips to Engineering programs at Old Dominion, University of Virginia and Virginia Tech. I had a large number of students go into engineering as a career. I also saw former students struggle on the university level because their preparation in high school did not meet the needs of university engineering course work. I believe that a "highly qualified" teacher for a true engineer course should have an instructor with an engineering background with at least 12 hours in engineering courses from an accredited college or university. This is currently the case with physics and chemistry. I have worked with career switchers programs and have witnessed the expertise that former scientist have brought into the high school classroom. Why is this same process not available for Engineers? I have worked with former engineers that wished to teach engineering in high school, but were not willing to go the CTE route with its technology education endorsement. This engineering endorsement is necessary to support an engineering curriculum in the K-12 curriculum. It also provides a teaching resource, currently unavailable, for engineers who wish to switch careers.	
Steven W. County, Engineering Teacher	8VAC20-23-330. Engineering.	I am currently an Engineering teacher in a suburb of Richmond. I had worked for AT&T, Lucent and other manufacturing companies over my 17 yr. career after earning an Engineering Degree from VT. I switched careers about 13 years ago. I have been amazed at the lack of understanding that the public high school administration actually have concerning the engineering profession. I strongly support 8VAC20-23-330 and believe that these changes are needed if we are serious about an education curriculum in high school, with high standards, to prepare our students for university level engineering schools. Engineering at the University level is rigorous and competitive. I am very lucky as the 2 schools where I have taught were Engineering Specialty Centers - and we had multiple engineers on staff. It is possible to attract Engineering graduates that enjoy teaching. Virginia Tech has implemented degreed program for teaching for Engineers. Check out Engineering Education at VT. For example, we expect that Science, Math and Spanish teachers (to name a few) all have degrees in their respective specialties – should we expect the same from Engineering? Many of our leaders have stated that there is a critical need for engineers and that engineer are needed for a successful economic future. I believe that a "highly qualified" teacher for a true engineering course should be an instructor with an engineering degree or a STEM degree with at least 12 hours in engineering courses from an accredited college or university. This is currently the case with math, physics and chemistry – other STEM curriculum.	

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		Engineering should be no different and with better educated instructors - better education for the students will result.	
Candy Cunningham, Educator	8VAC20-23-330. Engineering.	As a taxpayer, voter, child advocate, and professional educator; I strongly oppose 8VAC-20-23-330 Engineering endorsement. An engineering endorsement to teach K-12, will not guarantee a better education in high school engineering classes because content knowledge does not replace teaching methods, training in adolescent development, knowledge of educational law, or classroom management skills. According to the Journal of Effective Teaching, "An individual may possess a substantial amount of subject-matter knowledge, yet be unable to design and implement instructional methods to enhance student learning due to a lack of pedagogical ability." (2002) Effective teaching requires a combination of subject matter knowledge and pedagogical ability. 1. This endorsement only benefits an unemployed engineer, it does not benefit students. This endorsement promotes putting an engineer into the classroom with no experience-teaching children; no experience managing classroom behavior; no experience-developing curriculum that meets the needs of a variety of learners; and no knowledge of educational law. The existing Career Changer licensure program, ensures that people with a degree in another field take essential pedagogy classes in educational law, lesson planning, classroom management, and educational psychology. These pedagogy courses ensure that the Department of Education is creating safe and effective classrooms for all students. Putting an engineer into a classroom without theses pedagogy courses is irresponsible and will end in failure for the career changer engineer and the students. This engineering endorsement was designed by engineers who DO NOT WANT to TAKE the pedagogy courses but just want a job teaching in the public schools. 2. Creating an engineering endorsement for K-12 school teachers across the state of Virginia does not benefit students in any way. This endorsement will end engineering classes that are being taught successfully across the state, by experienced Career and Technical Teachers who have both engineering content knowledge and pedagogy certifications. 3. This proposal is a waste of taxpayer money because there is an effective procedure already in place. Firstly, there is already a licensure plan in effect for career changer engineers. Secondly, the state is already providing engineering courses to high school and middle school students under the Career and Technical program. Career and Technical instructors who have degrees in education also have completed professional Technology Education certification to teach: Introduction to Engineering Design, Principals of Engineering, Aerospace Engineering, Civil Engineering and Architecture,	

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		Computer Integrated Manufacturing, Digital Electronics, Engineering Design and Development, as well as Environmental Sustainability. The current Career and Technical teachers have both pedagogy and engineering qualifications. Why would you replace effective teachers with engineers who do not have any experience-teaching children? 4. The engineering endorsement will limit access to engineering classes to children across the state. The endorsement will force smaller counties who cannot afford or find an engineer to teach already existing courses to drop engineering courses. 5. Under the existing plan, engineering courses are offered by Career and Technical teachers as an elective course with no prerequisites to students. These education professionals will tutor students who are struggling in math or language arts to improve their SOL scores. If there is an engineering endorsement, engineers who "teach" typically want to place prerequisites on the engineering classes thus offering the classes to an elite group of students who have passed calculus. This would be a true waste of taxpayer money because the current enrollment to Introduction to Engineering at a single high school would drop from 175 students to 40 students; thus eliminating any groups of students who struggle with math. If engineers want to become teachers, then follow the current career changer path and teach under the Career and Technical program. Engineering Endorsement only benefits out of work engineers who are trying to create a niche in education by eliminating effective teachers who already teach engineering classes. It is a detriment to students who want to learn about engineering in high school to give them a teacher who only has subject knowledge and no experience-teaching children or desire to take pedagogy classes. Please, for the sake of our students, do not pass this proposal!	
Kurt P. Thompson, Professional Engineer (PE)	8VAC20-23-330. Engineering.	I have been a registered Professional Engineer (PE) in the Commonwealth of Virginia since 1985. I earned the title after graduating with a Bachelor's of Science Degree in Mechanical Engineering from the University of Virginia, then passing the Engineer In Training Exam, then passing the PE exam after acquiring sufficient documented experience. I explain this background to provide an understanding of what it takes to be called a 'Professional Engineer' and what it takes to be able to state your name with a "P.E." behind it. I am also a Project Management Professional (PMP) having met the requirements of the Project Management Institute and passing their exam, and I taught high school engineering in Henrico County for five years. Since I left engineering to become an engineering teacher I was a "career changer" having to become endorsed in Technology Education. I was required to take over fifteen hours of additional classes and pass the relevant Technology Education Praxis. I know what is required	

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		to become Technology Education Endorsed. I am writing in support of the new Engineering Teacher Endorsement. When I taught the high school engineering related curriculum I worked with Career and Technical Education (CTE) teachers. These teachers were well qualified, and some were truly inspirational with a zest for what they were doing. This Engineering Endorsement effort is not intended to disqualify these teachers. It is simply about using the best talent to fill a very important engineering education void in our public education system. Engineering is a greatly misunderstood profession and one of the most challenging to acquire. Perhaps it is because very few students see anything about engineering during formal schooling but that needs to change. Based on both my experience as a teacher and in industry, it is my strong belief that the integration of engineering teachers into a high school's faculty will increase interest in CTE and vice versa. With their advanced theoretical and applied math and science training engineers explain to high school students why they need to learn advanced math including Geometry, Trigonometry and Calculus, and the advanced sciences including Biology (for Biomedical Engineering), Chemistry and Physics. As I read some of the comments that have been posted in regard to this new endorsement I feel that it might be helpful to provide some of my experiences in industry as a practicing engineer working as a part of a production team – team being a key word. I worked in the aluminum industry for many years. Some of my experience was providing engineering services to numerous plants while being part of their internal consulting engineering group. At one point I worked in the aluminum company's Research and Development group and was in charge of the largest R&D Program in the company. Subsequent to the career with the aluminum company I worked providing consulting engineering services for my own company and for other companies. I currently provide mechanical engineering services at a polymer plant. If a company is well run then engineering and technicians are not rivals. They work together and this is what needs to be emulated in the school setting. Engineers do not try to do technicians' jobs and vice versa. While each may (and should) know a lot about the other's technical contributions, each also recognizes the other has a skill set that is different but complimentary to their own. The cooperative effort becomes one of identifying a problem, what is causing the problem, and what needs to be done to correct it. The engineer can run calculations to quantify the situation and outline some steps (make this bigger, that lighter, do this differently, use a tougher (fatigue related) material or a more corrosion compatible material, etc.) and the technician indicates what is easy to do or cannot be done. A seemingly straightforward example concerns a “one sided fillet weld” where the opposite side is inaccessible. These types of welds are used to attach small trapezoidal box beam stiffeners to a	

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		steel orthotropic deck. They are accessible from only one side and it is a fatigue sensitive connection. If not performed well fatigue problems leading to possible early failure will occur with only light stresses. In some cases what is needed to endure cannot be easily performed by the welding technician. The bottom line is the two team members have determined the current detail is difficult to make acceptably because the technician has difficulty making the required weld quality. In this way the technician shares his greater hands-on experiences with observations to help find alternative designs. There is give and take which is very beneficial. It is a symbiosis and/or teamwork relationship that causes success. The same should be true in preparing future engineering students for the rigors of college and therein lays the apparent need for a new Engineering Teachers Endorsement to work with CTE Educators. A similar symbiosis exists between engineers and scientists. When engineers are called upon to design new technologies to scientists' specifications, such as NASA's Hubble Space Telescope to seek out new extra-galactic images, or NASA's Mars Exploration Rover, engineers and scientists work shoulder to shoulder to design technology that will meet the scientists' needs, meet the mission constraints regarding weight, size, and durability, and meet the technicians constraints regarding manufacturability. Thus engineers require a major skillset in engineering analysis and design, with significant knowledge of advanced science and math, and an ability to understand and translate into acceptable design parameters, the technicians' knowledge of practical manufacturing constraints. I have read most of the Engineering Endorsement related comments. I perceive there are some erroneous beliefs by many opposing the new Engineering Teacher Endorsement. From what I read this new endorsement is not suggesting that engineers can take their degree in engineering and instantly qualify to walk into a classroom and teach as some opponents have opined. There are other requirements above and beyond the engineer's degree which will require them to learn the different teaching strategies, develop an understanding of the emotional and physiological development of adolescent students, how to control a classroom, etc. What is being said is that people with engineering degrees do not need an additional 12 hours in CTE related classes to be able to teach engineering. Moreover, they are better suited to teach a science or math than a CTE class which will help them fill their schedules to qualify as a full time teacher. What is also being said is that CTE Degreed Teachers can also teach engineering but they must demonstrate and pass specific and an adequate number of classes that help them understand *some* of the knowledge that an engineer must learn and use. The transition to highly qualified Engineering Teachers needs to start now. We need to fill the large understanding of engineering void that continues to exist despite the perceived progress that has been made in recent decades. This transition to use properly qualified teachers needs to start by enabling engineering degreed teachers to straightforwardly fill the role and by enabling CTE Teachers to transition to	

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		become qualified through additional relevant education. There is also a need to clarify what is relevant such as addressing the confusion in regard to computers, technology and engineering. Technology and computers are not synonymous although many have that opinion. I have dealt with educators and professionals who continue to be confused about this. The accurate use of the term "technology" includes computers but when someone speaks of the technology the Egyptians used to build the Great Pyramid they are not speaking of the “computers” the engineers used at that time. Being literate in computer programming is not synonymous with technology and, while required for engineering, does not, in and of itself, qualify anyone to do engineering work. Also as a matter of clarification: Does it make sense for any CTE Teacher to automatically be qualified to teach high school engineering? As it stands now the only requirement to teach a high school engineering class is to be CTE Endorsed so any CTE Teacher regardless of their forte' qualifies. In the opposite vein, consider that a Chemical Engineer who becomes CTE Endorsed is then certified to teach wood working (something the engineer has never studied in engineering coursework) but is not certified teach Chemistry – a discipline in which the chemical engineer has likely had 18 or more hours of advanced college coursework! As stated earlier, engineers have a special interactive relationship with both scientists and technicians but they are not the same. A career as a technician can be started while in high school. Sometimes it requires additional training but, by and large, the "competencies" (the term used to describe the CTE Students' mastery of a subject matter and the metrics with which a CTE Teacher's success is validated) for becoming a technician are very different from an engineering candidate. CTE Teachers sign off that they have taught and the student has mastered the relevant competency. Competencies as they are used for CTE students are not as appropriate for a high school engineering student. Engineering students have at least four years of college ahead of them needing 70 or more credit hours of specific math and science classes in order to acquire their degree. They are not going to be able to take their "competencies" learned in high school to get an engineering job. When I was in college virtually all engineering disciplines (e.g. Civil, Electrical, Mechanical, Nuclear) studied the same core classes for the first two years. The only exception was for Chemical Engineers. It was not until the third year that we began to get into our engineering discipline related classes. Within the first two years of college my colleagues and I had taken 16 hours of Calculus, 11 hours of Physics, 4 hours of Chemistry, 3 hours of Material Science, 3 hours of Statics, 3 hours of Strength of Materials, 3 hours of Thermodynamics, 3 hours of Dynamics, and 3 hours of Electrical Engineering. We also had 3 hours of drafting which was our only CTE type class. I suspect the curriculum has changed very little and we had room	

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		for only two or three general electives in the first four semesters. I was a mechanical engineering major so in the third year I took more Thermodynamics, Fluid Mechanics, more Dynamics, Machine Design, and Kinematics of Machinery, and on it went. The fourth year included Heat and Mass Transfer. The classes were heavy math and science (particularly physics) related curricula and herein is where engineering and technicians differ in educational background, and it is also where engineering differs from someone majoring in CTE. The point is their educational background is very different and CTE Teachers without additional requirements do not have the correct perspective of what an engineer is because they have not had to deal with this type of subject matter. They have been trained to think like a technician so that they can teach future technicians. One big reason there is a current industry focus on the Engineering Teacher Endorsement is that there is a lack of engineers which slows our country's growth. Tracing the problem backwards, there are too few engineering college graduates because there are too few engineering candidates entering college. Many if not most engineering freshmen will not succeed in acquiring their engineering degree. Improving the success rate would be a big step toward filling this country's needs and it begins with a better understanding of what engineering is before applying to a school. It is my goal that by enabling engineers to become teachers with schedules comprised of classes they are best suited to teach (engineering, a math and/or a science) that they will enhance a school's faculty linking science and math, with engineering and related CTE classes to help improve the success rate of those interested in becoming an engineer, and providing practical real-world applications of advanced math and science to all students in those classes. Engineers teaching engineering can also clarify what is involved to be an engineer thereby preventing high school students and even college freshmen from becoming disenchanted with the quantity of difficult math an engineering degree requires causing them to drop out. A key point here is that the students know what they are getting into before applying to a college so those who start are more apt to persevere. We need to focus on the high school preparation for the students to not only have the proper prerequisites for engineering but to develop an understanding of why they need to know these prerequisites. There is often no one to provide this understanding in high schools. Engineers not only have to learn these subjects in detail they need to know how to apply them to solve problems. Who better to deliver these understandings to a high school student than an engineer? STEM is an acronym that comes from 'Science, Technology, Engineering and Math.' It is interesting that each of the subjects which are represented in the acronym currently have a Teaching Endorsement except for engineering (moreover, science even has separate endorsements for each of four sub-disciplines: biology, chemistry, earth science, physics). And yet being an engineer is one of the most challenging degrees to acquire as it requires significant knowledge of math, science,	

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		and technology along with its own unique engineering analysis and design skillsets. Why do we even question the need for this endorsement? Years ago CTE Specialists developed a model high school concept touted as the way of the future. It incorporated careers and what is needed to fill those careers into the high school curriculum to help the students understand why they are studying what they are being taught. The concept has merit and if Engineering becomes a Teaching Endorsement then the potential for this type of interactive synergy can ensue. CTE and Engineering Endorsements can evolve to mimic industry and society making the entire high school offering more valuable. It is with this background that I heavily encourage the Engineering Teacher Endorsement.	
Sridhar Kota, Professor	8VAC20-23-330. Engineering.	I am professor of mechanical engineering at the University of Michigan where I taught engineering design courses for over 28 years and consulted with numerous companies across multiple industry sectors. I am also the founder and President of a small engineering firm and served in the White House Office of Science and Technology Policy (2009-012) as the Assistant Director for Advanced Manufacturing where I championed the establishment of National Manufacturing Innovation Institutes. I have given much thought to eroding engineering skills particularly in the US over the past 20 years. It is the engineering prowess that helped us win World War II and put the man on the moon. Most of what we perceive as “rocket science” is actually “rocket engineering”. Science, mathematics, engineering and technology are distinctly different. It is unfortunate that our bumper sticker “STEM” lumps everything into one, and, while doing so, we virtually ignore the ‘E” in our K-12 curriculum. Science attempts to explain the natural world through experimentation and analysis, whereas engineering creates new technologies, products and process through creativity and synthesis. Technicians repair and maintain engineered products such as automobiles, HVAC, machinery etc. It is the engineers who create new products and processes. Engineering education teaches the principles of design, mechanics of materials, thermodynamics, structural dynamics, fluid mechanics, circuit analysis, design for manufacturing, solid state electronics etc. A person with an engineering degree should teach engineering. While, via this comment, I strongly support the idea of an engineering endorsement and particularly pathways 1,2,3, and 5 of the proposed endorsement regulation, I find pathway 4 to be too weak. You wouldn't want your barber to do brain surgery although barbers do spend significant time working near brains. Being in an engineering environment for X years is not a remedy for not having an engineering degree. A talented machinist could be in an engineering environment for 20+ years but that does not qualify him to teach engineering any more than it qualifies him to teach medicine or surgery. We all love skilled hands-on technicians because they know how to fix things. But, a technician is not an engineer. Knowing how to fix a	

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		car is not the same as understanding the thermodynamics of an IC engine and torque-speed characteristics of an electric motor to conceive a novel hybrid engine – if that's the type of innovations we need in the future then we should produce more creative engineers now and hire highly qualified teachers (engineers) who can produce them. Hiring technicians or science teachers is not the answer unless the goal is to simply check the box of teaching "engineering." Engineering is the only discipline that is responsible for creating everything around you that is artificial – automobiles, smart phones, Internet, aircraft, buildings, bridges etc. It is the engineers who apply the fundamental engineering principles, practices and philosophy to design products like iPhones, electric cars, prosthetic legs and jet engines. It requires fundamental understanding of engineering subjects I listed above and it requires creativity. Yet, we do not teach engineering in K-12. Most, if not all, young children are inherently creative. Somehow, slowly but surely our school system beats creativity out of them by the time they graduate high school. Creativity fuels the 1 percent "inspiration" of Edison's formula for "genius" and engineering fuels the formula's 99 percent perspiration to bring new products and process that meet societal needs. It is therefore important that we teach engineering in K-12 and it is critically important that we teach it well –starting with teachers who are highly qualified to teach engineering. I applaud your consideration of teaching engineering subjects in K-12 but please do not dilute it by settling for teachers without an engineering degree. Engineering courses should inspire students to apply what they learn to create new products. The courses should be infused with open-ended design-build-test projects. Without engineering analysis to inform and guide the design process it will reduce to a tinkering activity. Without a highly qualified teacher to teach engineering, we will simply check the STEM box but we will not be teaching real engineering.	
Kris Martini, Director of Technical and Career Education Arlington County Public Schools	8VAC20-23-330. Engineering.	He opposes the approval of the proposal to add engineering endorsement. Engineering design is already being used in schools throughout K-12. Engineers are not trained to be teachers. If the proposed requirement is accepted, engineering will be taken out of Technical Education. We should be integrating classes and creating models to show math, science and technical engineering working together to develop common activities that would show real-world connection to these students. Instead of proposing new requirements for engineering endorsement we should research, make a plan, create a model and collect data to find a better solution for the problem.	
Mark Ginsberg Ellen Rodgers; George Mason University	8VAC20-23-350. English as a second language prek-12.	Concern with the proposal to eliminate the 6 credits of Foreign Language requirement. Faculty believe that the foreign language requirement assists candidates in understanding and developing empathy for the language learner Including affective variables, the emotional energy, and how it affects learning a second language.	The proposed requirements for the English as a Second Language endorsement recommend 24 semester hours of coursework addressing teaching of reading and writing, English linguistics, cross-cultural education; second language acquisition, methods of English as a second language, and English as a

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			second language assessment. The six credits of foreign language were eliminated to allow for additional focus in these areas.
Dr. Karen Garza, Fairfax County Public Schools	Request for an endorsement for teachers of immersion programs.	We ask that the Board consider additional flexibility, and perhaps a new endorsement area, to satisfy the need for highly qualified immersion teachers due to anticipated rapid growth of the popular Language Immersion Programs around the Commonwealth. In immersion programs, students spend part of the instructional day learning in a language other than English and thereby acquiring that language. FCPS currently offers Immersion programs in a growing number of schools with plans to expand our Two-way and World Language Immersion offerings in order to better serve a changing student population and meet the interests and demands for world language education in our community expressed through the FCPS Portrait of the Graduate. The rapid growth in immersion programs nationwide has caused teacher openings in FCPS that are extremely hard to fill, as the current single path to serve as an immersion educator via an Elementary Education endorsement is making it too steep in time and cost for our area to still be an attractive destination for Dual Language/Immersion teachers. We advocate for the addition of a new Immersion Education endorsement, with a requirement for advanced proficiency in a world language and targeted coursework (that can also be met through assessment) to ensure quality immersion education. An Immersion Education endorsement would give a teacher highly qualified status to serve as a classroom teacher and would enable us to provide a more direct path to teaching for more candidates, especially those who are career switchers, move from Puerto Rico and other states. Utah, Rhode Island, and Illinois are among the states that have created a specific endorsement for Dual Language/Immersion Education in the past few years in order to respond to the growing demand for these effective programs across their states. As Immersion Programs are expanding to include more elementary schools and languages across the Commonwealth, a new licensure path has become critical to staffing and continued success of these popular and effective programs.	In Virginia, immersion elementary classroom teachers must be licensed and endorsed in both elementary education and the foreign language. There were not any additional endorsements proposed in the regulations.
Paul Joseph, Joseph Educational Consulting Services	8VAC20-23-350. English as a second language prek-12. 8VAC20-23-420 Library media preK-12	Consider reverting to the pre-2007 endorsement requirements for ESL. During that time-frame, individuals who completed an academic major in ESL were considered eligible to be hired. Now, even with a major, unless the person has the required 24 semester hours, one could be considered ineligible for the endorsement and cannot be hired without requesting a waiver from the DOE. Considering the difficulty in finding qualified ESL teachers, making this revision would be a small but needed change. At the same time, should the DOE keep the changes now listed in the proposed regulations, I would also recommend that rather than counting the six semester hours required for reading as content course work, you would make those six semester hours a professional studies requirement thereby reducing the content requirements to 18 semester hours. This would be in line with the reading requirements for both elementary and special education.	Licensure requirements are not waived; however, the proposed regulations continue to allow that modifications may be made in exceptional cases by the Superintendent of Public Instruction. Proposed modifications shall be made in writing to the Superintendent of Public Instruction.

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		Recommend that an additional option for earning at least a provisional license for school library media specialists be added. This would be for individuals who hold a non-school Master's Degree in Library Science. Rather than having to ask for a waiver to receive a provisional license from the DOE (which is normally the case in this situation), these individuals would automatically be eligible for a provisional license and be required to complete an additional course on the role of the library media specialist using the updated wording in the proposed regulations for that requirement. This would eliminate the need for a waiver request, particularly in an area where there are shortages, and which normally the DOE has approved the modification request. The expectation would be that a person with such a degree would surely have the content knowledge to handle the duties and if hired, receive a provisional license.	
Beverly Baker, Region IV	8VAC20-23-350. English as a second language prek-12. 8VAC20-23-420 Library media preK-12	Region IV members request consideration be made to provide a standard method for school divisions to obtain exceptions to provisional licensure in critical shortage areas such as ESOL and Library Media on an as-needed basis. The current method of requesting a modification to the regulations limits school divisions the ability to hire and fill positions in a timely manner. Establishing specific guidelines such as "being within 6 hours of completing content requirements for critical shortage areas" would allow school divisions to hire teachers who have the majority of the course work completed rather than placing a less qualified substitute in the hard to fill positions. As the shortage of teachers continues to increase, school divisions are worried about how vacancies will be filled in the future without a change in licensure regulations to support the need.	
Dr. Karen Garza, Fairfax County Public Schools	8VAC20-23-360. Foreign language prek-12.	We would like to express support regarding the following: The removal of the Test of English as a Foreign Language (TOEFL) requirement in the area of the Foreign Language endorsement.	Comments support the removal of the Test of English as a Foreign Language requirement in the area of the Foreign Language endorsement.
Susan Albaugh, Richmond Area Friends of the Gifted	8VAC20-23-370. Gifted education (add-on endorsement).	The Gifted Education specialists and coordinators of Region 1 are pleased that 4 classes (12 hours of graduate-level coursework) are required; however, we request consideration that the topics (rather than specific titles) of the courses include: 1) social-emotional and special populations, 2) curriculum models and differentiation, 3) identification and assessment, and 4) program planning and evaluation (rather than current trends). The change in #4 is to address the important ongoing work of gifted coordinators in evaluating the Gifted Education Plan/program of their districts.	Specific course titles are not listed in the *Licensure Regulations for School Personnel* as the names of course do vary among institutions of higher education.
Tracie Omohundro	8VAC20-23-440. Mathematics – algebra I (add-on endorsement).	We are facing a significant shortage of math teachers throughout the Commonwealth. In reading the changes, the only opportunity for math "relief" is the possibility for a Teach for America license. Otherwise, it appears that the changes make the math content tougher to access additional endorsements. While I understand the need for maintaining the integrity of the license, I would like to see some alternate pathways for licensure, especially in the area of	The proposed regulations do allow individuals to pass a rigorous assessment to demonstrate content knowledge in mathematics. The proposed regulations are reducing the number of years of work experience for the Career Switcher Program and the Experiential Learning route. Additionally, when employed by a

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		mathematics/Algebra.	school division, this option is recommended for individuals seeking an initial provisional license.
Pat Rose Douglas Floyd	8VAC20-23-440. Mathematics – algebra I (add-on endorsement).	Will those people who have Algebra 1 add on endorsement be grandfathered in if this action is approved? I think that those that hold the add-on endorsement should be allowed to retain the endorsement without taking the new proposed methodology class.	Individuals who hold an active Virginia license with an endorsement in algebra I do not need to meet new requirements to renew their license.
Mindy Abbott, Prince William County Public Schools, Region 4	8VAC20-23-550. Special education – general curriculum k-12.	All Region IV school divisions want to hire the most highly qualified special education teachers. However, Special Education is a critical shortage area and the reality is that we just don't have the applicants to fill the number of special education vacancies. This change will only result in having more substitute teachers placed in special education classrooms throughout Virginia. Additionally, the 9 semester hours that would need to be completed in order to be issued a provisional license, are courses that have become blended into Approved Programs. It will be very difficult for licensure specialists to determine if course work meets the specific content requirements as set forth by the VDOE Licensure Regulations. As an alternative, we would like to recommend changing the regulation to show completion of the 3 semester hours currently required and providing verification of enrollment in an approved licensure program.	The proposed regulations are amended to (1) remove the nine-semester-hour requirement as a prerequisite for the Provisional (Special Education) License; (2) delete the requirement of issuing Provisional Licenses for two years, instead of three, and require that assessments be taken during the validity of the first two years of the license; and (3) added the three-semester hour requirement as a prerequisite for the Provisional (Special Education) License.
Diane Painter, Shenandoah University	8VAC20-23-550. Special education – general curriculum k-12.	Upon reviewing the proposed revisions governing the review and approval of education programs in Virginia, it appears on p. 7 that candidates seeking an endorsement in special education-gen curriculum K-12 must have 12 to 15 semester hours in a content area (English, math, science or history/social sciences) in addition to passing a Praxis content exam. In my experience, I have quite a few psychology majors entering our university's initial licensure program in Special Education-General Curriculum K-12. Requiring them to take an additional 12-15 semester hours in a content area in addition to passing a Praxis exam is prohibitive and will only add to the teacher shortage because of time required to complete endorsement requirements. I have found that psych majors who add on content endorsements by passing the Praxis II exams in a content area are doing quite well teaching students with special needs (especially working with children with behavior concerns) and that by passing the Praxis II exams they also know the content students with special needs have to learn. Let's not make it harder to recruit good candidates into the field of special education- let's make the process doable and reasonable.	The specialization requirement for Special Education-General Curriculum was proposed in the *Regulations Governing the Approval and Review of Education Programs in Virginia*, not the *Licensure Regulations for School Personnel*. This proposed requirement has been recommended to be stricken.
Lera Johnson / Easter Seals, Serving DC|MD|VA	8VAC20-23-550. Special education – general curriculum k-12.	I have been a licensed teacher in Virginia for 41 years (PGP NK-7). I am a Developmental and Experimental Psychologist and Board Certified Behavior Analyst. I recently completed the graduate certificate in Autism Spectrum Disorders offered by George Washington University. Completion of this program offered by the School of Education and Human Development Department of Special Education and Disability Studies results in a special education endorsement in D.C., but Virginia does not have a comparable endorsement. Therefore, I have not been able to add a special education endorsement to my certification in Virginia. I am currently involved in the establishment of an inclusion program for children with ASD through early	Board Certified Behavior Analyst are certified by another agency. The regulations do not propose a separate endorsement in Autism Spectrum but endorsements in both special education – general curriculum k-12 and special education – adapted curriculum k-12.

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		intervention in D.C. My employer also serves Virginia, and I would like to make this program available in Virginia as well. As you revamp the teacher certification procedures, please make the process flexible enough to accept candidates who present with such excellent program training. This training would increase expertise in your teaching staff and enhance your special education program offering to families of children with autism. If completion of this program resulted in special education endorsement in Virginia, more teachers might be encouraged to seek further training in Autism Spectrum Disorders.	
Goochland County Public Schools	8VAC20-23-550. Special education – general curriculum k-12.	Special Education teachers have both formal education and training on how to effectively teach, assess, and manage the needs of students with a variety of learning impairments. This specialized training allows these teachers to meet the various educational needs of exceptional learners. However, in order for special educators to be considered highly qualified to teach a core subject i.e. math, science, history, or English to the students on their caseload, the individual must also be endorsed in the corresponding subject matter. To add the additional endorsement the teacher must either pass the content area Praxis or complete additional coursework. In some cases this requirement creates a hardship for the school division and its efforts in achieving highly qualified status for their staff. We would like for the Department of Education to consider changing the highly qualified requirements for Special Educators and allow for a general license to teach courses.	Designating teachers "highly qualified" has been a federal requirement. The Every Student Succeeds Act (ESSA) of 2015 eliminates the reporting requirement of "highly qualified" beginning in the 2016–2017 school year. All teachers must be properly licensed and endorsed according to state requirements. ESSA regulations have not yet been issued.
Mindy Abbott, PWCS, Region 4	8VAC20-23-560. Special education – general curriculum k-6 (add-on endorsement).	Add on endorsement for Special Education K-6, Special Education 6-8, and Special Education 9-12 is a great idea, it will be difficult for licensure specialists to identify the required courses, especially for our out-of-state applicants. While this is a great idea, it will be difficult for licensure specialists to identify the required courses, especially for our out-of-state applicants. We will likely have to request course descriptions to ensure the courses qualify. This will create extra work and the time to fill positions will increase. As an alternative to this route, we would like to recommend having a Praxis II option for teachers with a 5 year renewable license.	The Department of Education will provide assistance to school divisions in the evaluation of credentials on a case by case basis.
Dr. Paul D. Johnson, HR Director Page County Public Schools	8VAC20-23-560. Special education – general curriculum k-6 (add-on endorsement).	I believe that these recommendations are positive. One particularly helpful area is offering positive opportunities to add General Curriculum SPED add-on endorsements by level.	The comment supports the special education- general curriculum K-6 add-on endorsement.
Karen Parker, Liberty University	8VAC20-23-560. Special education – general curriculum k-6 (add-on endorsement).	Special education add-ons should require practicum with special education students. Compare to 45 hours required for add-ons for early childhood and for gifted. Early childhood for three-year-olds and four-year-olds (add-on endorsement). 3. Completed a supervised practicum of at least 45 instructional hours in a preschool setting (i.e., three-year-olds and four-year-olds. Gifted education (add-on endorsement). 3b. Completed a practicum of at least 45 instructional hours.	The proposed regulations added a practicum requirement to the special education-general curriculum add-on endorsements.

8VAC20-23 *Licensure Regulations for School Personnel*
Public Comment Summary

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James Wicks, Liberty University	8VAC20-23-560. Special education – general curriculum k-6 (add-on endorsement).	Special education add-ons should require practicum with special education students. Compare to 45 hours required for add-ons for early childhood and for gifted: 8VAC20-23-140. Early childhood for three-year-olds and four-year-olds (add-on endorsement). 3. Completed a supervised practicum of at least 45 instructional hours in a preschool setting (i.e., three-year-olds and four-year-olds Candidates who hold an active license in special education general curriculum K-12 should also be eligible for the add-on endorsement. Special education preparation is related to many early childhood competencies. Upon completion of the additional 9 hours of graduate coursework in early childhood that is requirement for the endorsement, all competencies would be met for candidates who hold the special education general curriculum endorsement.	
Dr. Karen Garza, Fairfax County Public Schools	8VAC20-23-560. Special education – general curriculum k-6 (add-on endorsement).8VAC 20-23-570. Special education – general curriculum middle grades 6-8 (add-on endorsement). 8VAC20-23-580. Special education – general curriculum secondary grades 6-12 (add-on endorsement).	We would like to express support regarding the following: The proposed new add-on Special Education – General Curriculum endorsement areas; these new options will allow current license holders with the required general education endorsement areas a more streamlined and defined route to adding-on the Special Ed – General Curriculum endorsement area that's aligned to the grade levels that they are already licensed to teach.	The comment supports the special education- general curriculum add-on endorsements.
Corinne Magee	8VAC20-23-650. Mathematics specialist for middle education.	We disagree that Middle School Specialists need to have a secondary degree. We do not feel as though the information that they learn in that course work directly correlates to that position. Instead we would like you to consider that they have to have an add-on endorsement in Algebra 1.	The proposed regulations recommend that the regulations be amended to add an endorsement in Mathematics Specialist for Elementary Education and maintain the Mathematics Specialist for Elementary and Middle Education. The endorsement requirements for the Mathematics Specialist for Elementary and Middle Education have been modifiedindividuals must hold an Algebra I or a Mathematics teaching endorsement.
Dr. Emerson-Stonnell Dr. Lewis Dr. Shilling-Traina Dr. Smith Dr. Timmerman	8VAC20-23-650. Mathematics specialist for middle education.	We are responding to the proposed changes in the *Licensure Regulations for School Personnel* Mathematics specialist program requirements for the elementary and middle school mathematics specialists. We are commenting as program coordinators and professors for Longwood University's Master of Science in Education – Elementary and Middle School Mathematics and Master of Science in Education – Algebra and Middle School Mathematics as well as professors for Longwood's Liberal Studies and Secondary Mathematics programs. We support the decision to separate the elementary and middle school mathematics specialist endorsements. However, we do not support the requirement that mathematics specialists for middle education must first hold a secondary mathematics teaching endorsement. This requirement does not allow for a path by	

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		which exceptional middle school licensed mathematics teachers can become mathematics specialists even though they have extensive experience in middle school mathematics. Given the new requirements for the Algebra 1 add-on endorsement we believe this endorsement should also be included as a possible path to becoming a middle school mathematics specialist. We also support the additional mathematics requirements for the Prek-3, PreK-6, middle mathematics, and Algebra 1 add-on as well as the addition of modeling to the secondary licensure.	
Eugene Kotulka, Superintendent Alleghany County Public Schools Region VI	8VAC20-23-650. Mathematics specialist for middle education.	We are thankful for the good communication that the Department of Education and the Board have established with the Regions. During our recent Region VI meeting, we learned that consideration was being given to *separating math specialist's endorsements by elementary and secondary certifications*. Region VI Superintendents believe that further nuanced differentiation of teacher licensure is the exact wrong direction for policy action when consolidation, streamlining, and simplification are what is actually needed. Especially, in smaller and more rural divisions, the more nuanced a licensure requirement, the more difficult it often is to find licensed candidates for positions. Here are some example and considerations from Region VI regarding Teacher Endorsement in Virginia 1. Given the fact that some of the schools are small (152 students at one k-7 school), we would suggest looking at ways of allowing content area teachers, those with 6-12 endorsements, and those with middle level endorsements, to teach down to the fourth grade level. Consider the arbitrary restriction of having an exceptional mathematics endorsed teacher, who by virtue of a 6-12 endorsement is prohibited from teaching mathematics to 5th grade students next door to his/her 6th grade mathematics classroom. Perhaps something along the lines of once offered "Highly Qualified Institutes" could be used to provide teachers with the training needed for these special circumstances. 2. This year Floyd County is fortunate to have an engineering professor from Virginia Tech volunteer to teach an introductory engineering class at Floyd County High School. Floyd County Superintendent was very surprised that, considering the instructor has a Ph. D. in engineering, the division was unable to obtain a leaching license of any nature for the visiting professor. As a result, he is being treated as a long-term substitute. With the emphasis on STEM across the Commonwealth, it would be advantageous to create a licensure route for situations such as these. 3. Given the challenge schools at the local, state, and national levels have finding teachers in hard to fill areas, and the need to identify staff who	

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		have the skill to effectively engage students in relevant and meaningful learning, the licensure regulations in place currently, further exacerbate the efforts to provide viable teaching and learning opportunities for students. As the requirements for licensure are increased, more specification is being required, and divisions are provided less flexibility, school divisions will be forced to hire teachers who are licensed but are proven not to be good teachers or classrooms will be staffed with substitute teachers.	
Virginia Council of Mathematics Specialists	8VAC20-23-650. Mathematics specialist for middle education.	The Virginia Council of Mathematics Specialist (VACMS) is presenting a response to a proposed change to the licensure requirement for grades 6-8 Mathematics Specialists to require that they have grades 6-12 mathematics endorsement. The Virginia Council of Mathematics Specialist strongly supports the quest for more rigorous mathematics programs at all levels. However, we do not support requiring a secondary mathematics credential for the middle school mathematics specialist endorsement as the way to increase middle school students' learning and achievement in mathematics. The VACMS concurs with the position of the Virginia Mathematics and Science Coalition (VMSC) that middle school mathematics teachers certainly need to be familiar with the content of both elementary and high school mathematics. As the Coalition states, the course work to prepare teachers of high school mathematics is not appropriate to prepare middle school mathematics specialists. Professional society recommendations are very clear on this point. From the Conference Board of the Mathematical Sciences, Mathematical Education of Teachers: "Teachers of middle grades students must be able to build on their students' earlier mathematics learning and develop a broad set of new understandings and skills to help students meet these more sophisticated mathematical goals. Teaching middle grades mathematics requires preparation different from preparation for teaching high school mathematics." And from the Mathematical Association of America, Committee on the Undergraduate Program in Mathematics: "A teacher preparation program for high school mathematics teachers is generally not adequate for preservice teachers who are planning to teach middle school mathematics. The mathematics topics taught in middle schools are substantially different from those taught in high schools, and the needs and mathematical sophistication of the students are substantially different." The appropriate way to view preparation as a middle grades mathematics specialists when compared with secondary licensure is as advanced training with a different focus, not as training that is less advanced. Requiring a secondary endorsement for middle grades specialists is a distraction from the primary goal of achieving the most sophisticated mathematical knowledge appropriate for the middle grades curriculum. The Virginia Mathematics and Science Coalition (VMSC) formed a task force in the spring of 2008 to study the role and responsibilities of middle school mathematics specialist. Their purpose was to make recommendations about how the preparation for mathematics specialists to work in elementary schools should be	

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		changed to prepare well-qualified middle school mathematics specialists. A group of Virginia mathematicians, mathematics educators, and school division mathematics leaders made up the task force. Committee members noted in the task force report that teachers preparing to be middle school mathematics specialists need opportunities to understand deeply the mathematics that underpins the middle school curriculum. Specialists must also have a deep understanding of the mathematics that students have already learned, and be able to make connections to those ideas as they extend their learning to more sophisticated mathematics in high school. Furthermore, middle school mathematics specialists must be able to support teachers to answer the call to meet the needs of *all* students. Middle school mathematics teachers require a skill set to work with a wide range of students with different academic needs. In some cases, students have not yet adequately mastered content introduced in the elementary grade curriculum. In other cases, students need additional opportunities to explore a mathematical topic at a more sophisticated level. More generally, the task force noted that teachers must find ways to teach sophisticated middle school mathematical concepts effectively—concepts that they may not know how to present to their middle school students. The VMSC led task force, as well as the members of the Virginia Council of Mathematics Specialists (VACMS), agree that much of the course work to prepare K-5 mathematics specialist is appropriate for middle school mathematics specialists. VACMS is in agreement with the task force recommendations of the adaptions and changes in the K-5 preparation program for preparing middle school mathematics specialists. That is to include a special middle school focus in the mathematical educational leadership courses and research courses accompanied by additional coursework in algebra and geometry beyond that required for the K-5 mathematics specialist preparation. The Virginia Council of Mathematics Specialists recognizes the importance of developing middle school students' proportional reasoning ability and other foundational algebraic understandings. The Virginia Council of Mathematics Specialist recommends that the Virginia Board of Education consider requiring the Algebra I Add-on endorsement as one of the requirements for the Middle School Mathematics Specialist Endorsement. The coursework required to secure the Algebra I Add-on endorsement will prepare middle school specialists to help middle school teachers of all students as well as those who are teaching Algebra and Geometry for Carnegie Units at the middle school. We appreciate the Virginia Board of Education's consideration of the Virginia Council of Mathematics Specialists position on the requirements for the Middle School Mathematics Specialist Endorsement.	
Jay Wilkins, Virginia Tech	8VAC20-23-650. Mathematics specialist for middle education.	I agree with the statement entered by the Virginia Council of Mathematics Specialists (VCMS) regarding the requirement of a secondary mathematics teaching endorsement (6-12) for middle-school mathematics specialists. I feel that requiring the 6-12 endorsement for the middle school mathematics specialists will result in excluding some potentially very strong candidates from becoming middle school	

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		mathematics specialists and teacher leaders in their schools. As stated in the VCMS comment, "Requiring a secondary endorsement for middle grades specialists is a distraction from the primary goal of achieving the most sophisticated mathematical knowledge appropriate for the middle grades curriculum." I do believe that middle-school mathematics specialists need a strong subject matter knowledge, but requiring a 6-12 endorsement does not necessarily ensure that the specialists will have the important pedagogical content knowledge required for the middle school curriculum, and moreover, it does not ensure that teachers will have a deep understanding of how middle-grades children learn mathematics. For example, it does not ensure an understanding of the learning trajectories associated with fractions, proportional reasoning, and reasoning with integers that are extensions of the mathematics learned in the elementary grades. This is important knowledge that is often found with our strongest middle school mathematics teachers (knowledge that does not necessarily result from having a 6-12 endorsement). I hope that the requirement of a secondary mathematics teaching endorsement (6-12) for mathematics specialists in the middles grades will be reconsidered.	
Ann Wallace, James Madison University	8VAC20-23-650. Mathematics specialist for middle education.	I concur 100% with the comment posted by the Virginia Council of Mathematics Specialists regarding the proposal change requiring 6-8 mathematics specialists to have a 6-12 mathematics endorsement. Having a secondary mathematics degree (meaning a BS in mathematics) has not necessarily ensured candidates have a strong command of the middle grades curriculum (especially in terms of depth). The 5 graduate-level mathematics content courses taken by candidates pursuing a K-8 Mathematics Specialist Degree provide opportunities to understand deeply the mathematics that reinforces the middle school mathematics curriculum. I hope the VBOE will strongly consider the position taken by the VACMS regarding this proposal.	
Goochland County Public Schools	8VAC20-23-650. Mathematics specialist for middle education.	The current legislation proposed to create an elementary and secondary Math Specialist endorsement has the potential to cause staffing issues for smaller, rural school divisions. Rural school divisions like Goochland would benefit more from a pool of licensed K-12 Math Specialists due to the way the role of Math Specialists are structured in these divisions. Often times their focus is on multiple areas of instruction across both the elementary and secondary curriculum that includes direct math instruction to students, (especially at the secondary level), developing and maintaining the district wide math curriculum, and providing instructional math support to staff. By creating two separate endorsements the benefit to smaller school divisions diminishes greatly along with the employment outlook for individuals with this elementary and secondary endorsement.	
Douglas Floyd	8VAC20-23-650. Mathematics specialist for middle education.	Will Middle School teachers who are not Secondary Endorsed lose their Math Specialist endorsement if the proposed changes go into effect? I believe that individuals with the endorsement should be grandfathered in and not lose their endorsement.	
Elizabeth Langran	8VAC20-23-660.	Reading specialist endorsement competencies should be listed and not just	The proposed regulations do not list courses or

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	Reading specialist.	mentioned.	competencies because individuals must complete an approved reading specialist program.
Karen Parker, Liberty University	8VAC20-23-660. Reading specialist.	The reading specialist program shall ensure that the candidate has demonstrated the following competencies: Assessment and diagnostic teaching; Communication: speaking, listening, media literacy; Reading; Writing; Technology for reading, writing, and research; Leadership, coaching, and specialization.	
James Wicks, Liberty University	8VAC20-23-660. Reading specialist.	Endorsement competencies are mentioned but should be listed. Compare to Approved Programs competencies for 8VAC-543-600. The reading specialist program shall ensure that the candidate has demonstrated the following competencies: Assessment and diagnostic teaching; Communication: speaking, listening, media literacy; Reading; Writing; Technology for reading, writing, and research; Leadership, coaching, and specialization.	
Robert N. Corley III, Ph.D., Virginia State University	8VAC20-23-670. School counselor prek-12.	School counselor preK-12. Endorsement requirements: 1. Option I. The candidate must have: a. Earned a master's degree from a regionally accredited college or university and completed an approved school counselor preparation program that shall include at least 100 clock hours of internship and practicum experiences in the preK-6 setting and 100 clock hours of internship and practicum experiences in the grades 7-12 setting; and b. Two years of successful, full-time teaching experience or two years of successful, full-time experience in school counseling in a public or accredited nonpublic school. Two years of successful, full-time experience in school counseling in a public or accredited nonpublic school under a Provisional License may be accepted to meet this requirement. 2. Option II. The candidate must have: a. Earned a master's degree from a regionally accredited college or university and completed an approved school counselor preparation program that shall include at least 100 clock hours of internship and practicum experiences in the preK-6 setting and 100 clock hours of internship and practicum experiences in the grades 7-12 setting; b. Two years of successful, full-time teaching experience or two years of successful, full-time experience in school counseling in a public or accredited nonpublic school. Two years of successful, full-time experience in school counseling in a public or accredited nonpublic school under a nonrenewable Provisional License may be accepted to meet this requirement. Clarification is needed regarding the following:	School counseling requirements have been modified in the *Review and Approval of Education Programs in Virginia* to match the *Licensure Regulations for School Personnel*

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		• Option I. and Option II. School counselor preK-12 requirements in 8VAC20-23-670. School counselor preK-12 (*Licensure Regulations for School Personnel*) and 8VAC20-543-610. School counselor preK-12 requirements (Review and Approval of Education Programs in Virginia). • There is a discrepancy between proposed licensure and approved program regulations regarding teaching experience, etc. requirements. Both Options of the proposed licensure regulations include requirements for completion of an earned master's degree, completion of an approved school counselor preparation program, internship and practicum clock hours, and teaching experience, etc. However, the proposed approved program regulations cite only the internship and practicum clock hours needed with no mention of the teaching experience, etc. requirements. [Note: It is understood that an earned master's degree from a State Board of Education approved School counselor preK-12 program is required.] Is the teaching experience, etc. (as cited in Option Ib. and Option II b. of 8VAC20-23-670 also required for 8VAC20-543-610, item #14?	