

# Virginia Board of Education Agenda Item



**Agenda Item:** T

**Date:** October 25, 2012

<b>Title</b>	First Review of a Proposal from Newport News City Public Schools to Establish the Heritage High School Governor’s Science, Technology, Engineering, and Mathematics (STEM) Academy		
<b>Presenter</b>	Toinette Outland, Program Administrator, Heritage High School, Newport News City Public Schools Lolita B. Hall, Director, Office of Career and Technical Education Services		
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**Purpose of Presentation:**

Other initiative or requirement. Specify below:

First review and acceptance of the Proposal from Newport News City Public Schools to Establish the Heritage High School Governor’s STEM Academy

**Previous Review or Action:**

No previous review or action.

**Action Requested:**

Action will be requested at a future meeting. Specify anticipated date below:

Date: November 29, 2012

Action: Final review and approval

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

X	Goal 1: Expanded Opportunities to Learn
	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

**Background Information and Statutory Authority:**

Goal 1: The Governor’s STEM Academy is designed to expand opportunities for the general student population to acquire STEM literacy and other critical skills, knowledge, and credentials that will prepare them for high-demand, high-wage and high-skill careers.

Partnerships establishing academies must include at least one public school division, business and industry, and postsecondary education. On November 29, 2007, the Board of Education approved the

criteria to establish a Governor’s STEM Academy. Subsequently, on March 19, 2008, the Board approved the standards for the Governor’s Career and Technical Education Exemplary Standards Awards Program, which all Career and Technical Academies must implement.

As required by the Board of Education, the State Council of Higher Education for Virginia (SCHEV) is currently reviewing the attached proposal. Their report and recommendation is expected by November 1 prior to the second review of the proposal by the Board of Education (Attachment B). Staff members of the Virginia Department of Education (DOE) have reviewed the proposal in the context of the Board’s criteria. An executive summary of the proposal is in Attachment A. Attachment C is the report from the review by the DOE. Attachment D is the complete proposal.

Currently, there are 16 Governor’s STEM Academies in Virginia. They are located in Arlington County, Carroll County, Chesapeake City, Chesterfield County, Fairfax County, Halifax County, Hampton City, Loudoun County, Lynchburg City, New Kent County, Richmond City, Roanoke County, Russell County, Stafford County, Suffolk City, and Virginia Beach City.

**Summary of Important Issues:**

The proposal for the Heritage High School Governor’s Science, Technology, Engineering, and Mathematics Academy consists of partnerships with Christopher Newport University, Thomas Nelson Community College, Norfolk State University, Newport News Education Foundation, Newport News Shipbuilding, Thomas Jefferson National Accelerator Facility (Jefferson Lab), Canon Virginia, Virginia Peninsula Chamber of Commerce, and the Peninsula Council for Workforce Development.

The Heritage High School Governor’s STEM Academy will offer a program of study designed to expand options for students to acquire skills in science, technology, engineering, and mathematics. The program combines academic coursework and research experience with a challenging and focused school environment to prepare students for 21<sup>st</sup> century careers. Students will gain the knowledge and skills they need to succeed in postsecondary education and in technology-rich workplaces by learning how to work in teams, communicate effectively, and apply the principles of science, technology, engineering, and mathematics. Students may choose a program of study from six career pathways within three career clusters as follows.

<b>Career Cluster</b>	<b>Career Pathway</b>	<b>Heritage High School Academy Program</b>
● Science, Technology, Engineering, and Mathematics	● Engineering Technology	● Engineering and Electronics
● Architecture and Construction	● Design and Pre-Construction	● Architectural and Engineering Drawing
● Information Technology	● Programming and Software Development ● Web and Digital Communications	● Modeling and Simulation (Computer Science)
	● Network Systems ● Information Support Services	● Computer Systems Technology (Networking)

The *Engineering and Technology* pathway prepares students to apply engineering and technical concepts to develop solutions for problems that exist throughout a broad range of fields from building bridges to flying airplanes to working in the medical industry.

The *Design and Pre-Construction* pathway provides students an opportunity to use their artistic creativity and mathematics skills to transform an innovative concept into a design plan that creates something tangible and guides construction professionals through the building process. Highly-skilled workers who earn specializations and certificates of accreditation are in great demand as this field continues to advance and becomes more competitive.

The study of *Information Technology* requires a solid foundation in mathematics and science as well as high technical skills. Students learn how to design, develop, and manage different types of software programs and hardware. Information technology workers can be found in virtually every sector of the economy, providing assistance at a multitude of levels.

Academy students will be provided an opportunity to participate in dual enrollment courses with the Thomas Nelson Community College and work-based learning experiences..

**Impact on Fiscal and Human Resources:**

Funding must be provided at the local level.

**Timetable for Further Review/Action:**

The proposed beginning date for the Heritage High School Governor's Science, Technology, Engineering, and Mathematics Academy, Newport News City Public Schools, is September 2013.

**Superintendent's Recommendation:**

The Superintendent of Public Instruction recommends that the Board of Education accept for first review the proposal to establish the Heritage High School Governor's Science, Technology, Engineering, and Mathematics Academy, Newport News City Public Schools.

**Heritage High School Governor's STEM Academy**  
**Newport News Public Schools**  
**Executive Summary**  
**October 9, 2012**

Partnership Members: Newport News Public Schools, Christopher Newport University, Norfolk State University, Old Dominion University, Thomas Nelson Community College, Canon Virginia, Inc., Newport News Education Foundation, Newport News Shipbuilding, Peninsula Council for Workforce Development, Riverside School of Health Careers, Thomas Jefferson National Accelerator Facility, and Virginia Peninsula Chamber of Commerce.

Lead Entity and Fiscal Agent: Newport News Public Schools

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Academy Location: Heritage High School

Number Students: The Governor's STEM Academy will have the capacity to enroll 400 students, grades 9 – 12. During the initial school year (2013–2014) 150 students will be admitted.

Career Pathways: Design and Pre-Construction  
Engineering and Technology  
Programming and Software Development  
Web and Digital Communications  
Network Systems  
Information Support Services

Academy Goals and Performance Measures: The goal of the Heritage High School Governor's STEM Academy is to promote student achievement and interest in STEM career fields to prepare students for global competitiveness in high-skill, high-wage, and high-demand STEM careers.

The following performance measures have been established by the planning committee:

- Increase the number of students who earn a grade of B or better in advanced mathematics courses beyond Algebra II by 3 percent over the next four years
- Increase the number of Academy students meeting the requirements of the Advanced Studies Diploma by 10 percent over the next four years
- Increase the number of students earning industry certifications by 10 percent over the next four years
- Increase the number of postsecondary credits earned through dual enrollment, advanced placement courses, and the Early College program by 5 percent over the next four years
- Ensure that 100 percent of students participate in work-based learning experiences, through strong partnerships with businesses and organizations
- Increase our school's high school graduation rate by 3 percent over the next four years
- Reduce our school's high school dropout rate by 2 percent over the next four years
- Increase enrollment and retention in postsecondary education by 5 percent over the next four years by giving students the opportunity to earn dual enrollment credit. After graduation from high school, academy graduates will complete Career and Technical Education Follow-Up surveys to determine successful enrollment and retention in postsecondary institutions. Graduates will have the opportunity to network on the Heritage High School's Governor's STEM Academy's social media site. This will allow the school to keep in contact with students and updated with their current postsecondary placements
- Increase the proportion of students completing a college and career curriculum in high school by increasing enrollment and completion rates annually by 5 percent in specified career pathway academy courses
- Reduce the proportion of students requiring remediation in college by 5 percent by carefully monitoring student achievement and providing academic support when necessary. Success will be measured by the number of students who meet the basic college entrance criteria as determined by the Virginia Community College System. An Academic Learning and Tutoring Center will be available for current academy student and academy graduates
- Increase the number of academy graduates employed in high-wage, high-demand, and high-skill careers as identified by the Virginia Employment Commission over the next six years after high school. Approximately sixty percent of Academy graduates will obtain employment within identified

career pathways and related occupations following postsecondary education.

Highlights  
of the  
Program:

As a result of participating in the Governor's STEM Academy in the pathways of Design and Pre-construction, Engineering and Technology, Programming and Software Development, Web and Digital Communications, Network Systems, and Information Support Services, students will:

- Gain a deeper understanding of the skills and knowledge incorporated in their fields of study;
- Benefit from specialized, project-based courses which develop critical-thinking, problem-solving, and decision-making skills, preparing them for the 21<sup>st</sup>-century world;
- Acquire greater communication skills;
- Develop workplace readiness skills;
- Receive opportunities to earn industry certifications preparing them to be more competitive in the work force and when applying to advanced training schools or postsecondary institutions;
- Obtain meaningful, real-life, hands-on experiences in their career pathway; and
- Profit from opportunities for internships, mentorships, job shadowing, and cooperative education, which provide students with advantages when entering postsecondary education and/or the workplace.

**The State Council of Higher Education for Virginia (SCHEV)**

Review of the Heritage High School Governor's STEM Academy – Newport News Public Schools

NOTE: The SCHEV staff is currently reviewing the proposal. Their report and recommendation is expected by November 1 prior to the second review of the proposal by the Board of Education.

**Virginia Department of Education  
Governor's STEM Academy  
Proposal Review Checklist**

**Title of Proposal: Heritage High School Governor's  
STEM Academy**

**Lead Entity for Proposal: Newport News Public Schools**

**Date of Review: October 9, 2012**

**Virginia Department of Education  
Governor’s STEM Academy  
Proposal Review Checklist**

**I. Partnership Capacity**

**Partnerships desiring to implement a Governor’s STEM Academy shall provide the Department of Education with evidence of the following:**

Criteria	Documentation			Comments
	Full	Partial	None	
A. An active, ongoing planning committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity. At a minimum, members must represent K-12 education (superintendent or designee), higher education, and business and industry. All partners must be represented on the committee.	X			
B. An advisory committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity.	X			
C. A written memorandum of agreement among school divisions, local businesses, postsecondary institutions, and any other partners that outlines ways in which community resources will contribute to the Governor’s STEM Academy to broaden the scope of students’ educational experiences.	X			

Criteria	Documentation			Comments
	Full	Partial	None	
D. A statement of assurances that the Governor’s STEM Academy Planning Committee has reviewed provisions of <i>Administrative Procedures Guide for the Establishment of Governor’s STEM Academies</i> and agrees to follow the guidelines set forth in the document (see appendix).	X			
E. A statement of assurances that, if applicable, an ongoing Governing Board will be established to reflect current Board of Education regulations relative to jointly operated schools and programs (see appendix).	X			
Comments:				

## II. Need/Rationale for the Academy

**Partnerships desiring to implement a Governor’s STEM Academy shall provide the Department of Education with evidence of the following:**

Criteria	Documentation			Comments
	Full	Partial	None	
A. Demonstration of the need/rationale for the Academy. This statement should be concise and state the major reasons to have a Governor’s STEM Academy, including need at the state, local and/or regional levels.	X			
B. A description of the enhanced or additional offerings in science, technology, engineering, and/or mathematics (STEM) that will meet the need described above.	X			
C. A fiscal agent that is a public entity, including a certification that the entity is willing and able to serve in that capacity.	X			

Criteria	Documentation			Comments
	Full	Partial	None	
Comments:				

### III. Program Description

**Each Governor’s STEM Academy planning committee shall develop cooperatively with local school divisions, business, community, and higher education partners and have available for review and dissemination, a program description that includes:**

#### A. A statement of program goals addressing the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Rigorous academic content in career and technical instruction;	X			
2. An emphasis on STEM career pathways;	X			
3. Individualized high school plans to ensure course selections that are aligned with students’ transition and career goals after high school;	X			
4. Evidence that graduates will complete a college and work readiness curriculum, minimally at the level specified for Commonwealth Scholars Course of Study (State Scholars Core) with the possibility of pre-approved substitution of equivalent courses where there may be more relevant course selections for a particular career pathway;	X			
5. Incorporation of Virginia’s Workplace Readiness Skills.	X			
Comments:				

**B. A statement of program objectives and performance measures to:**

Criteria	Documentation			Comments
	Full	Partial	None	
1. Improve academic achievement of Academy students;	X			
2. Increase completion of dual enrollment courses;	X			
3. Provide workplace readiness experiences for students through strong partnerships with businesses;	X			
4. Increase high school graduation rates;	X			
5. Reduce dropout rates;	X			
6. Increase enrollment and retention in postsecondary education;	X			
7. Increase the proportion of students completing a college and workplace ready curriculum in high school;	X			
8. Reduce the proportion of students requiring remediation in college;	X			
9. Increase the number of industry certifications awarded to high school students; and	X			
10. Increase the number of graduates employed in high-wage, high-demand and high-skill careers.	X			
Comments:				

**C. A brief description of the proposed program, including:**

Criteria	Documentation			Comments
	Full	Partial	None	
1. Site location;	X			
2. Number of students to be served;	X			
3. Grade levels;	X			
4. General curriculum design;	X			
5. List of courses to be delivered;	X			
6. Description of how/where the courses will be delivered. Courses may be delivered on a high school, technical center or community college campus, online, or in other innovative ways; and	X			
7. Designation of full-day or part-day, academic-year program.	X			
Comments:				

**D. Evidence of participation in the Governor’s Exemplary Standards Award Program for Career and Technical Education**

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

**E. Program and course descriptions**

**E.1. At least two well-articulated career pathways must be included that meet the following criteria:**

Criteria	Documentation			Comments
	Full	Partial	None	
<b>Pathway #1</b>				
a. Must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology <b>or</b>	X			
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. At least one pathway must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or state.	X			

Criteria	Documentation			Comments
	Full	Partial	None	
Comments:				

Criteria	Documentation			Comments
	Full	Partial	None	
<b>Pathway #2</b>				
a. Each career pathway must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology, <u>or</u>	X			
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. Of the two pathways described, at least one must be in a STEM-related field. This career pathway should drive the	X			

Criteria	Documentation			Comments
	Full	Partial	None	
innovative capacity of the region and/or the state.				
e. Additional career pathways may address one of the areas described above, or an area identified by the partnership as an area of interest, growth, or expansion for students in the service area of the Academy.	X			
Comments:				

**E.2 List of all requirements for successful program completion.**

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

**E.3 Academy graduates must achieve one or more of the following benchmarks:**

Criteria	Documentation			Comments
	Full	Partial	None	
a. Earn one or more industry certifications or state occupational licenses, and/or demonstrate competencies on an assessment instrument recognized by postsecondary institutions such as CLEP examinations, collaboratively designed or mutually approved end-of-course tests, college placement tests, or student portfolios reviewed by a team of college and high school faculty; <b><u>or</u></b>	X			

Criteria	Documentation			Comments
	Full	Partial	None	
b. Earn at least 9 transferable college credits as defined in the Early College Scholars program (includes dual enrollment, AP and other options); <b>or</b>	X			
c. Earn an Associate Degree.				
Comments:				

**E.4 Significant work-based experience must be included representing additional instruction or training beyond the classroom such as:**

Criteria	Documentation			Comments
	Full	Partial	None	
a. Cooperative Education; or				
b. Internships; or	X			
c. Job Shadowing; or	X			
d. Mentorships; or	X			
e. Project-based learning; or	X			
f. Service learning; or	X			
g. A combination of the above.				
Comments:				

**F. Length of program and daily schedule: Governor’s STEM Academies are defined by program content, not by the location or delivery system of courses. Evidence of the following must be submitted:**

Criteria	Documentation			Comments
	Full	Partial	None	
Designation of full-day or part-day, academic-year program.	X			
Comments:				

**G. Assurance from the fiscal agent that operating funds and facilities are available to support the Governor’s STEM Academy and are adequate to meet the needs of the program**

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

**H. Materials and equipment to be provided to accomplish program goals and objectives.**

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

**I. Evidence of an internal evaluation process to effect program improvement, including:**

Criteria	Documentation			Comments
	Full	Partial	None	
1. A review of the Academy’s policies, procedures, and outcomes;	X			
2. Consideration of feedback from students, staff, parents, the	X			

Criteria	Documentation			Comments
	Full	Partial	None	
community, and partnership members; and				
3. Annual collection and reporting of data to the Department of Education related to student achievement, goal achievement, and other indicators.	X			
Comments:				

#### IV. Administrative Procedures

Each Governor’s STEM Academy must develop and maintain procedures developed cooperatively with participating partners. There should be evidence of procedures in the four areas that follow.

**A. Partnerships - The role of business and industry, public school divisions, and postsecondary institutions in the partnership. The role of workforce and economic development entities should also be included if they are among the partners.**

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

**B. Student recruitment, selection criteria, and admissions.**

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

**C. Code of student conduct and attendance.**

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

**D. Transportation provided by the school division or consortium that is in compliance with all applicable federal and state regulations.**

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

**E. Staff recruitment, selection, and assignment - The Governor’s STEM Academy shall hire staff members who meet the Virginia teacher licensure requirements and/or postsecondary faculty qualifications. Where applicable, they must have industry-specific education with training and experience, including industry certification.**

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

**F. Staff development - The program will provide appropriate staff training in addition to staff planning time.**

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

**G. Staff evaluation – Staff will be evaluated according to the human resources policies of the agency or institution employing Academy personnel.**

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

**H. Parent, student and community involvement**

Criteria	Documentation			Comments
	Full	Partial	None	
1. Preparation for entering the Academies should begin by eighth grade.	X			
2. Students, parents, teachers, and counselors should work collaboratively to:	X			
a. Complete career interest inventories;				
b. Prepare academic and career plans outlining an intended course of study in high school;	X			
c. Review multiple postsecondary pathways and the steps required to pursue them;	X			
d. Participate in career assessments to identify areas students should strengthen to qualify for their selected pathways; and	X			
e. Discuss available diplomas, seals, and other recognitions including admission to specialized programs such as Governor’s Academies.	X			

**I. Documentation of insurance, budget, and other fiscal information**

	Documentation			Comments
	Full	Partial	None	
Insurance	X			
Budget (from appendix)	X			
Budget Narrative	X			
Other				
Comments:				



# Heritage High School

## Proposal to Establish a Governor's STEM Academy



*Submitted to the  
Virginia Department of Education  
October 25, 2012*

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# Heritage High School Governor’s Science, Technology, Engineering and Mathematics Academy Proposal

## Program Description and Overview

The Heritage High School Governor’s STEM Academy offers a program of study designed to expand options for students to acquire skills in Science, Technology, Engineering, and Mathematics (STEM). The program combines academic coursework and research experience with a challenging and focused school environment to prepare students for 21st century careers. Students will gain the knowledge and skills they need to succeed in technologically-rich workplaces by learning how to work in teams, communicate effectively, and apply the principles of science, technology, engineering, and mathematics. Students will choose specific career pathways within the Career Clusters of Science, Technology, Engineering & Mathematics; Architecture & Construction; and Information Technology. The courses students choose will equip them with the skills they will need for success in their chosen careers. There will be a strong emphasis on the Career Pathways of Engineering Technology, Design and Pre-Construction, Programming and Software Development, Web and Digital Communications, Modeling and Simulation, and Network Systems. Students may complete study in the following courses in the Governor’s STEM Academy at Heritage High School: Engineering and Electronics, Architectural and Engineering Drawing, Modeling and Simulation, and Computer Systems Technology. The table below shows the Career Clusters and Career Pathways as they relate to the programs offered at Heritage High School.

Career Cluster	Career Pathway	Heritage High School Governor’s STEM Academy Courses
Science, Technology, Engineering and Mathematics	Engineering Technology	Engineering and Electronics <ul style="list-style-type: none"> <li>• <i>Introduction to Engineering (8460)</i></li> <li>• <i>Advanced Engineering (8491)</i></li> <li>• <i>Electronics I (8416)</i></li> <li>• <i>Electronics II (8412)</i></li> </ul>
Architecture and Construction	Design and Pre-Construction	Architectural and Engineering Drawing <ul style="list-style-type: none"> <li>• <i>Engineering Explorations (8450)</i></li> <li>• <i>Technical Drawing (8435)</i></li> <li>• <i>Engineering Drawing (8436)</i></li> <li>• <i>Architectural Drawing (8437)</i></li> </ul>

Career Cluster	Career Pathway	Heritage High School Governor's STEM Academy Courses
Information Technology	Programming and Software Development  Web and Digital Communications	Modeling and Simulation (Computer Science) <ul style="list-style-type: none"> <li>• <i>Introduction to Computer Programming (3181)</i></li> <li>• <i>Honors Computer Programming (3182)</i></li> <li>• <i>Digital Visualization (8459)</i></li> <li>• <i>Modeling &amp; Simulation (8460)</i></li> </ul>
	Network Systems  Information Support Services	Computer Systems Technology (Networking) <ul style="list-style-type: none"> <li>• <i>Information Technology Fundamentals (6670)</i></li> <li>• <i>Computer Systems Technology I (8622)</i></li> <li>• <i>Computer Systems Technology II (8623)</i></li> <li>• <i>Computer Systems Technology III (8624)</i></li> </ul>

The Heritage High School Governor's STEM Academy is designed to give students in grades 9 – 12 the opportunity to explore several career paths while incorporating *Virginia's Workplace Readiness Skills for the Commonwealth*. Career Pathways prepare students for programs leading to bachelor's degrees, two-year associate's degrees, apprenticeships, and employment. The Heritage High School Governor's STEM Academy will accept approximately 150 students for the initial school year (2013—2014). Becoming a Governor's STEM Academy, we expect to raise student aspirations and attract more students to postsecondary education in preparation for career pathways Engineering Technology, Design & Pre-Construction, Programming & Software Development, Web & Digital Communications, Modeling & Simulation, and Network Systems. Our goal is to provide well-trained workers to support the recruitment of new businesses and industries to the commonwealth and to meet the workforce needs of existing business and industry.

### Length of Program and Daily Schedule

Students will have the opportunity to concentrate and take specialized courses in a full-day, year-long academic program at the high school campus (see Appendix A-Bell Schedule). In addition to courses in science, technology, engineering, and mathematics, students will receive a foundation in English, social studies, and health and physical education, and will have the opportunity to study arts and world languages. These core courses will also integrate STEM (see Appendix B-Plans of Studies). During the 12<sup>th</sup>-grade year, students will have the

opportunity to apply their knowledge of STEM, as well as 21<sup>st</sup> century skills, in a real-world work experience by participating in an internship related to their chosen career.

### Course Sequence

The Heritage High School Governor’s STEM Academy planning committee has selected the following course sequences for students enrolled in the STEM Academy:

CAREER STRAND	9 <sup>TH</sup> GRADE	10 <sup>TH</sup> GRADE	11 <sup>TH</sup> GRADE	12 <sup>TH</sup> GRADE
Engineering & Electronics	Introduction to Engineering (8490)	Advanced Engineering (8491)	Electronics I (8416)	Electronics II (8412)
Architectural & Engineering Design	Engineering Explorations (8450)	Technical Drawing (8435)	Engineering Drawing (8436)	Architectural Drawing (8437)
Computer Systems Technology (Networking)	Information Technology Fundamentals (6670)	Computer Systems Technology I (8622)	Computer Systems Technology II (8623)	Computer Systems Technology III (8624)
Modeling & Simulation (Computer Science)	Introduction to Computer Programming (6670)	Honors Computer Programming (3182)	Digital Visualization (8459)	Modeling & Simulation (8460)

### Related Industry Certifications

Students will have the opportunity to earn industry certifications in the following courses:

- Engineering & Electronics
  - Pre-Engineering Assessment
  - Electronic Technology Assessment
  - Basic Installation Technician Certification Test (Mobile Electronics Certification)
- Architectural/Engineering Design
  - AUTOCAD
  - Skills USA Workforce Ready Technical Drafting Assessment

- Computer Systems Technology
  - CompTIA A+
  - CompTIA Network +
  - CompTIA A+ IT Technician
  
- Modeling & Simulation
  - IC3
  - Linux
  - CompTIA Network +
  - Microsoft Office Specialist

## Course Descriptions

In addition to courses in English, mathematics, social studies, science, health and physical education, art, and world language, students in the STEM Academy will take the following STEM related courses:

**Advanced Engineering (8491)**—Students will learn the applications and design processes of engineering. Students form engineering teams and select a design problem. Projects may be models, systems, or products that creatively solve an engineering problem.

**Architectural Drawing (8437)**—Students will learn the principles of architecture and increase understanding of working drawings and construction techniques learned in the prerequisite course. Students use computer-aided drawing and design (CADD) equipment and established standards or codes to prepare models for presentation.

**Computer Systems Technology I (8622)**—Students learn to construct, troubleshoot, service, and repair computer systems, related components and software, and to install and maintain local area networks.

**Computer Systems Technology II (AVO510)**—Students learn to diagnose and demonstrate networking concepts and demonstrate steps to correct identified problems.

**Computer Systems Technology III (8624)**—Students develop a strong understanding of troubleshooting procedures, a practical knowledge in implementing various advanced networking technology solutions, and the ability to implement and manage network security measures.

**Digital Visualization (8459)**—Students will gain experiences related to computer animation by solving problems involving 3D object manipulation, storyboarding, texture mapping, lighting concepts, and environmental geometry.

**Electronics I (8416)**—This course engages students in electricity and electronic experiments that focus on the application of scientific theories and mathematics principles. Students solve problems using simple electrical devices and circuits and build electric projects using AC and DC devices and circuits.

**Electronics II (8412)**—Students work with electronic devices, instruments, and circuits, and build electronics projects to apply theories and laws with electronic components such as resistors, capacitors and transistors. They also study integrated circuits used in computers, amplifiers, computer systems troubleshooting, and repair.

**Engineering Drawing (8436)**—Students use a graphic language for product design, technical illustration, assembly, patent, and aeronautical drawings. Students use computers, calculators, and descriptive geometry and adhere to established standards to solve design problems. Completion of this course may contribute to a student’s preparation for the AutoCAD industry certification.

**Engineering Explorations (8450)**—This course is an introduction to the fundamentals of technology and engineering. Students will be exposed to a variety of engineering specialty fields and related careers. Students will gain a basic understanding of engineering history and design, using mathematical and scientific concepts.

**Honors Computer Programming (3182)**—This course introduces object-oriented programming using C++. (Introduction to Computer Programming is the prerequisite for this course)

**Information Technology Fundamentals (6670)**—This course introduces the essential skills needed for students to pursue specialized programs leading to technical and professional careers and certification in the IT industry. Students have an opportunity to investigate career opportunities in four major IT areas: Information Services and Support, Network Systems, Programming and Software Development, and Interactive Media.

**Introduction to Engineering (8460)**—While undergoing an orientation to the careers and challenges of engineering, students are actively involved with high-tech devices, engineering graphics, and mathematical concepts and scientific principles through problem-solving experiences.

**Modeling and Simulation (8460)** —Will explore the use of modeling, simulation, and game development software to solve real-world problems in STEM. The activities include evaluating physics simulations, programming games for educational purposes, and creating visualization systems with 3D models.

**Technical Drawing (8435)**—In this foundational course, students learn the language of technical design and make design sketches, technical drawings, models, or prototypes of real design problems.

## **Materials and Equipment**

Materials and equipment for the Heritage High School Governor's STEM Academy will follow state purchasing guidelines and may be obtained through donations from local industry and higher education partners, local school division funds, state equipment funds, and the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV).

Equipment purchased with state or federal funds will be selected from the state-approved equipment list for career and technical education programs. Equipment purchased through the Perkins Grant will meet all applicable grant regulations.

## **Postsecondary Opportunities /Work-Based Learning Experiences**

Students in the academy have the opportunity to qualify for an Advanced Studies Diploma and earn the following diploma seals upon graduation: Governor's Seal, Board of Education's Advanced Mathematics & Technology Seal, and the Board of Education's Career and Technical Educational Seal. Upon completion of the academy, students will have the skills they need to continue postsecondary opportunities with local college and university programs to include Thomas Nelson Community College Associate of Applied Science; Old Dominion University College of Engineering and Technology; Norfolk State University College of Science, Engineering and Technology; Christopher Newport University College of Science, Engineering, and Technology; and the Newport News Apprentice School of Shipbuilding.

While participating in the academy, students will have the opportunity to participate in the following work-based learning experiences and college and career activities to include:

- Earning a minimum of nine postsecondary credits with Thomas Nelson Community College (See Appendix C-Thomas Nelson Dual Enrollment Agreement)
- Extensive partnerships and internships with research labs, businesses, colleges, and universities to include a three-week spring internship program with Newport News Shipbuilding, Career Day at NASA Langley, STEM Summit with Jefferson Labs, Computer Science Day with Old Dominion University, and the William R. Harvey Leadership Institute at Hampton University
- Integrated curriculum that helps students see connections among mathematics, science, and technology
- School culture designed to develop students' workplace readiness skills to meet industry needs

- Opportunities to learn about careers through mentors, career and technical student organizations, career clubs, worksite visits, guest speakers, internships, and job shadowing experiences
- Participation in school and community STEM showcase activities

### **Rationale**

According to the U.S. Department of Education’s article on “Supporting Science, Technology, Engineering, and Mathematics Education,” mastery of mathematics, science, and technology is no longer only for future scientists and engineers; it is essential preparation for all students. Despite an overall increase in postsecondary education enrollment for over a decade, the percentage of STEM college graduates has declined. America needs to increase the number of students pursuing STEM fields in their academic studies and careers and improve preparation for the next generation of engineers, scientists, mathematicians, and technicians.

Georgetown University Center on Education and the Workforce reported in a 2011 *USA News* article, entitled “Demand, Pay for STEM Skills Skyrocket,” that over the past 30 years, salaries in STEM-related jobs have jumped faster than those in any other occupation other than health care professionals and managerial occupations. STEM wages jumped 31 percent over the past 30 years, compared with 23 percent for all non-STEM occupations (*USA News*, October 2011).

The Heritage High School Governor’s STEM Academy’s goal is to promote student achievement and interest in STEM career fields to prepare students for global competitiveness. The STEM Academy planning committee has identified the Science, Technology, Engineering and Mathematics; Architecture and Construction; and Information Technology Career Clusters as the initial Academy focus. The courses in Modeling and Simulation (Computer Science) and Computer Systems Technology (Networking) help prepare Newport News Public Schools students to meet the regional workforce demands that have been identified in these high-skill, high-wage careers.

Newport News Public Schools is uniquely positioned to take full advantage of the high concentration of STEM-related careers in this region. The Virginia Peninsula workforce sector is strong and getting stronger. Fourteen manufacturing companies, representing 89.5 percent of the private sector manufacturing workforce in the region, participated in the *Skills to Succeed Inventory* sponsored by the Peninsula Council for Workforce Development and Thomas Nelson Community College, through a grant from the Virginia Community Colleges and the Ford Foundation. The study revealed that these employers report 11,150 jobs will open in 11 advanced technology and manufacturing occupations throughout the Greater Virginia Peninsula.

Newport News Shipbuilding alone estimates that it will hire 10,000 people in the next several years to fill new jobs and replace retiring employees. NASA Langley, Jefferson Lab, Canon

Virginia, Inc., area military facilities, and numerous government contractors in this region offer a wealth of STEM career opportunities for qualified job seekers.

The chart below lists some of the fastest growing STEM and technical occupations projected from 2008 to 2018 according to the Bureau of Labor Statistics.

**Fastest Growing Technical Occupations  
in the United States from 2008 Projected to 2018**

Occupation	2008*	2018*	Percentage Growth
Biomedical Engineers	16.0	27.6	72.02%
Network Systems and Data Communications Analysts	292.0	447.8	53.36%
Medical Scientists	109.4	153.6	40.36%
Computer Software Engineers	514.8	689.9	34.01%
Environmental Engineers	54.3	70.9	30.62%
Architects	113.7	141.6	24.00%
Graphic Designers	279.2	316.5	13.00%
Computer Programmers	363.1	406.8	12.01%

**\*Numbers in thousands**

*Source: Bureau of Labor Statistics [www.bls.gov](http://www.bls.gov) February 2012*

**Goals & Performance Measures**

The goal of the Heritage High School Governor’s STEM Academy is to promote student achievement and interest in STEM career fields to prepare students for global competitiveness in high-skill, high-wage, and high-demand STEM careers.

The following goals and performance measures have been established by the planning committee:

- Increase the number of students who earn a grade of B or better in advanced mathematics courses beyond Algebra II by 3 percent over the next four years
- Increase the number of Academy students meeting the requirements of the Advanced Studies Diploma by 10 percent over the next four years

- Increase the number of students earning industry certifications by 10 percent over the next four years
- Increase the number of postsecondary credits earned through dual enrollment, advanced placement courses, and the Early College program by 5 percent over the next four years
- Ensure that 100 percent of students participate in work-based learning experiences, through strong partnerships with businesses and organizations
- Increase our school's high school graduation rate by 2 percent over the next four years
- Reduce our school's high school dropout rate by 2 percent over the next four years
- Increase enrollment and retention in postsecondary education by giving students the opportunity to earn dual enrollment credit. After graduation from high school, academy graduates will complete Career and Technical Education Follow-Up surveys to determine successful enrollment and retention in postsecondary institutions. Graduates will have the opportunity to network on the Heritage High School's Governor's STEM Academy's social media site. This will allow the school to keep in contact with students and updated with their current postsecondary placements
- Increase the proportion of students completing a college and career curriculum in high school by increasing enrollment and completion rates annually by 5 percent in specified career pathway academy courses
- Reduce the proportion of students requiring remediation in college by 5 percent by carefully monitoring student achievement and providing academic support when necessary. Success will be measured by the number of students who meet the basic college entrance criteria as determined by the Virginia Community College System. An Academic Learning and Tutoring Center will be available for current academy student and academy graduates
- Increase the number of academy graduates employed in high-wage, high-demand, and high-skill careers as identified by the Virginia Employment Commission over the next six years after high school graduation

## Baseline Data

The charts listed below shows baseline student data from Heritage High School for the 2011—2012 school year in the areas of advanced mathematics, industry certifications, postsecondary credits, workplace readiness experiences, graduation, and dropout rates.

### Heritage High School Advanced Mathematics Pass Rates Number of Students Earning a Grade of B or better

ADVANCED MATHEMATICS COURSE	NUMBER OF STUDENTS 2011—2012	Projections 2013—2014	Projections 2014—2015	Projections 2015—2016	Projections 2016—2017
Honors Algebra II/Trigonometry I	27	28	29	30	31
Honors Math Analysis I	12	12	13	14	15
Trigonometry & Elementary Functions	51	52	53	54	55
Probability and Statistics I	10	11	12	13	14
Advanced Placement Calculus	17	18	19	20	21
<b>TOTAL STUDENTS</b>	<b>117</b>	<b>121</b>	<b>126</b>	<b>131</b>	<b>136</b>

**Heritage High School  
Industry Certifications, Postsecondary Credits, and  
Workplace Readiness Experiences**

	2011—2012	Projections 2013—2014	Projections 2014—2015	Projections 2015—2016	Projections 2016—2017
<b>Number of industry certifications earned</b>	105	107	110	113	116
<b>Number of postsecondary credits earned (Dual enrollment/Advanced placement/Early College)</b>	172	174	176	178	181
<b>Number of students participating in work-based learning experiences</b>	79	150	230	310	400

**Heritage High School  
Graduation Completion Data**

	2011-2012	Projections 2013-2014	Projections 2014-2015	Projections 2015-2016	Projections 2016-2017
<b>Graduation Completion Index*</b>	85.42%	85.80%	86.30%	86.70%	87.10%
<b>On Time Graduation**</b>	84.57%	84.90%	85.40%	87.80%	86.30%
<b>On Time Graduation Dropout Rate***</b>	6.65%	6.61%	6.58%	6.55%	6.51%

*\*The Graduate Completion Index is used to determine school accreditation. The benchmark is 85 and provisional status is 81 to 84.99.*

*\*\*The On Time Graduation concerns the percentage of students who were in 9th grade during the 2008-2009 school year and have graduated four years later .*

*\*\*\*On Time Graduation Dropout Rate is determined by adding the number of student dropouts and unconfirmed students (no record of withdrawal).*

Progress will be measured by grade reports in advanced mathematics courses, industry certification pass rates, number of postsecondary credits earned, internship and job shadowing student placements, district graduation index reports, student program enrollment reports, and student surveys.

### **Program Evaluation**

The Heritage High School Governor's STEM Academy will be evaluated by the planning and advisory committee and various academic and career and technical education assessments to provide feedback and data for internal evaluation. The planning and advisory committee will meet regularly throughout the development process and will continue with a specific and purposeful schedule once the Academy is established. Newport News Public Schools will incorporate its instructional evaluation process into all STEM Academy programs and courses.

### **Governor's Exemplary Standards Award Program for Career and Technical Education**

The Heritage High School Governor's STEM Academy will adhere to the Governor's Exemplary Standards Award Program for Career and Technical Education. The Academy is committed to promoting high academic standards and improving other measures of program quality while strengthening our business and community partnerships and aligning with postsecondary education and industry needs. As we demonstrate relevant and positive outcomes, the Academy will share best practices with other programs striving for this designation.

### **Operational Structure**

#### **Governing Board**

Members of the Heritage High School administrative team will serve as the Governing Board for the Heritage High School Governor's STEM Academy. Governing board members will consist of the building principal, the Heritage High School Governor's STEM Academy Director, the Assistant Principal of Instruction, the Director of Professional School Counselors, and the Career and Technical Education Instructional Supervisor.

#### **Planning and Advisory Committee**

The Heritage High School Governor's STEM Academy partners will provide at least one active member to the Heritage High School Governor's STEM Academy Planning and Advisory Committee which shall oversee the responsibility for the design, implementation and evaluation of all initiatives. The Heritage High School Governor's STEM Academy Director will be responsible for the facilitation, coordination, and/or implementation of the Planning and Advisory Committee recommendations (see Appendix D-Planning and Advisory Committee Agreements).

**Coordination**

Newport News Public Schools will provide a Governor's STEM Academy Director who currently serves as the Engineering and Technology Magnet Director for Heritage High School. This position will report to the Planning and Advisory Committee and will be supervised by the principal of the high school.

**Director Responsibilities**

The Heritage High School Governor's STEM Academy Director will serve as a facilitator and/or coordinator of the STEM Academy Partners and Department of Education in the design, implementation, coordination, evaluation, and reporting of the Governor's STEM Academy.

Responsibilities of the Heritage High School Governor's STEM Academy Director will include, but are not limited to, the following:

- Facilitate the Heritage High School Governor's STEM Academy Planning and Advisory Committee regarding the design and implementation process
- Serve as a primary contact to the Virginia Department of Education (VDOE)
- Develop academy marketing materials, Web site, and forms
- Assist with scheduling and coordination of events with sponsoring partners
- Coordinate the application and selection process for the Heritage High School Governor's STEM Academy
- Serve as liaison with colleges and universities in the development and oversight of dual-enrollment courses
- Facilitate business and organizational participation and support of the Heritage High School Governor's STEM Academy
- Prepare and monitor the budget related to the Heritage High School Governor's STEM Academy and information requested by the VDOE, submit state reports, manage program data and demographics as related to defined Heritage High School Governor's STEM Academy outcomes in coordination with other partners
- Coordinate Heritage High School Governor's STEM Academy staff development activities

## **Administrative Procedures**

### **Staff Selection and Evaluation**

Direct supervision of the Governor's STEM Academy instructional faculty will be handled according to the policies and procedures set by the School Board of Newport News Public Schools. Personnel will be hired who meet the Virginia teacher licensure requirements and/or postsecondary faculty qualifications. Where applicable, teachers must have industry-specific education with training and experience, including industry certification. Staff will be evaluated according to the human resources policies of Newport News Public Schools using the Teacher Performance Assessment tool established by the school district.

### **Staff Development**

All teachers will be given the opportunity to participate in engaging STEM professional development activities to assist in providing high-quality STEM instruction to prepare students for academy coursework. Teachers will participate in summer institutes, conferences, workshops, and in-building professional development opportunities to expand their use of project-based and experiential learning strategies.

Teachers will be required to integrate the content and strategies learned into classroom modules and lessons. Opportunities for learning during the school year will be provided through observations of classroom instruction. Follow-up activities and resources will be provided and communicated with teachers. Teachers will be provided an instructional planning period and a professional development period.

Training will support research-based instructional strategies to STEM curriculum. Where applicable, business partners will also assist in providing teacher training. Teachers will collaborate with postsecondary and business partners to create real-world STEM opportunities for students to apply what they have learned.

Heritage High School teachers have recently participated in STEM Staff Development opportunities to include Career Pathways Teacher Internships at Newport News Shipbuilding, Hampton University Teacher's Circle Summer Institute, Old Dominion University's National Science Foundation Funded Marine Tech Teacher Institute, STEM Connection Hampton Roads, and VA STEM Connect (see Appendix E-Teacher Professional Development Opportunities).

### **Parent, Student, and Community Involvement**

Parents, students, and the community will be actively involved in Academy program planning. Student and parent informational workshops, parent-teacher conferences, college visits, and business partnerships will be among the resources used to encourage student, parent, and community involvement with Academy initiatives.

Beginning in middle school, all prospective Academy students will have the opportunity to participate in pre-academy programs, including site tours, open houses, and summer experiences that will be coordinated by the Academy director. Students will complete interest

inventories in middle school, and throughout high school, under the guidance of school counselors, career coaches, and classroom instructors who will monitor individual career pathways identified by the students.

During high school, students will work with school counselors to complete career assessments and create academic and career plans outlining intended courses of study. These career plans will be reviewed annually prior to course registration and adjusted as needed to meet the needs and interests of the student. Postsecondary pathways will also be reviewed and discussed. School admission requirements, industry certifications and credentialing options, career studies, associate or technical college degrees, and advanced college degree programs will also be reviewed with students and parents.

Local businesses and educational institutions will be instrumental in providing STEM resources and opportunities for students enrolled in the Academy, while providing data that will be essential to ensuring that Academy program options are aligned with postsecondary education and industry needs.

### **Student Enrichment Opportunities/Summer Experiences**

Students will be given additional instructional enrichment activities while participating in the Governor's STEM Academy to include the 21<sup>st</sup> Century STEM Summer of Innovation, Newport News Shipbuilding Career Pathways Job Shadowing Program, Newport News Shipbuilding Spring Break "Make It Work" Internship Program, Camp Connect Summer Program, and The Peninsula Council of Workforce Development Summer Camp Series. With the distinction of becoming a Governor's STEM Academy, we expect to expand upon some of current programs to reach a greater number of students and increase the number of business and industry partners.

The 21<sup>st</sup> Century STEM Summer of Innovation has been held the past three years at Crittenden Middle School, which is the STEM magnet feeder school for Heritage High School. This is a six-week program designed to give rising third through ninth grade students hands-on, minds-on experiences in STEM. One hundred and fifty students are selected for the program. Students are exposed to several career pathways. Courses offered during the STEM Summer of Innovation include Robotics, Aviation, and Computer Science. Literacy, vocabulary, and mathematics skills are also supported through strategic classroom arrangements, skills driven curricula, and direct instruction. NASA and Newport News Shipbuilding are among the business partners who assist with instruction and activities that support the program's goals and initiatives. With the establishment of the Governor's STEM Academy we plan to expand this program rising ninth and tenth grade academy students. Current eleventh and twelfth grade academy students will be utilized as program tutors (see Appendix F-21<sup>st</sup> Century STEM Summer of Innovation Program).

An extensive partnership with Newport News Shipbuilding Career Pathways, Newport News Public Schools Career Pathways, and Heritage High School has been established to provide 12<sup>th</sup> grade students the opportunity to participate in a job shadowing experience at Newport News

Shipbuilding. The program was piloted in March 2012 with 40 students in the Engineering and Technology Magnet program at Heritage High School. The Newport News Shipbuilding Career Pathways internship program afforded students the opportunity to be connected with employees in Engineering and Electronics, Modeling and Simulation, Computer Systems Technology, and Architectural Drawing and Design. Students completed a three-week, 20-hour job shadowing experience that exposed them to several career pathways and the skills needed to be successful in the specified career fields. Students met with members of the Newport News Shipbuilding leadership team, experienced engineering and information technology at work, and saw first-hand the importance of career readiness skills in the workplace. Plans are underway to extend this program to all 12<sup>th</sup> grade students who will be enrolled in the Heritage High School Governor's STEM Academy. This will be a component of the STEMinar course. We plan to seek additional business partners to participate in this internship program as a result of the academy's establishment (see Appendix G-Newport News Shipbuilding Career Pathways Internship Packet).

The Spring Break "Make It Work" Internship program is also facilitated by the Newport News Public Schools Career Pathways program. High school students are able to apply online to participate in a one-week job shadowing experience. This internship program is focused on several STEM-related career pathways. Since its inception, students have been able to shadow engineers, scientists, and medical professionals at Newport News Shipbuilding, NASA Langley, and Riverside Health Systems. The Heritage High School Governor's STEM Academy Director will work with the Newport News Career Pathways Supervisor to provide additional job shadowing opportunities in the areas of STEM, Architecture & Construction and Information Technology (see Appendix H-Spring Break "Make It Work" Internship).

The Advanced Manufacturing Lab at Thomas Nelson Community College teamed up with local businesses and organizations, including STIHL, Liebherr Mining Company, NASA Langley, Newport News Shipbuilding, New Horizons Regional Education Centers, Virginia Manufacturers Association, Peninsula Council for Workforce Development, Hampton City Schools, and Newport News Public Schools to offer a four-day Manufacturing Technology Camp in July of 2012. This partnership will be an annual event which will be available for Academy students to participate in:

Students will work in teams to:

- build and operate a semi-robotic manufacturing machine
- design a modern, environmentally friendly manufacturing process
- plan and perfect a family of marketable products
- collaborate with experts to resolve design and production challenges
- compete in a "friendly" manufacturing competition

- visit modern, “cutting-edge” automated manufacturing companies
- explore the world of entrepreneurship

CampConnect started in the summer of 2010 with collaboration between Newport News Public Schools’ Career and Technical Education and Youth Development departments. The idea was to provide college, career, and leadership experiences for students during the summer. The partners designed CampConnect to expose rising 7<sup>th</sup> and 8<sup>th</sup> grade students to enrichment experiences they may not otherwise have had access to.

The first year of CampConnect included tours of colleges and local businesses, and leadership training from Alternatives, Inc. As part of the leadership training, the students identified issues within their schools to address throughout the year.

In the summer of 2011, the leadership focus of CampConnect was replaced by an emphasis on Youth Development through citizenship. Implicit in that decision was the understanding that leadership opportunities would emerge organically from citizenship and community service experiences. In the second year, Youth Development partnered with Career Pathways—a natural fit for the “College, Career, and Citizen Ready” focus of the camp. The camp provided opportunities for students to visit local businesses, tour colleges on the VA Peninsula and the Southside, and to participate in hands-on community service activities in partnership with the Youth Volunteer Corps of Hampton Roads (YVC-HR).

In the summer of 2012, CampConnect adopted a focus on Science, Technology, Engineering, and Mathematics (STEM). The program also expanded to include rising ninth grade students, for whom leadership opportunities were created. The STEM focus provided a deeper exploration of colleges and careers, as evidenced by the transition from tours of local businesses and colleges, to experiences that blended understanding of the programs offered at local colleges with hands-on/minds-on activities for students. Some of the work-based learning experiences included:

- two-day robotics labs that provided hands-on experiences with robotics kits, computer programming languages, and problem solving in robotics competitions. This event was hosted by Virginia FIRST Tech Challenge, Virginia FIRST Lego League, and Christopher Newport University
- visitations to Thomas Nelson Community College’s Advanced Manufacturing and Technology Labs to include hands-on experiences with hardware and software used in the labs at the college. The students left the college wanting more opportunities to interact with the technology. As a result, the college has invited students from Newport News middle schools to visit the lab during the upcoming school year

- Hands-on workshops sponsored by The Riverside School of Health Careers. Students explored radiology, physical therapy, surgical technology, and nursing laboratories

In promoting experiences that increased Youth Development, the partnership with the Youth Volunteer Corps of Hampton Roads was expanded. This past year, students participated in community service projects that opened their eyes to the wide range of needs in their community, and increased their awareness of the ways they could make a positive difference. The addition of rising ninth graders was a positive Youth Development experience for the older students, as they honed their leadership skills by facilitating activities and experiences for their peers. Many of the younger students expressed a desire to return to the camp in subsequent years in a leadership role.

With the establishment of the Heritage High School Governor's STEM Academy, we will look at ways to expand CampConnect to a year-round program to meet the following goals:

- partner with a local university that matches high school students with university students majoring in STEM fields. The university students will serve as mentors to the high school students throughout the school year.
- provide opportunities for students to visit local colleges and universities to interact with college professors, students, and content to learn about postsecondary education firsthand
- incorporate Youth Development experiences that promote leadership through community service, in partnership with the Youth Volunteer Corps of Hampton Roads
- promote college and career exploration
- identify emerging trends in science, technology, engineering, and mathematics

Additional summer opportunities available included The Greater Peninsula Summer Camp Series 2012 sponsored by the Peninsula Council for Workforce Development, which provides a variety of programs to explore career and education opportunities available on the Peninsula. The camps provide a first-hand look at the jobs and career pipelines available for graduating students. Scheduled throughout the summer, the camps feature presentations by local educators and industry leaders, round-table discussions, and on-site visits to industry and business, all courtesy of its participating partners. Organized by the Peninsula Council for Workforce Development, Thomas Nelson Community College, New Horizons Regional Education Centers, ECPI University, and industry partners, the camps provide students with important information, take-away resources, and a better understanding of industries currently facing continual growth and the demand for a qualified workforce (see Appendix I-Peninsula

Council for Workforce Development Summer Camp Series). Through a partnership with Newport News Public Schools, the Peninsula Council for Workforce Development also sponsors the Youth Career Café located in Patrick Henry Mall in Newport News, which provides career workshops, career speakers, resume development support, and tutoring for students, at no cost (see Appendix J-Youth Career Café ).

Heritage High School Governor’s STEM Academy students will participate in various school organizations that will provide educational and leadership development activities. Students may participate in First Tech Challenge (robotics club), SKILLS USA (trade and industrial education student organization) and TSA (technology student association). Establishing the Governor’s STEM Academy will allow for increased student interest and the opportunity to increase participation in STEM related student organizations and the need to establish additional student organizations.

### **Student Recruitment, Selection Criteria, and Admission Procedures**

Student recruitment will be the responsibility of the Heritage High School Governor’s STEM academy director and members of the planning and advisory committee.

Recruitment will begin at the middle school level in grades seven and eight. Visits to middle schools along with parent information nights, open houses, mentorship programs, and school-related functions are conducted to expose students and parents to the opportunities that are available at Heritage High School. Eligible high school students in the division will also be recruited.

All students interested in participating in the Governor’s STEM Academy at Heritage High School will be required to complete a Governor’s STEM Academy application (see Appendix K-Heritage High School Governor’s STEM Academy Student Application).

Students who are selected for the Academy will be required to meet the following criteria to complete the program successfully:

- Complete an advanced mathematics course beyond Algebra II
- Maintain a minimum of a 3.0 grade point average
- Take a mathematics, science, and technology course each year
- Complete a STEM work-based internship (minimum of 15 hours)
- Complete courses within a specific pathway in the STEM, Information Technology, or Architecture and Construction career clusters
- Earn an industry certification or at least nine transferrable college credits

- Complete 200 hours of school/community service (50 hours per school year)
- Complete Senior STEMinar course

The Senior STEMinar course will be an extension of our current public speaking class. A new curriculum will be written so that the STEMinar course will be provided to students in The Heritage High School Governor's STEM Academy. The course will be designed to advance student's preparation in critical reading, technical writing, and communication. Students enrolled in the course will have the opportunity to participate in work-based learning experiences to include a spring internship. Students will complete an electronic portfolio, digital media presentation, and STEM research project on emerging STEM careers. A culminating activity will be required that includes students demonstrating their mastery in their specified career pathway.

### **Student Code of Conduct, Attendance, and Safety**

The Heritage High School Governor's STEM Academy's student discipline, attendance, and safety policies will be handled according to the policies and practice of the school division and/or provider of services (e.g., colleges/universities, business partners).

### **Transportation**

Transportation will be provided by Newport News Public Schools Department of Transportation and will be in compliance with all applicable federal and state regulations. All students who attend Newport News Public Schools and are accepted into the Governor's STEM Academy at Heritage High School will be provided bus transportation. Bus stop locations and school zones can be found online at [www.nnschools.org/zonefinder](http://www.nnschools.org/zonefinder).

### **Fiscal Agent/Certificates of Insurance**

The fiscal agent for The Heritage High School Governor's STEM Academy will be Newport News Public Schools, which currently provides educational services to the community of Newport News, Virginia (see Appendix L-Liability Insurance Certificate and Certificate of Property Insurance).

### **Budget**

All start-up expenses required for The Heritage High School Governor's STEM Academy were incurred with the establishment of the Engineering and Technology Magnet program. Funding for the program will be secured through Newport News Public Schools. In addition to the school division's resources, grants and in-kind donations from business partners will also be used to supplement the program. Equipment and software updates will be funded through the Career and Technical Education budget and Perkins funds (see Appendix M-Budget).

### **Partnerships Capacity/Memorandum of Agreement (MOA)**

Business and industry, the public school division, and postsecondary institutions will be among the partners of the Heritage High School Governor's STEM Academy. Their role will be to

support the goals of the Heritage High School Governor's STEM Academy and to provide STEM resources and opportunities for students enrolled in the program.

A written MOA outlining ways in which community resources will contribute to the Heritage High School Governor's STEM Academy to broaden the scope of students' educational experiences will be signed by all current and future partners. This MOA outlines responsibilities for each of the partner groups to include Newport News Public Schools, local business and industry partners, and postsecondary institutions.

Heritage High School Governor's STEM Academy has formed strategic partnerships with local businesses, institutions of higher education, and workforce development agencies to ensure that our students are prepared to meet the future workforce demands STEM careers in our city and our region.

Newport News Public Schools, in partnership with Newport News Shipbuilding, Canon Virginia, Virginia Peninsula Chamber of Commerce, Peninsula Council for Workforce Development, Jefferson Labs, Thomas Nelson Community College, Norfolk State University, and Christopher Newport University, has developed the Heritage High School Governor's STEM Academy to advance the mission of ensuring that students are equipped with the skills they need to be globally competitive in the 21<sup>st</sup> century while focusing on careers in STEM (see Appendix N- Partnership Capacity/Memorandum of Agreement).

**Statement of Assurances**

A statement of assurances has been signed by Newport News Public Schools Superintendent on behalf of the Governor's STEM Academy stipulating that the Heritage High School Governor's STEM Academy Planning Committee has reviewed provisions of Administrative Procedures Guide for the Establishment of Governor's STEM Academies and agrees to follow the guidelines set forth in the document (see Appendix O-Statement of Assurances).

# APPENDICES

**APPENDIX A**  
***Bell Schedule***

# Heritage High School Governor's STEM Academy Bell Schedule 2013-2014

DAILY ANNOUNCEMENTS WILL BE MADE AT 1 <sup>ST</sup> BLOCK		
Homeroom 1	Homeroom 1	7:20-8:25
3	2	8:31-10:05
Block 5	Block 4	10:11 – 12:25 (Class and lunch)
<b>(Maroon &amp; PE Hall)</b> Class roll 10:11 – 10:14 Lunch 1 10:14-10:46 Class 10:50-12:25	<b>(Blue &amp; Library Front Hall)</b> Class 10:11-11:08 Lunch 2 11:08-11:39 Class 11:42-12:25	<b>(Teal &amp; Fine Arts Hall)</b> Class 10:11-11:54 Lunch 3 11:54-12:25
7	6	12:31-2:05

**\*Make-Up Days**

1. All high schools will begin the first day of school on an "A" day. Heritage = Maroon Day
2. If an "A" day is missed by all schools in the division, such as for snow, then the next pupil day becomes an "A" day. If an "A" day is missed at an individual school only (example: no electricity in the building) then that school must adapt to the schedule of the schools that were in session (i.e. the next pupil day may be a "B" day).
3. **Second Semester begins on an "A" day.**

**Half Day Schedule**

1 ..... 7:20–8:08  
 2, 3 ..... 8:14– 9:02  
 4, 5 ..... 9:08–9:56  
 6, 7 ..... 10:02–10:50

**Pep Rally Schedule**

1 ..... 7:20– 8:25  
 2, 3 ..... 8:31–10:05  
 4, 5 ..... 10:11–12:25  
 6, 7 ..... 12:31  
 Pep Rally .... approximately 1:15–2:05

**1 Hour Delay**

1 ..... 8:20–9:10  
 2, 3 ..... 9:16–10:05  
 4, 5 ..... 10:11–12:25  
 6, 7 ..... 12:31–2:05

**2 Hour Delay**

1 ..... 9:20–10:05  
 4, 5 ..... 10:11–12:25  
 6, 7 ..... 12:31–2:05

# **APPENDIX B**

## ***Plans of Studies***



PATHWAYS TO COLLEGE & CAREER READINESS

**Science, Technology,  
Engineering & Mathematics**

# Commonwealth of Virginia Plan of Study

**Cluster: Science, Technology, Engineering & Mathematics**

**Pathway: Engineering and Technology**

Rev: 6/12

Student Name: \_\_\_\_\_  
School: **HERITAGE HIGH SCHOOL**  
Date: \_\_\_\_\_

*This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.*

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide <a href="http://www.cleresource.org/apg/">http://www.cleresource.org/apg/</a>	SAMPLE – Occupations Related to This Pathway: <a href="http://www.doe.virginia.gov/instruction/career_tech/technicalcareer_clusters/sample_plans_study/index.shtml">http://www.doe.virginia.gov/instruction/career_tech/technicalcareer_clusters/sample_plans_study/index.shtml</a> <a href="http://www.careerclusters.org">http://www.careerclusters.org</a> <a href="http://www.cleresource.org/cpg/">http://www.cleresource.org/cpg/</a>
<b>Graduation Requirements: <a href="http://www.doe.virginia.gov/instruction/graduation/index.shtml">http://www.doe.virginia.gov/instruction/graduation/index.shtml</a></b>								
MIDDLE	7	Language Arts 7(1110)	Math 7 or higher(3111)	Life Science(4115)	U S History: 1877 to Present(2354)	Spanish I (5510)	Inventions and Innovations(8461)	<ul style="list-style-type: none"> <li>Automated Manufacturing Technician</li> <li>Calibration Technician</li> <li>Manager, Supervisor</li> <li>Quality Control Technician</li> <li>Quality Engineer</li> <li>Precision Inspector</li> <li>Mechanical Engineering Technician</li> <li>Industrial Engineer Technician</li> <li>Engineering Assistant</li> <li>Project Manager</li> <li>Drafter</li> <li>Mechanical Engineer</li> </ul>
	8	Language Arts 8(1120)	Math 8 (3112) OR Algebra I(3130)	Physical Science (4125)	Civics & Economics(2357)	Spanish I B (5510)	Technological Systems(8462)	
	Career Assessment : VA Wizard <input checked="" type="checkbox"/>							
SECONDARY	9	English 9 (1130)	Algebra I (3130) Or Geometry (3134) Or Algebra II (3135)	Earth Sciences (4210)	World Geography (2210) or Honors/AP Human Geography (2211)	Economics & Personal Finance (6120)	Engineering Explorations (8450) Or IT Fundamentals (6570) DE (ITE 170)	<ul style="list-style-type: none"> <li>Automated Manufacturing Technician</li> <li>Calibration Technician</li> <li>Manager, Supervisor</li> <li>Quality Control Technician</li> <li>Quality Engineer</li> <li>Precision Inspector</li> <li>Mechanical Engineering Technician</li> <li>Industrial Engineer Technician</li> <li>Engineering Assistant</li> <li>Project Manager</li> <li>Drafter</li> <li>Mechanical Engineer</li> </ul>
	10	English 10 (1140)	Geometry (3143) Or Algebra II (3135)	Biology I (4310) Or AP Biology (4370y)	World History (2340) Or AP World History (2343) Or Geography II (2221)	Health & PE (7425) Foreign Language Spanish (5510/5520/5530)	Intro Engineering Design (8490) Or Engineering Explorations (8450)	
	11	English (1150)	Geometry (3143) Or Algebra II (3135) Or Trigonometry/Elementary Functions (3150/3154) Or H Math Analysis (3162)	Chemistry (4410) Or AP Chemistry(4470)	US/VA History (2360) Or AP US History(2319)	Advanced Engineering (8491) Or Electronics I (8416)		
12	English (1160)	Trigonometry/Elementary Functions (3150/3154) Or H Math Analysis (3162) Or Calculus Or AP Calculus	Physics (4510) Or AP Physics Or AP Chemistry(4470) Or Other Science	US/VA Government(2440) Or AP Government(2445)	Electronics II (8142) Or Student Selected Technology Elective			

**High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)**

List related certifications/credentials approved by VDOE and offered locally: <http://www.cteresource.org/app> (Go to Certification – License Section)  
Autodesk AutoCAD Certification  
IC3  
NCOCTI Pre-Engineering  
Workplace Readiness Skills for the Commonwealth (CTECS)

**Additional Learning Opportunities:**  
CTISO Organization(s):  DECA  FBLA  FCCLA  FFA  
 FEA  HOSA  SkillsUSA  TSA

**Work-Based Learning:**  
 Career Research  Cooperative Education  Internship  Mentorship  
 Job Shadowing  Service Learning Project  Student Apprenticeship

Postsecondary: Placement Assessments such as COMPASS

College Entrance Exams such as ACT & SAT

**POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY**  
Individual plans must include locally agreed upon courses at the postsecondary level (See below)

POSTSECONDARY	Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
Engineering and Technology	Mechanical Engineering Technology (A.A.S. Thomas Nelson Community College)	Mechanical Engineering Technology (B.S. Old Dominion University)	Master of Engineering (M.E.) Master of Science (M.S.) Doctor of Philosophy (Ph.D.) Doctor of Engineering (Eng. D.) (Old Dominion University)	

College: Thomas Nelson Community College

School Division(s): Newport News Public Schools

Postsecondary: Placement Assessments such as Virginia Placement Test or COMPASS

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives
Year 1 1 <sup>st</sup> Semeste	POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE. College Composition I (ENG 111) If not taken as dual enrollment.	Pre-Calculus 1 (MTH 163) If not taken as dual enrollment.	College Physics (PHY 201)	College Success Skills (SPV 100)	Engineering Drawing Fundamentals I (CAD 151) If not taken as dual enrollment.
Year 1 2 <sup>nd</sup> Semeste	College Composition II (ENG 112) If not taken as dual enrollment.	Pre-Calculus II (MTH 164) If not taken as dual enrollment.	College Physics II (PHY 202)	Principles of Economics I	Engineering Drawing Fundamentals II (CAD 152)
Year 2 1 <sup>st</sup> Semeste		Calculus I (MTH 172) If not taken as dual enrollment.	Social Science Elective	Humanities Elective	Mechanics I- Statics for Engineering Tech (MEC 131)
Year 2 2 <sup>nd</sup> Semeste		Elective	Elective	Elective	Mechanics II- Strength of Materials for Engineering Technology (MEC 132)

Related Industry Certifications Available:  
Autodesk AutoCAD

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

**Additional Suggested Learning Opportunities:**  
Work-Based Learning:  Cooperative Education  Internship  Mentorship  
 Job Shadowing  Service Learning Project  Registered Apprenticeship

UNIVERSITY  
University/College: Old Dominion University  
Degree or Major: Mechanical Engineering Technology  
Number of Articulated CC Credits:

Notes: Thomas Nelson CC and Old Dominion University have a Guaranteed Admissions Agreement.



POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY			
Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)			
POSTSECONDARY	Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree
	Programming and Software Development	Computer Science – AS Information Technology – AS	Modeling & Simulation
			Postgraduate Degree

College: [Thomas Nelson Community College](#)

School Division(s): [Newport News Public Schools](#)

Postsecondary: Placement Assessments such as Virginia Placement Test or COMPASS

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives
<b>POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.</b>					
Year 1 1st Semester	College Composition I (ENG 111) <i>If not taken as dual enrollment.</i>	Pre-Calculus I (MTH 163)	General College Physics I (PHY 201)		College Success Skills (SDV 100)
Year 1 2nd Semester	College Composition II (ENG 112) <i>If not taken as dual enrollment.</i>	Pre-Calculus II (MTH 164)		Principles of Psychology (PSY 200)	Health or Physical Education
Year 2 1st Semester		Statistics (MTH 240)	Humanities Elective		Modeling & Simulation I (SIM 201)
Year 2 2nd Semester		Mathematical Structures (MTH 287)			Principles of Information Systems (ITE 120)
					Introduction to Telecommunications (ITN 100)
					IT Degree Elective
					IT Degree Elective

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

Related Industry Certifications Available:  
Adobe Certified Associate (Microsoft)

Additional Suggested Learning Opportunities:

- Work-Based Learning:
- Cooperative Education
  - Job Shadowing
  - Internship
  - Service Learning Project
  - Mentorship
  - Registered Apprenticeship

UNIVERSITY  
University/College: Old Dominion University  
Degree or Major: Modeling & Simulation Engineering  
Number of Articulated CC Credits:

Notes:

# Commonwealth of Virginia Plan of Study

Student Name: \_\_\_\_\_  
School: Heritage High School  
Date: \_\_\_\_\_

Rev: 6/12

## Cluster: Information Technology Pathway: Information Support and Services

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide <a href="http://www.cleresource.org/apg/">http://www.cleresource.org/apg/</a>	SAMPLE – Occupations Relating to This Pathway: <a href="http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml">http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml</a> <a href="http://www.careerclusters.org">http://www.careerclusters.org</a> <a href="http://www.cleresource.org/cpg/">http://www.cleresource.org/cpg/</a>
MIDDLE	7	Language Arts 7 (1110)	Math 7 (3111)	Life Science (4115)	U S History (2354)	Spanish I (5510)	Computer Solutions (6611)	<ul style="list-style-type: none"> <li>Account Manager</li> <li>Applications Integrator</li> <li>Call Center Support Representative</li> <li>Customer Service Representative</li> <li>Data Systems Designer</li> <li>Database Administrator</li> <li>Database Analyst</li> <li>E-Business Specialist</li> <li>Help Desk Specialist</li> <li>Information Systems Architect</li> <li>Institutional Designer</li> <li>Maintenance Technician</li> <li>PC Support Specialist</li> <li>PC Systems Coordinator</li> <li>Product Support Engineer</li> <li>Support Engineer</li> <li>Systems Analyst</li> <li>Technical Communicator</li> <li>Testing Engineer</li> </ul>
	8	Language Arts 8 (1120)	Math 8/Pre-Algebra (3112)	Physical Science (4125)	Civics & Economics (2357)	Spanish I B (5510)	Computer Applications (6617)	
Career Assessment: VA Wizard								
SECONDARY	9	English (1130)	Algebra I (3130) Or Geometry (3134) Or Algebra II (3135)	Earth Sciences (4210)	World Geography (2210) or Honors/AP Human Geography (2211)	Economics and Personal Finance (6120) Health & PE (2 years) Foreign Language (3 years) Other Electives to Complement Pathway (Core Academic and CTE):	IT Fundamentals (6670 )  Computer Systems Tech I (8622) OR Computer Networking Hardware Operations (CNHO) I and II (8542/8543)	<ul style="list-style-type: none"> <li>Maintenance Technician</li> <li>PC Support Specialist</li> <li>PC Systems Coordinator</li> <li>Product Support Engineer</li> <li>Support Engineer</li> <li>Systems Analyst</li> <li>Technical Communicator</li> <li>Testing Engineer</li> </ul>
	10	English (1140)	Geometry (3143) Or Algebra II (3135)	Biology I (4310) Or AP Biology (4370)y	World History (2340) Or AP World History (2343) Or Geography II (2221)	Advanced Computer Information Systems 6613 Computer Networking Software Operations (CNSO) 6650 CNSO 6651 Programming 6640	Computer Systems Tech II (8623) OR Computer Networking Hardware Operations CNHO III and IV (8544/8545)	
	11	English (1150)	Trigonometry/Elementary Functions (3150/3154) Or H Math Analysis (3162) Or AP Calculus	Chemistry (4410) Or AP Chemistry(4470)	US/VA History (2360) Or AP US History(2319)	Computer Systems Tech III (8624) Computer Maintenance (8621)		
12	English (1160)	Trigonometry/Elementary Functions (3150/3154) Or H Math Analysis (3162) Or AP Calculus	Physics (4510) Or AP Physics Or AP Chemistry(4470) Or Other Science	US/VA Government(2440) Or AP Government(2445)				
High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)								
List related certifications/credentials approved by VDOE and offered locally: <a href="http://www.cleresource.org/apg">http://www.cleresource.org/apg</a> (Go to Certification - License Section.) IC3; Microsoft Technology Associate; COMPTIA A+; COMPTIA NetPlus;								
Additional Learning Opportunities: CTSO Organization(s): <input type="checkbox"/> DECA <input type="checkbox"/> FBLA <input type="checkbox"/> FFA <input type="checkbox"/> HOSA <input type="checkbox"/> FCCLA <input type="checkbox"/> SkillsUSA <input type="checkbox"/> TSA								
Work-Based Learning: <input type="checkbox"/> Career Research <input checked="" type="checkbox"/> Cooperative Education <input type="checkbox"/> Internship <input checked="" type="checkbox"/> Mentorship <input type="checkbox"/> Job Shadowing <input type="checkbox"/> Service Learning Project <input type="checkbox"/> Student Apprenticeship								
Postsecondary: Placement Assessments : COMPASS College Entrance Exams such as ACT & SAT								

POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY			
Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)			
POSTSECONDARY	Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree
	Information Support and Services	Computer Science – AS (Transfer) Information Technology – AS (Transfer)	Information Technology
			Postgraduate Degree

College: [Thomas Nelson Community College](#)

School Division(s): [Newport News Public Schools](#)

Postsecondary: Placement Assessments such as Virginia Placement Test or COMPASS

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally						
Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives	
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.						
Year 1 1st Semester	College Composition I (ENG 111) If not taken as dual enrollment.	College Algebra (MTH 158)		Humanities Elective	College Success Skills (SDV 100)	Introduction to Business (BUS 100)
Year 1 2nd Semester	College Composition II (ENG 112) If not taken as dual enrollment.			Principles of Psychology (PSY 200)	Health or Physical Education	Organizational Behavior (BUS 201)
Year 2 1st Semester					Principles of Information Systems (ITE 120)	Introduction to E-Commerce (ITE 160)
Year 2 2nd Semester			IT Degree Elective	IT Degree Elective	Systems Development Project (ITP 256)	IT Degree Elective
College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)						
Related Industry Certifications Available:					Additional Suggested Learning Opportunities:	
IC3; Microsoft Technology Associate ; COMPTIA A+; COMPTIA NetPlus					Work-Based Learning: <input type="checkbox"/> Cooperative Education <input type="checkbox"/> Job Shadowing <input type="checkbox"/> Internship <input checked="" type="checkbox"/> Service Learning Project <input type="checkbox"/> Mentorship <input type="checkbox"/> Registered Apprenticeship	
UNIVERSITY						
University/College: Old Dominion University						
Degree or Major: Information Technology						
Number of Articulated CC Credits:						
Notes:						



**CareerClusters™**  
PATHWAYS TO COLLEGE & CAREER READINESS

# Commonwealth of Virginia Plan of Study

Student Name: \_\_\_\_\_  
School: HERITAGE HIGH SCHOOL  
Date: \_\_\_\_\_

Cluster: Architecture & Construction Pathway: Design/Pre-Construction

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide <a href="http://www.cleresource.org/apg/">http://www.cleresource.org/apg/</a>	SAMPLE – Occupations Relating to This Pathway: <a href="http://www.doe.virginia.gov/instruction/career_technical/career_clusters/samplePlans_study/index.shtml">http://www.doe.virginia.gov/instruction/career_technical/career_clusters/samplePlans_study/index.shtml</a> <a href="http://www.careerclusters.org">http://www.careerclusters.org</a> <a href="http://www.cleresource.org/cpg/">http://www.cleresource.org/cpg/</a>

NOTE: Indicate State Course Titles and Codes

MIDDLE	7	Language Arts 7 (1110)	Math 7 (3111)	Life Science (4115)	U S History (2354)	World Language (5700)	Inventions and Innovations(8461)	- Architect - Architectural Drafter - Building Code Inspector - Building Code Official - Building Designer - Civil Engineer - Code Official - Cost Estimator - Drafter - Electrical Engineer - Electrical Engineering Technician - Electronic Engineer - Electronic Engineering Technician - Environmental Designer - Environmental Engineer - Environmental Engineering Technician - Fire Prevention/Protection Engineer - Industrial Engineer - Interior Designer - Landscape Architect - Materials Engineer - Mechanical Drafter - Mechanical Engineer - Regional and Urban Planner/Designer - Safety Director - Specification Writer - Structural Engineer - Surveying/Mapping Technician - Surveyor
	8	Language Arts 8 (1120)	Math 8/Pre-Algebra (3112)	Physical Science (4125)	Civics & Economics (2357)	World Language (5700)	Technological Systems (8462)	

Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school:  
VA Wizard  or other assessment (please indicate): \_\_\_\_\_

SECONDARY	9	English (1130)	Algebra I (3130) Or Geometry (3134) Or Algebra II (3135)	Earth Sciences (4210)	World Geography (2210) or Honors/AP Human Geography (2211)	Economics & Personal Finance (6120) Health & PE (2 years) Foreign Language (3 years) Other Electives to Complement Pathway (Core Academic and CTE):	IT Fundamentals (6670) DE (ITE 170)	
	10	English (1140)	Geometry (3143) Or Algebra II (3135)	Biology I (4310) Or AP Biology(4730)	World History (2340) Or AP World History (2343) Or Geography II (2221)	Technical Drawing & Design (8435)		
	11	English (1150)	Geometry (3143) Or Algebra II (3135) Or Trigonometry/Elementary Functions (3150/3154) Or H Math Analysis (3162)	Chemistry (4410) Or AP Chemistry(4470)	USNA History (2360) Or AP US History(2319)	Engineering Drawing (8436) DE (CAD 151)		
	12	English (1160)	Trigonometry/Elementary Functions (3150/3154) Or H Math Analysis (3162) Or Calculus Or AP Calculus (3177)	Physics (4510) or Principles of Technology I and II (9811/9812)	USNA Government(2440) Or AP Government(2445)	Architectural Drawing(8437)		

High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

List related certifications/credentials approved by VDOE and offered locally:  
<http://www.cleresource.org/abq> (Go to Certification – License Section)

Autodesk AutoCAD exam  
Workplace Readiness Skills for the Commonwealth (CTECS)

- Additional Learning Opportunities:**  
CTSO Organization(s):  DECA  FBLA  FFA  FFA  FFA  
 HOSA  SkillsUSA  TSA
- Work-Based Learning:**  
 Career Research  Cooperative Education  Internship  Mentorship  
 Job Shadowing  Service Learning Project  Student Apprenticeship

<b>Postsecondary:</b> Placement Assessments such as Virginia Placement Test or COMPASS		College Entrance Exams such as ACT & SAT	
<b>POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY</b> Individual plans must include locally agreed upon courses at the postsecondary level. (See page 2)			
POSTSECONDARY	Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree
	Design/Pre-Construction	Computer Aided Drafting & Design Technology	Engineering Technology
			Postgraduate Degree

College: [Thomas Nelson Community College](#)

School Division(s): [Newport News Public Schools](#)

<b>Postsecondary:</b> Placement Assessments such as Virginia Placement Test or COMPASS		College Entrance Exams such as ACT & SAT							
<b>POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY</b> Individual plans must include locally agreed upon courses at the postsecondary level. (See page 2)									
POSTSECONDARY	Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree						
	Design/Pre-Construction	Computer Aided Drafting & Design Technology	Engineering Technology						
			Postgraduate Degree						
<b>POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.</b>									
<b>Semester</b>		<b>English</b>	<b>Mathematics</b>	<b>Science</b>	<b>Social Studies</b>	<b>Required Courses or Recommended Electives</b>			
<b>POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.</b>									
Year 1 1st Semester	College Composition I (ENG 111) <i>If not taken as dual enrollment.</i>	Technical Mathematics I (MTH 115)	College Physics (PHY 201)			College Success Skills (SDV 100)	Engineering Drawing Fundamentals (CAD 151) <i>If not taken as dual enrollment.</i>	Materials and Processes of Industry (MEC 113) <i>If not taken as dual enrollment.</i>	Advanced Technical Drafting I (CAD 211)
Year 1 2nd Semester	Technical Writing(ENG 115)	Technical Mathematics I (MTH 115)	College Physics II (PHY 202)	Principles of Economics I		Health or Physical Education	Engineering Drawing Fundamentals II (CAD 152)	Mechanics I- Statics for Engineering Tech (MEC 131)	
Year 2 1st Semester			Social Science Elective	Humanities Elective		Elective	Computer Aided Drafting & Design II (CAD 202)	Mechanics II- Strength of Materials for Engineering Technology (MEC 132)	Parametric Solid Modeling I (CAD 241)
Year 2 2nd Semester		Elective	Social Science Elective	Elective		Elective	Mechanics III- Dynamics for Engineering Technology (MEC 133)	Elective	Design Capstone Project (CAD 280)
College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)									
<b>Related Industry Certifications Available:</b>					<b>Additional Suggested Learning Opportunities:</b>				
Autodesk AutoCAD					<b>Work-Based Learning:</b> <input checked="" type="checkbox"/> Cooperative Education <input checked="" type="checkbox"/> Internship <input type="checkbox"/> Mentorship <input type="checkbox"/> Job Shadowing <input type="checkbox"/> Service Learning Project <input type="checkbox"/> Registered Apprenticeship				
<b>UNIVERSITY</b>					University/College: Old Dominion University Degree or Major: Engineering Technology Number of Articulated CC Credits:				
Notes: Thomas Nelson Community College has a Guaranteed Admissions Agreement with Old Dominion University									

# **APPENDIX C**

## ***Thomas Nelson Dual Enrollment Agreement***



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**Dual Enrollment Contract**  
2012-2013  
*Between Thomas Nelson Community College  
and the Newport News Public Schools*

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The purpose of this agreement is to set out the terms and conditions upon which courses will be offered under the "Virginia Plan for Dual Enrollment Between Virginia Public Schools and Community Colleges" established by the Secretary of Education, the VCCS Chancellor, and the Superintendent of Public Instruction in January 2005. The purpose of this offering is to allow high school students to take college-level courses and receive both college credit and high school credit towards graduation.

Each party does hereby agree to the following:

1. **General**

Under this agreement, Thomas Nelson Community College, (herein after "the College"), will make available college-level courses to students of the **Newport News Public Schools** for the **2012-2013** academic year.

The courses to be offered will be established by mutual agreement of both parties for the fall and spring semesters. A list of courses can be found in **Attachment 1** which is hereby incorporated into this agreement.

The responsibilities of the parties pursuant to this agreement are conditional upon student registration for the course(s) being completed and subject to adequate student enrollment as determined by the college. The College and the **Newport News Public Schools** reserve the right to cancel any class sections or add sections, no later than the census date for the class as determined by the college.

2. **Tuition & Fees**

Pursuant to the Virginia Plan for Dual Enrollment, schools and colleges are encouraged to provide high school students the opportunity for dual enrollment at no cost to them or their families. If tuition will be charged, then the School will pay on behalf of the student or students, or the student will pay the College, the mandatory tuition and any fees established by the State Board for Community Colleges at the rate then in effect at the time the classes begin. Where the School agrees to pay the tuition and fees, the College will bill the School on a semester basis per **Attachment 2**. If the parties agree the students are responsible for such payments, the College will bill the students directly for them.

3. **Textbooks**

The College reserves the right to determine the textbooks used in dual enrollment courses. [The provision of all dual enrollment course textbooks is the responsibility of the **Newport News Public Schools**.]

4. **Payment for Other Services**

Fees and reimbursement for other costs and services will be determined by mutual consent of the **Newport News Public Schools** and the College per **Attachment 2**, which is hereby incorporated herein and made a part of this Agreement.

5. **Faculty**

a. **Selection**

(1) **Authority to Select/Hire**

The selection and supervision of instructional faculty for all community college courses covered by this agreement will be the responsibility of the College. The **Newport News Public Schools** may recommend qualified teachers who are interested in teaching in the dual enrollment program to the College for consideration. Each faculty member teaching in the dual enrollment program shall be a member of the college's full-time or part-time faculty or an employee of the **Newport News Public Schools**.

(2) Dual enrollment course faculty must meet the minimum credential requirements set forth by Form VCCS-29 (**Attachment 3**) and the Southern Association of Colleges and Schools.

b. Payment

If the instructor for the dual enrollment course(s) is employed full time by the **Newport News Public Schools** and the course(s) are part of the assigned teaching workload, the College will reimburse the **Newport News Public Schools** for the services of its employee in lieu of direct compensation to the faculty member. If, however, the College employs an instructor that is not affiliated with the **Newport News Public Schools**, the College will compensate the faculty member directly. Reimbursement and/or payment of faculty salaries directly will be in accordance with the Virginia Community College System approved lecturer rates depending on qualifications of the instructor and will occur no later than the end of the semester of the course. Other reimbursement procedures, mutually agreeable to both the College and the school division, can also be implemented as an alternative if evidenced in writing.

c. Faculty Responsibilities

- (1) Instructors will be expected to conform to college policies for the dual enrollment courses they teach, such as preparing course syllabi, verifying class rosters, reporting student progress to the college at mid-semester, taking attendance, and providing final grades at the end of the semester.
- (2) Evaluation
  - (a) Instructor Evaluation – The College will conduct faculty evaluations for dual enrollment instructors using the College guidelines adopted for all adjunct faculty. A copy of the observation results will be submitted to the designated school division representative.
  - (b) Student Evaluation – Student evaluations on all dual enrollment adjunct instructors will be conducted each semester for each course offered through the Dual Enrollment Program. Results of the student evaluations will be compiled and shared with the Dean, Program Lead, faculty, and designated school division representative.
- (3) All faculty teaching dual enrollment courses will be required to attend faculty orientation and other in-service programs as agreed upon by both parties.

6. Students

a. Selection and Eligibility to Participate in Dual Enrollment Program

- (1) In order to be eligible to participate in the Dual Enrollment Program, students must be high school juniors and seniors, have permission of their parent or guardian to participate, be recommended by their high school principal to cross register, and meet course prerequisites.
- (2) Students must meet admission and course placement requirements of the college. Requirements for dual enrollment include completion of the college application for admission, completion and receipt of satisfactory scores on the college placement tests when required, and registration for the dual enrollment course(s).
- (3) Exceptions to the policies established in 6.a.(1) and 6.a.(2) regarding student eligibility may be made on a case-by-case basis with the approval of the public school superintendent and appropriate community college officials, so long as such exceptions are in accordance with the VCCS Policy Manual.

7. College Administrative Responsibilities

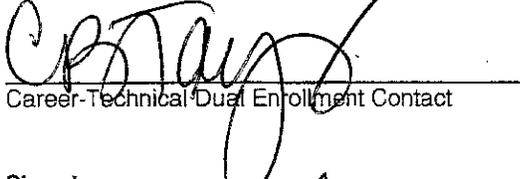
- a. The College, through its instructor(s), will provide the appropriate **Newport News Public Schools** officials with progress reports on each student from time to time as shall be agreed by the contracting school division and College. At the conclusion of each college academic term, the student will receive a college grade for each course in which he/she was registered and such grades will become part of the student's permanent college record.
- b. A record will be maintained by the College for each student in the Dual Enrollment Program as a part of the permanent college record maintained by the College's Admissions and Records office. The College will send transcripts to colleges/universities upon a student's request.
- c. The College will provide a minimum of 750 minutes of instruction (to include testing and evaluation) for each lecture credit or lab contact hour per semester to **Newport News Public Schools** students enrolled in college courses under this agreement.

8. High School Administrative Responsibilities

The **Newport News Public Schools** will verify enrollments in each class section, and instructors will report grades to the College within a prescribed period of time, according to established procedures.

9. **Award of Credit**  
College and high school credit shall be awarded to the participating high school student upon successful completion of the course.
10. **Course Standards**
- a. **Course Equivalency, Evaluation, and Assessment**  
Assessment has long been recognized in Virginia as an important aspect of an effective instructional program. In this spirit, all dual enrollment courses developed and implemented under the auspices of the Virginia Plan for Dual Enrollment and this contract shall include a formal mechanism for evaluation. The College has the responsibility to ensure that all dual enrollment courses taught are equivalent to other instruction offered by the College, specifically in terms of course objectives, components of the syllabi, level and rigor of content, evaluation of students, textbooks, student outcomes and assessment, and faculty evaluation.
  - b. **Modifications of Policies**  
Modifications of on-campus policies, procedures, and rules appropriate to the high school setting may be agreed to by the parties in writing before each term begins.
  - c. **Student Performance**  
The College reserves the right to advise the student, parents, and the school division that the student does not have sufficient skills or abilities to continue in the courses selected after the first semester.
11. **Agreement Liaisons**  
Liaisons for this agreement are:
- the School Division: ***Ashby Kilgore, Ed.D., Superintendent***
  - the College: ***Vicki Richmond, Ph.D., Vice President for Student Affairs***
12. **Transferability**  
Normally, academic courses intended for transfer with a grade of "C" or above will transfer to institutions of higher education. However, no guarantee can be made to students regarding transferability to all colleges and universities. Community college occupational/technical course credits earned are applicable to specific curricula and are intended to prepare students for employment in those areas. While some of these courses may be accepted for transfer, no unified policy on the transfer of VCCS courses exists. The School should advise students to consult with transfer institutions in order to determine if their courses will be accepted for transfer.
13. The College reserves the right to enroll other students in the courses subject to this contract when those courses are offered on the College's campus or sites not at the high school.
14. Each party will be responsible for liability coverage of its employees and agents in fulfilling its responsibilities under this agreement, to the extent authorized by law.
15. If either party wishes to terminate this agreement, a written notice must be provided to the other party within [30]\* days of the requested termination date. Termination will not take place until dual enrollment courses in progress are completed.  
\*The number of days should be negotiated between the School Division and the Community College.
16. The College or the ***Newport News Public Schools*** shall not unlawfully discriminate on the basis of race, nationality, ethnicity, religion, gender, age, or disability in any undertaking pursuant to this contract. Disabled students will continue to receive accommodations through the School pursuant to the Individuals with Disabilities Education Improvement Act of 2004, 20 U.S.C § 1400.
17. Nothing herein shall be construed as a waiver of the sovereign immunity of the Commonwealth of Virginia or the assumption of any liability contrary to Virginia law.

**Names of School Division Dual Enrollment Contacts for 2012-2013:**

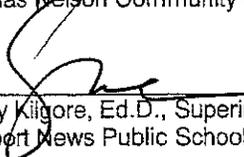
  
\_\_\_\_\_  
Career-Technical Dual Enrollment Contact

  
\_\_\_\_\_  
Academic Dual Enrollment Contact

**Signatures:**

  
\_\_\_\_\_  
John T. Dever, Ph.D., President  
Thomas Nelson Community College

8-30-2012  
Date

  
\_\_\_\_\_  
Ashby Kilgore, Ed.D., Superintendent  
Newport News Public Schools

9-5-12  
Date

## ATTACHMENT 1

### Thomas Nelson Community College Newport News Public Schools Approved Dual Enrollment Courses 2012-2013

Thomas Nelson Community College has approved the college-level courses listed below for dual enrollment to high school students in the Newport News Public Schools for the 2012-2013 academic year.

If offered for dual enrollment, these courses will be taught in Newport News Public Schools high schools by TNCC-approved Newport News Public Schools instructors.

<b>Approved Dual Enrollment Courses 2012-2013 Newport News Public Schools</b>		
<i>High School Course</i>	<i>TNCC Course</i>	<i>TNCC Credit</i>
Computer Graphics	ART 283	3
Digital Input Technologies (DIT)	AST 101	3
Computer Keyboarding	AST 117	1
Computer Information Systems (CIS)	AST 232	3
Business Management	BUS 100	3
Virtual Enterprise	BUS 230	4
Engineering Drawing	CAD 151	3
AP Chemistry	CHM 111	4
AP English: Language & Composition	ENG 111	3
Early College Honors English 12	ENG 112	3
AP World History I	HIS 111	3
AP World History II	HIS 112	3
AP United States History I	HIS 121	3
AP United States History II	HIS 122	3
IT Fundamentals	ITE 120	3
Design, Multimedia & Web Technologies	ITE 170	3
Advanced Computer Information Systems	ITE 215	3
Computer Systems Technology II	ITE 221	3
Introduction to Engineering	MEC 100	2
Advanced Marketing	MKT 216	3
AP Calculus	MTH 173	4
AP Statistics	MTH 240	3
AP U.S Government & Politics	PLS 135	3

**ATTACHMENT 2**  
**Tuition Information**  
**for School Divisions & Schools**

**Thomas Nelson Community College**  
**In-School Dual Enrollment Tuition Rates / 2012-2013**  
**Effective for Fall Semester 2011 / \$15.00 per credit hour**

**Newport News Public Schools**

TNCC requests that the Superintendent/School Executive initial (*in the third column below*) the dual enrollment payment option selected for the school division for the 2012-2013 academic year.

Payment Option	Example	Superintendent Initials
<p style="text-align: center;"><b>1</b> <b>Student Pays</b></p>	<p>Dual Enrollment tuition is \$15 per credit hour. The student attaches a check to the <i>DE College Registration Form</i>. A 3-credit course (3 x \$15) is \$45.</p>	
<p style="text-align: center;"><b>2</b> <b>School Division Pays</b></p>	<p>Dual Enrollment tuition is \$15 per credit hour. TNCC will invoice the school division for the credit hours taken by students in all DE courses. For example, the tuition for 30 students in a 3-credit course (30 x 3 x \$15) is \$1,350.</p> <hr style="width: 20%; margin: 10px auto;"/> <p><b>NOTE:</b> There will be <i>no-cost</i> to the school division if 100% of the students in an approved DE course submit a <i>DE College Registration Form</i> according to <i>no-cost</i> criteria.</p> <p><b><u>Meets No-Cost Criteria</u></b>  Of 30 students on a high school course roster, 25 submit a <i>DE College Registration Form</i> selecting dual enrollment, 3 submit a <i>DE College Registration Form</i> declining dual enrollment, and 2 submit a <i>DE College Registration Form</i> but do not meet registration requirements. This course <u>meets</u> <i>no-cost</i> registration criteria.</p> <p><b><u>Does Not Meet No-Cost Criteria</u></b>  Of 30 students on a high school course roster, 25 submit a <i>DE College Registration Form</i> selecting dual enrollment, 2 submit a <i>DE College Registration Form</i> declining dual enrollment, and 3 do not return a <i>DE College Registration Form</i>. This course <u>does not meet</u> <i>no-cost</i> registration criteria. TNCC invoices the school division for DE tuition for the 25 students who registered for the approved DE course. For example, the tuition for 25 students in a 3-credit course (25 x 3 x \$15) is \$1,125.</p>	

Virginia Community College System  
NORMAL MINIMUM CRITERIA FOR EACH FACULTY RANK

ATTACHMENT 3 -- VCCS FORM 29

	Faculty in Humanities, Soc. Sciences, Natural Sciences and Health, Developmental Studies, Counselors, Librarians	Faculty in Specialized Professional or Technical Associate in Applied Sciences or Arts Degree Fields	Faculty in Non-Associate Degree Occupational Fields
	Initial Appointment/Promotions Column 1	Promotions Column 2	Initial Appointment/Promotions Column 3
	Initial Appointment/Promotions Column 4	Promotions Column 5	Promotions Column 6
<b>ASSISTANT INSTRUCTOR</b>	<p>Appointments on a temporary or emergency basis for a period of one year for persons who meet most of the minimum requirements for the instructor rank and who show evidence of being able to complete such requirements within one year. A one-year renewal only if assistant instructor appointment may be considered upon request of the college administrator for a person who is actively pursuing completion of the necessary requirements.</p>		
<b>INSTRUCTOR</b>	<p>Good</p> <p>Master's in field or Master's w/18 grad. s.h. in teaching field (The minimum requirement for faculty teaching developmental courses at the instructor level is a baccalaureate degree.)</p> <p>0 yrs. 0 yrs. 0 yrs.</p> <p>Demonstrates Potential</p>	<p>Good</p> <p>Bachelor's in teaching field or Associate's in teaching field with demonstrated competency in teaching field.</p> <p>2 yrs. 0 yrs. 0 yrs.</p> <p>Demonstrates Potential</p>	<p>Good</p> <p>H.S. dip. or equiv., Assoc. or equiv. in teaching field preferred.</p> <p>5 yrs. current exper. 0 yrs. 0 yrs.</p> <p>Demonstrates Potential</p>
<b>ASSISTANT PROFESSOR</b>	<p>Very Good</p> <p>Master's + 24 grad. s.h. (27 grad. s.h. in teaching field.)</p> <p>0 yrs. 0 yrs. 0 yrs.</p> <p>Good</p> <p>Excellent</p>	<p>Very Good</p> <p>Master's + 15 grad. s.h. (27 grad. s.h. in teaching field)</p> <p>0 yrs. 3 yrs. 3 yrs.</p> <p>Good</p> <p>Excellent</p>	<p>Very Good</p> <p>Bachelor's in teaching field +15 grad. s.h.</p> <p>2 yrs. 0 yrs. 0 yrs.</p> <p>Good</p> <p>Excellent</p>
<b>ASSOCIATE PROFESSOR</b>	<p>Excellent</p> <p>Doctorate (36 grad. s.h. in teaching field)</p> <p>0 yrs. 6 yrs. 0 yrs.</p> <p>Very Good</p> <p>0 yrs.</p>	<p>Excellent</p> <p>Master's related to teaching field +15 grad. s.h.</p> <p>2 yrs. 6 yrs. 0 yrs.</p> <p>Very Good</p> <p>0 yrs.</p>	<p>Excellent</p> <p>Master's related to teaching field</p> <p>2 yrs. 6 yrs. 3 yrs.</p> <p>Very Good</p> <p>0 yrs.</p>
<b>PROFESSOR</b>	<p>Excellent</p> <p>Doctorate (36 grad. s.h. in teaching field)</p> <p>0 yrs. 9 yrs. 0 yrs.</p> <p>Exceptional</p> <p>0 yrs.</p>	<p>Excellent</p> <p>Master's related to teaching field +36 grad. s.h.</p> <p>2 yrs. 9 yrs. 0 yrs.</p> <p>Exceptional</p> <p>0 yrs.</p>	<p>Excellent</p> <p>Master's related to the teaching field or equiv., + 30 s.h.</p> <p>5 yrs. 6 yrs. 3 yrs.</p> <p>Very Good</p> <p>0 yrs.</p>

# Dual Enrollment 101

for High School Students & Parents 2012-2013

## What are the steps to enroll in a TNCC Dual Enrollment (DE) Course?

### STEP 1 APPLY TO TNCC

Students apply to the College only once; there is no application fee. They must complete the TNCC application online via:

[www.tncc.edu/apply](http://www.tncc.edu/apply)

At the end of their application they will receive a seven-digit TNCC ID# which they will need for their placement test and registration.

### STEP 2 TEST FOR ELIGIBILITY

Students must take the college placement test. There is no testing fee and no appointment is needed. For practice, sample test questions are available on our website. TNCC will notify students of DE eligibility based on their test results.

\* On-Campus Placement Testing - Students must take their TNCC ID# and a photo ID to the test session and identify themselves as a DE student.

\* In-High School Placement Testing - See counselors for test date. Students must take their TNCC ID# and their own calculator to the in-school test session. (TI-89 & TI-92 calculators may NOT be used.)

A test waiver may be granted by submitting a copy of official SAT (min. area scores: Critical Reading - 500; Critical Writing - 500; Math - 520) or ACT (min. area scores: English - 21 & Math - 22) scores prior to DE registration. Fax scores with your name, school & TNCC ID# to 757.825.3601.

*Note:* A test waiver will not be granted for the following courses: MTH 173, 174, 180, 240, 277, 285; CHM 111, 112; PHY 241, 242. If students plan to register for any of these courses, they must take the placement test.

### STEP 3 REGISTER FOR THE COURSE

Students must register each term for a new DE course. After students have applied and taken the placement test, their DE teacher will give them a DE College Registration Form at the first class meeting. Complete, sign, and return this form to the students teacher (with tuition check, if applicable).

Fall 2012 Registration Deadline: September 26, 2012

Spring 2013 Registration Deadline: February 20, 2013

Contact Your High School Counselor

-or-

**SaraLynn Goergen, M.Ed.**  
*Dual Enrollment Coordinator*

(Hampton, Newport News, Denbigh Baptist, Peninsula Catholic, Hampton Christian High Schools)

.....

**Monica Knight, M.S.Ed.**  
*Dual Enrollment Coordinator*

(New Horizons Regional Education Center, Williamsburg-James City County, York, Poquoson High Schools)

525 Butler Farm Rd.  
Hampton III Suite 709  
Hampton, VA 23666

[www.tncc.edu/dualenrollment](http://www.tncc.edu/dualenrollment)





## WHAT ARE THE BENEFITS OF DUAL ENROLLMENT?

- Students have the opportunity to get a head start on college while still in high school, earning high school and college credit for successfully completed courses.
- First-hand exposure to the rigor of college-level work. Courses with a grade of "C" or higher typically transfer to most four-year colleges.
- Students will have access to all TNCC campus resources.



Scan the QR code with your smart device to directly access TNCC's Dual Enrollment Page for useful links & resources!



## In-School Dual Enrollment FAQ's

### *Who can register for dual enrollment (DE)?*

DE is restricted to high school juniors and seniors who meet college placement testing requirements and course prerequisites.

### *How do I complete the online application?*

Students must apply, test, and register using their full, legal, properly capitalized name. Any discrepancy with names makes students difficult to register.

Students must answer the following questions correctly so their applications can be processed:

#### **SECTION 1: Personal Information**

- Which college do you plan to attend?  
**Thomas Nelson Community College**
- In what type of classes will you be enrolling?  
**CREDIT**
- What campus will you attend?  
**Hampton Campus**
- What term do you plan to begin classes?  
**Fall 2012 or Spring 2013**

#### **SECTION 5: Educational Goals**

- HS Stdnt - HS & College Credit (041).

#### **SECTION 6: Domicile Questionnaire**

- Students must complete the domicile section.

### *What is the tuition for an in-school DE course?*

\$15 per credit hour. Checks/money orders (made payable to TNCC) are accepted for payment; payment may not be made in cash. Note: Some school divisions cover DE tuition for their students.

### *What if I need to withdraw from a DE Course?*

Students may talk with their high school teachers/counselors about withdrawal from a DE course. With school authorization, students may withdraw from DE courses by the following TNCC deadlines:

**Fall 2012 Semester: 12/03/12**

**Yearlong Courses: 02/25/13**

**Spring 2013 Semester: 04/22/13**

# **APPENDIX D**

## ***Heritage High School Planning Committee & Advisory Council Agreements***

**Planning/Advisory Committee**  
**Heritage High School Governor's STEM Academy**

<b>K-12 Education</b>		
Heritage High School Newport News Public Schools superintendent designee	Mr. Michael Nichols, Principal	<a href="mailto:michael.nichols@nn.k12.va.us">michael.nichols@nn.k12.va.us</a> 5800 Marshall Avenue Newport News, VA 23605 (757) 928-6100 ext. 17520
Heritage High School	Mrs. Toinette Outland, Program Administrator/STEM Academy Director	<a href="mailto:toinette.outland@nn.k12.va.us">toinette.outland@nn.k12.va.us</a> 5800 Marshall Avenue Newport News, VA 23605 (757) 928-6100 ext. 17567
Heritage High School	Dr. Eleanor Blowe, Assistant Principal of Instruction	<a href="mailto:eleanor.blowe@nn.k12.va.us">eleanor.blowe@nn.k12.va.us</a> 5800 Marshall Avenue Newport News, VA 23605 (757) 928-6100 ext. 17522
Heritage High School	Mr. Roscoe Coles, Assistant Principal of Operations	<a href="mailto:roscoe.coles@nn.k12.va.us">roscoe.coles@nn.k12.va.us</a> 5800 Marshall Avenue Newport News, VA 23605 (757) 928-6100 ext. 17521
Heritage High School	Mr. Rick Watson, Director, School Counseling	<a href="mailto:rick.watson@nn.k12.va.us">rick.watson@nn.k12.va.us</a> 5800 Marshall Avenue Newport News, VA 23605 (757) 928-6100 ext. 17532
Heritage High School	Ms. Tiffanie Smith, Career & Technical Education Lead Teacher	<a href="mailto:tiffanie.smith@nn.k12.va.us">tiffanie.smith@nn.k12.va.us</a> 5800 Marshall Avenue Newport News, VA 23605 (757) 928-6100
Heritage High School	Ms. Tysha Sanford, Science Lead Teacher	<a href="mailto:tysha.sanford@nn.k12.va.us">tysha.sanford@nn.k12.va.us</a> 5800 Marshall Avenue Newport News, VA 23605 (757) 928-6100
Heritage High School	Ms. Kristel McDowell, Math Lead Teacher	<a href="mailto:kristal.mcdowell@nn.k12.va.us">kristal.mcdowell@nn.k12.va.us</a> 5800 Marshall Avenue, Newport News, VA 23605 (757) 928-6100
NNPS Administration	Mr. Frank Labrecque, Executive Director, Technology & Transportation	<a href="mailto:frank.labrecque@nn.k12.va.us">frank.labrecque@nn.k12.va.us</a> 12511 Warwick Blvd. Newport News, VA 23606 (757) 881-5461, ext. 12125
NNPS Administration	Ms. Ann Ifekwunigwe, Supervisor, Career Pathways	<a href="mailto:ann.ifekwunigwe@nn.k12.va.us">ann.ifekwunigwe@nn.k12.va.us</a> 12465 Warwick Blvd. Newport News, VA 23606 (757) 283-7850, ext. 10526

NNPS Administration	Mr. Dewey Ray, Science Instructional Supervisor	<a href="mailto:dewey.ray@nn.k12.va.us">dewey.ray@nn.k12.va.us</a> 12465 Warwick Blvd. Newport News, VA 23606 (757) 283-7850, ext. 10117
NNPS Administration	Ms. Letha Brooks, Math Instructional Supervisor	<a href="mailto:letha.brooks@nn.k12.va.us">letha.brooks@nn.k12.va.us</a> 12465 Warwick Blvd. Newport News, VA 23606 (757) 283-7850, ext. 10261
NNPS Administration	Dr. Crystal Taylor, Career & Technical Education Instructional Supervisor	<a href="mailto:crystal.taylor@nn.k12.va.us">crystal.taylor@nn.k12.va.us</a> 12465 Warwick Blvd. Newport News, VA 23606 (757) 283-7850, ext. 10226
NNPS Administration	Mr. Patrick Finneran, Director, Corporate & Government Relations	<a href="mailto:patrick.finneran@nn.k12.va.us">patrick.finneran@nn.k12.va.us</a> 12465 Warwick Blvd. Newport News, VA 23606 (757) 283-7850, ext. 10106
<b>Higher Education</b>		
Christopher Newport University	Ms. Melissa Hedlund, Department of Mathematics	<a href="mailto:melissa.hedlund@cnu.edu">melissa.hedlund@cnu.edu</a> (757) 594-8655 1 University Place Newport News, VA 23606-2988
Thomas Nelson Community College	Mr. John Calver, Director, Advanced Manufacturing Excellence Center	<a href="mailto:calverj@tncc.edu">calverj@tncc.edu</a> (757) 865-3123 Thomas Nelson Community College 600 Butler Farm Road, Suite A Hampton, VA 23666
Norfolk State University	Dr. Aliecia R. McClain, Director, Dozoretz National Institute for Mathematics and Applied Sciences	<a href="mailto:amclain@nsu.edu">amclain@nsu.edu</a> (757)823-2511 700 Park Avenue Dozoretz Research Wing, Suite 204 Norfolk, VA 23504
Old Dominion University, Lean Institute	Alok K. Verma, Ph.D., P.E., CMfgE Ray Ferrari Professor Director, Lean Institute, Engineering Technology	<a href="mailto:averma@odu.edu">averma@odu.edu</a> (757) 683-3766 Old Dominion University Department, KH-214 Norfolk, VA 23529
<b>Business &amp; Industry</b>		
Newport News Shipbuilding	Ms. Jennifer McClain, Manager, Organizational Development & Career Pathways	<a href="mailto:Jennifer.c.mcclain@ngc.com">Jennifer.c.mcclain@ngc.com</a> (757) 688-8439 4101 Washington Avenue Newport News, VA 23607
Thomas Jefferson National Accelerator Facility (Jefferson Lab)	Ms. Janet Tyler, Science Education Manager	<a href="mailto:tyler@jlab.org">tyler@jlab.org</a> (757) 269-7164 Office of Science Education 628 Hofstadter Road, Suite 6 Newport News, VA 23606
Canon, Virginia	Ms. Rhonda Bunn, Director of Human Resources & Public	<a href="mailto:rbunn@cvi.canon.com">rbunn@cvi.canon.com</a> (757) 881-6299 12000 Canon Blvd.

	Relations	Newport News, VA 23606
Virginia Peninsula Chamber of Commerce	Mr. Mike Kuhns, President & CEO	<a href="mailto:mkuhns@vpcc.org">mkuhns@vpcc.org</a> (757) 325-8170 21 Enterprise Pkwy., Suite 100 Hampton, VA 23666
Peninsula Council for Workforce Development	Hon. Matthew James, President & CEO Mr. Shawn Avery V.P., Private/Public Strategic Partnerships	<a href="mailto:savery@pcfwd.org">savery@pcfwd.org</a> (757) 826-3327 11820 Fountain Way, Suite 301 Newport News, Virginia 23606
Newport News Education Foundation	Dr. Guy Levy, President	<a href="mailto:guylevy@cox.net">guylevy@cox.net</a> (757) 591-4502 12465 Warwick Blvd. Newport News, VA 23606
Riverside School of Health Careers	Ms. Tracee Carmean, Vice President	<a href="mailto:Tracee.carmean@rivhs.com">Tracee.carmean@rivhs.com</a> (757) 240-2213 316 Main Street Newport News, VA 23601

## Planning/Advisory Committee Agreement

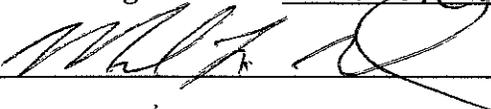
### Heritage High School Governor's STEM Academy

The Planning Committee is an integral component of the establishment and implementation of the Heritage High School Governor's STEM Academy. As a member of the Planning/Advisory Committee, I will assist in:

- Identifying the employment needs and opportunities in Hampton Roads STEM industries.
- Providing guidance in the development of curriculum and course offerings relating to STEM.
- Providing opportunities for job shadowing and internships as appropriate for students.
- Providing opportunities for site visits when possible to expose students to STEM work settings and STEM employees.
- Participating as possible in STEM activities and programs that further the goals of the STEM Academy.

**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

Name of Partner Organization: Michael Nichols, NNPS

Signature: 

Title: Principal

Date: 8-27-12

## Planning/Advisory Committee Agreement

### Heritage High School Governor's STEM Academy

The Planning Committee is an integral component of the establishment and implementation of the Heritage High School Governor's STEM Academy. As a member of the Planning/Advisory Committee, I will assist in:

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- Providing guidance in the development of curriculum and course offerings relating to STEM.
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- Participating as possible in STEM activities and programs that further the goals of the STEM Academy.

**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

Name of Partner Organization: Tourette Outland, NNPS  
Signature: J. Outland  
Title: Program Administrator/STEM Academy Director  
Date: 8/27/12

## Planning/Advisory Committee Agreement

### Heritage High School Governor's STEM Academy

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Name of Partner Organization: Dr. Eleanor Blowe, NNPS

Signature: Eleanor A. Blowe

Title: Assistant Principal of Instruction

Date: 8/27/10

## Planning/Advisory Committee Agreement

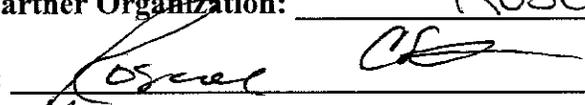
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Name of Partner Organization: Roscoe Coles, NNPS

Signature: 

Title: APD

Date: 8/27/12

## **Planning/Advisory Committee Agreement**

### **Heritage High School Governor's STEM Academy**

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**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

**Name of Partner Organization:** Heritage High School, Rick Watson

**Signature:** 

**Title:** School Counseling Director

**Date:** 9/17/12

## Planning/Advisory Committee Agreement

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**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

Name of Partner Organization: Tiffanie Smith, NNPS

Signature: Tiffanie Smith

Title: Lead Teacher - Career & Tech Ed. Dept

Date: 8/28/12

## Planning/Advisory Committee Agreement Heritage High School Governor's STEM Academy

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**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

Name of Partner Organization: Tysha Sanford, NNPS

Signature: Tysha Sanford

Title: Teacher, Science Lead

Date: August 28, 2012

## Planning/Advisory Committee Agreement

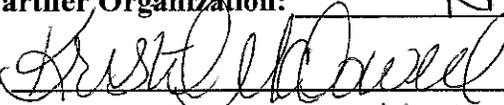
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**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

**Name of Partner Organization:** Kristel McDowell, NNPS

**Signature:** 

**Title:** Lead Teacher - Mathematics

**Date:** 8-27-12

**Planning/Advisory Committee Agreement**  
**Heritage High School Governor's STEM Academy**

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By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.

Name of Partner Organization: Newport News Public Schools

Signature: Frank Labrecque

Title: EXECUTIVE DIRECTOR Technology & TRANSPORTATION

Date: August 29, 2012

**Planning/Advisory Committee Agreement**  
**Heritage High School Governor's STEM Academy**

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Name of Partner Organization:

NEWPORT NEWS PUBLIC SCHOOLS

Signature:

(Handwritten Signature) (ANNIFEKWUNIGWE)

Title:

CAUTION ALWAYS SUPERVISOR

Date:

8-28-12

## Planning/Advisory Committee Agreement

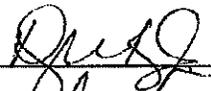
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**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

Name of Partner Organization: Dewey Ray - Secondary Science Supervisor, N.N.R.S.

Signature: 

Title: Science Supervisor

Date: 9/4/12

**Planning/Advisory Committee Agreement**  
**Heritage High School Governor's STEM Academy**

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**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

Name of Partner Organization: NWPS

Signature: [Handwritten Signature]

Title: Instructional Suprv (Sec Math)

Date: 4 Sep 12



**Planning/Advisory Committee Agreement**  
**Heritage High School Governor's STEM Academy**

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**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

Name of Partner Organization: Newport News Public Schools

Signature: Philip Finerman

Title: Director, Corporate & Government Relations

Date: Sept. 4, 2012

**Planning/Advisory Committee Agreement**  
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By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.

Name of Partner Organization: Christopher Newport University

Signature: Melissa L. [Signature]

Title: Instructor

Date: 8-27-12

**Planning/Advisory Committee Agreement**  
**Heritage High School Governor's STEM Academy**

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**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

Name of Partner Organization: TNCC

Signature: [Handwritten Signature]

Title: Director, Advanced Manufacturing

Date: August 30, 2012

**Planning/Advisory Committee Agreement**  
Heritage High School Governor's STEM Academy

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By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.

Name of Partner Organization: Norfolk State University (DNIMAS)

Signature: Alecia R. McClan

Title: Director of DNIMAS and Dept. Chair Chemistry

Date: 8/24/12

**Planning/Advisory Committee Agreement**  
**Heritage High School Governor's STEM Academy**

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Name of Partner Organization: NEWPORT NEWS SHIPBUILDING

Signature: Jennifer C. McClain

Title: MANAGER, ORG DEVELOPMENT/CAREER PATHWAYS

Date: AUGUST 28, 2012

### Planning/Advisory Committee Agreement Heritage High School Governor's STEM Academy

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Name of Partner Organization: Jefferson Lab

Signature: Janet K. Taylor

Title: Science Education Manager

Date: August 27, 2012

**Planning/Advisory Committee Agreement**  
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**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

Name of Partner Organization: Canon Virginia

Signature: [Handwritten Signature]

Title: Senior Manager

Date: 9/4/12

## Planning/Advisory Committee Agreement Heritage High School Governor's STEM Academy

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Name of Partner Organization: Virginia Peninsula Chamber of Commerce  
Signature:   
Title: PRESIDENT / CEO  
Date: 8/31/12

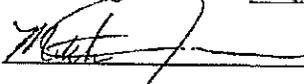
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Name of Partner Organization: Peninsula Council for Workforce Development

Signature: 

Title: President and CEO

Date: Aug 27, 2012

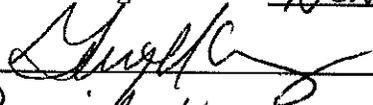
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**By signing this agreement, I agree to actively participate on Heritage High School Governor's STEM Academy Planning/Advisory Committee.**

Name of Partner Organization: NEWPORT NEWS EDUCATION FOUNDATION

Signature: 

Title: President

Date: Sept 13, 2012

**Planning/Advisory Committee Agreement**  
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Name of Partner Organization: Riverside School of Health Careers

Signature: Tracee B. Garman

Title: Vice President, Education

Date: 9/13/12

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Name of Partner Organization: Lean Institute , Old Dominion University

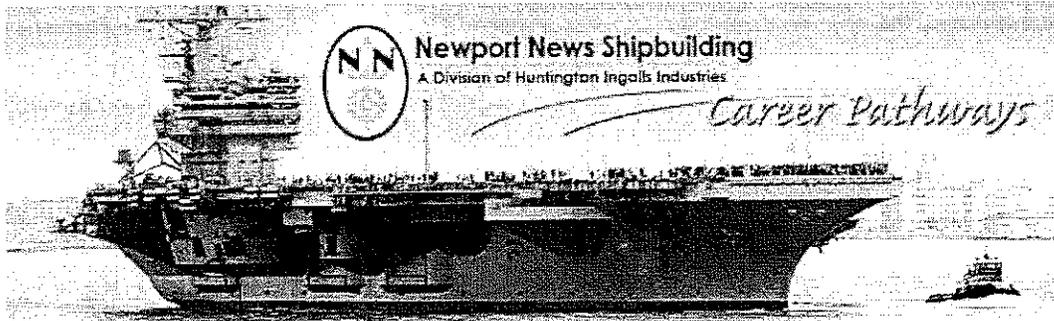
Signature: *Dr. Alok K. Verma*

Title: Dr. Alok K. Verma – Director Lean Institute

Date: 9/14/2012

# **APPENDIX E**

## ***Heritage High School Teacher STEM Professional Development Opportunities***



## Career Pathways PAID Internships at NN Shipbuilding

### FOR MIDDLE SCHOOL AND HIGH SCHOOL TEACHERS AND COUNSELORS

The objective is to expose education professionals from local middle and high schools to the shipbuilding industry. This will provide a greater understanding of the technology and complexity involved in building and refueling Nuclear Aircraft Carriers and Submarines for the US Navy. This will result in professionals effectively communicating to students, and the parents of their students, the value and reward of a career in shipbuilding. Participants will receive individual assignments, participate in team building activities, and be given a team project to work on. An Orientation will be part of the experience.

**Who?** Middle and High School Teachers, Guidance Counselors, and Other Educators Who Influence Students' Career Pathways Choices

**What?** Internship experience will include an overview of shipbuilding, the NN Shipbuilding Career Pathways program, The Apprentice School, and outreach efforts. Shipyard tours, presentations, and panel discussions involving:

- Shipfitters
- Pipefitters
- Marine Electricians
- Machinists
- Sheet Metal / Lifting & Handling
- Coatings
- Radcon & Nuclear Quality Control
- Welding

**When?** July 9<sup>th</sup> to July 20<sup>th</sup> -or- July 30<sup>th</sup> to August 10<sup>th</sup>

**Details:** *Compensation will be \$23.35 per hour, 40 hours per week*  
 Must be a U.S. Citizen and Provide Proof of Citizenship  
 Must purchase Steel Toed Shoes (Other Protective Equipment Will Be Provided)  
 Must be able to walk for extended periods of time (on tours of the shipyard)  
 Must undergo drug testing, a criminal background check and a physical

To Be Considered, Please Complete This Survey No Later Than 5pm Tuesday, June 19<sup>th</sup>  
<https://www.surveymonkey.com/s/NNShipbuildingInternship>

Questions? Contact Ann Ifekwunigwe [ann.ifekwunigwe@nn.k12.va.us](mailto:ann.ifekwunigwe@nn.k12.va.us) or (757) 283-7850 x10526



Newport News  
 Shipbuilding  
 A Division of Huntington Ingalls Industries

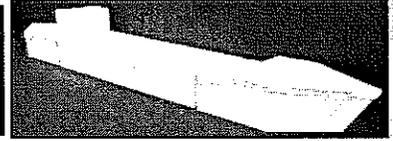
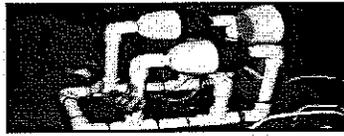




# MarineTech



STEM Preparation through Marine Engineering, Science and Technology Experiences



### Workshops (Limited Seats—Register Early):

- ◆ Two-day Workshops for STEM Teachers— Middle and High School
- ◆ Each participant to get \$500 Stipend and Two Graduate credits after successful completion.
- ◆ Workshop organized by Lean Institute, ODU to engage students in STEM Careers

**Workshop Location :** Old Dominion University, Norfolk, VA-23529  
Kaufman Hall, Room KH-105

**Workshop Date:** June 25-26, 2012 Mon-Tue



### Activities :

#### 1. Marine Kits 1-4

Project based learning related to marine science and technology. Activities are related to shipyard operations, ship construction, ship stability and ship disaster investigation. Each participating teacher receives a set of four Marine Kits for use in their classroom.

#### 2. Sea Perch Robot

Design and build an underwater submarine robot and test in water.

### For General Information about Project:

**Dr. Alok Verma**  
Director - Lean Institute  
E-mail - avma@odu.edu  
Ph. : 757-683-3766

**Baljit Kaur**  
Graduate Assistant  
E-mail - bsidh001@odu.edu  
Ph. : 757-683-4476

To Register Please Contact ►  
**Ms. Chaitali Shethna**  
Email: cshet002@odu.edu  
Phone : 757- 683-4477

### Workshop Schedule - Day 1

- 8:30 Registration and breakfast
- 9:00 Welcome, overview and pre-assessment (Dr. Verma)
- 9:15 Marine Kit 1: Shipyard Operations
- 10:45 Break (5 Minutes)
- 10:50 Marine Kit 2: Ship Construction
- 12:30 Lunch (30 Minutes) Lunch provided
- 1:00 Orientation to tools and work station set up Overview of Sea Perch manual, parts list and vendor information, Safety overview, review of kit parts and tools used
- 2:00 Break (10 Minutes)
- 2:10 Unit 1: Building the frame - Introduce buoyancy
- 3:00 Unit 2: Motors - Discuss propulsion and soldering
- 4:30 Adjourn for the day

### Workshop Schedule—Day 2

- 8:30 Registration and breakfast
- 9:00 Welcome and training overview (Dr. Verma)
- 9:10 Marine Kit 3: Ship Stability
- 10:40 Break (10 Minutes)
- 10:50 Marine Kit 4: Ship Disaster Investigation
- 12:00 Lunch (30 Minutes) Lunch provided
- 12:30 Unit 3: Control Box— Discuss Control, switches, circuits, etc.
- 2:00 Test Sea Perch in tank
- 3:30 Post Assessment and Adjourn for the day

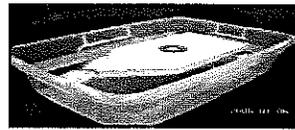




Old Dominion University, Batten College of Engineering & Technology  
**MarineTECH**



STEM Preparation through Marine Engineering, Science and Technology Experiences



**Workshops (Limited Seats—Register Early):**

- ◆ Two-day Workshops for STEM Teachers— Middle and High School
- ◆ Each participant to get \$500 Stipend and Two Graduate credits after successful completion.
- ◆ Workshop organized by Lean Institute, ODU to engage students in STEM Careers

**Workshop Location :** Old Dominion University, Norfolk, VA-23529

**Workshop Date:** August 09-10, 2012 Thu - Fri



**Activities :**

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Project based learning related to marine science and technology. Activities are related to shipyard operations, ship construction, ship stability and ship disaster investigation. Each participating teacher receives a set of four Marine Kits for use in their classroom.

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**For General Information about Project:**

**Dr. Alok Verma**  
 Director - Lean Institute  
 E-mail - avma@odu.edu  
 Ph. : 757-683-3766

**Baljit Kaur**  
 Graduate Assistant  
 E-mail - bsidh001@odu.edu  
 Ph. : 757-683-4476

To Register Please Contact ►  
**Ms. Chaitali Shethna**  
 Email: cshet002@odu.edu  
 Phone : 757- 683-4477

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# STEM CONNECTION HAMPTON ROADS

Making the Science, Technology, Engineering & Math Connection in Hampton Roads

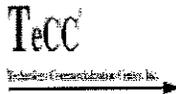


August 15, 2012  
8:15 am – 12:00 pm

Ted Constant Convocation Center

Big Blue Room  
4320 Hampton Blvd.  
Norfolk, VA 23529

Brought to You By



## STEM Connection Agenda

- 8:15 Registration, Networking & Table Viewing
- 8:45 Welcome and Opening Comments
- 8:55 Jim Batterson - Former Senior Advisor to the Commonwealth for STEM Initiatives – "Overview of K-12 STEM"
- 9:05 Cindy Jones – Chesterfield Elementary School – "Virginia Children's Engineering"
- 9:10 Jerry B. Robertson - Associate Vice President & Executive Director - Old Dominion University's Business Gateway – "Project Lead The Way"
- 9:20 Roger Crider – Technology Education Department Chair – Princess Anne High School – "Material Science Camp"
- 9:30 Andrea Harrell – Director of Youth Initiatives – Opportunity Inc. – "Pull Full STEM Ahead"
- 9:45 Pattie Cook – Executive Director – VirginiaFIRST – "FIRST's Pipeline of Programs"
- 9:55 Greg Griffett – Director - Future City Hampton Roads – "Future City"
- 10:05 Simon Nance – Manager, Learning and Development - Stihl – "STIHL Manufacturing Technology Summer Camps"
- 10:15 Michelle Storey - Education & Career Development Lead - NAS Oceana Youth Center – "Military Tech Connection"
- 10:25 Kathy Woodington – Camp Allen Elementary School – "Transitioning into STEM Using the 5 E's Model"
- 10:35 Lori Rose and Maureen Early – Thoroughgood Elementary School – "Science Buddies: Cross Grade Level Collaboration"
- 10:50 Kevin Daisey – Founder – ID Web Studios – "HRSTEM.org – A Website for Teachers"
- 10:55 Closing Remarks
- 11:00 Networking & Table Viewing
- 12:30 Event Concludes



Hosted by THR and the ODU STEMPS Department, the STEM Connection event will:

- Promote best practices and collaboration between the region's schools and cities
- Provide opportunities for continuing education to teachers and administrators
- Connect industry sponsors and professionals with students and schools via volunteering to ensure the success of STEM programs in the region

The program will include:

- Presentations on 'Home Grown' Science, Technology, Engineering & Math programs developed by Teachers in the region
- Presentations on national STEM programs (FIRST Robotics, Project Lead The Way, and Future City)
- Opportunities to network with teachers, administrators, sponsors and volunteers interested in supporting STEM initiatives in local schools
- Table displays with additional STEM speakers, professionals, and take-home information
- Discussion of developing STEM programs and integrating them with existing curriculums

## HOW TO ATTEND

Free Registration at

<http://www.technologyhamptonroads.com/en/cev/717>

The Technology Hampton Roads STEM Connection will bring together teachers, administrators, government and private sector sponsors to support Hampton Roads area teachers interested in adding and supporting Science, Technology, Engineering & Math focused modules.

**Summer Institute: Process of Thinking Out of the Box with HR-PAL**

**July 9 – 20, 2012**

**OLIN Engineering Building  
Hampton University, Hampton, VA 23668**

**Monday – July 9, 2012**

**OLIN 128**

**8:30 – 10:00:** Registration, coffee, distribution of materials, Photo Releases for everyone:  
Anne Pierce, Ph.D, Project Co-PI

**10:00 – 10:15:** Introductions: Jale Akyurtlu, Ph.D. Project principal Investigator, “Changing the way we think about problem-solving will change our teaching and ultimately improve student outcomes.”

**10:15 – 10:30:** Developing a mathematics studio based on the Oregon model. Product in three parts: What you write about your problems, the diagrams and illustration of the problems, and the plans for how to use these projects: Dr. Pierce.

Overview of the projects: Otsebele Nare, D. Eng.

**10:30 – Noon** – Algebra Initiatives in Virginia: Mr. Michael Bolling, Mathematics Coordinator, Virginia Department of Education

**Noon- 1:00 Lunch break – on your own (participants may bring their lunch)**

**1:00 – 3:00:** participants begin to work on the first project: Dr Nare, math person from HU, Dr. Sheppard, Mr. Forrester, Dr. Mun, Dr. Moye, Mr. White, Mr. Goodman, Dr. Pierce, Dr. Akyurtlu

**OLIN 404**

**Tuesday – July 10, 2012**

**All day:** Understanding By Design: Presenter: Ms. Allison Zmuda. Using their own curriculum templates, participants will develop their own action plan for each project. Strategies suggested in Wiggins and McTighe (2005) and Tomlinson and McTighe (2006) will be implemented.

**W** indicates that you are helping learners to know where the unit is headed and what is expected from them. You are also determining what their prior knowledge is. Strategies: Provide rubrics with examples from prior student work tied to different levels of the rubric.

H stands for the need to hook the learners and hold their interest. Strategies: Hooks might take the form of "provocative essential questions, counterintuitive phenomena, controversial issues, authentic problems and challenges, emotional encounters, and humor" (Tomlinson & McTighe, 2006, p. 123).

E is equipping learners to succeed, enabling them to experience key ideas and explore issues. Strategies: Provide a balance of constructivist learning experiences, structured activities, and direct instruction.

R is providing opportunities for learners to rethink and revise their work and understandings. Strategies: Rethinking and revision might be encouraged by "playing the devil's advocate, presenting new information, conducting debates, establishing peer-response groups, and requiring regular self-assessment" (Tomlinson & McTighe, 2006, p. 124).

E, again, allows students to evaluate their work and set future goals. Strategies: Provide regular opportunities for students to develop metacognitive skills of self-evaluation, self-regulation, and reflection.

T stands for tailoring to accommodate the diverse needs, interests, and abilities of learners, including those with special needs who might have individual education plans. Strategy: Provide options for assignments with levels of difficulty associated with learners' knowledge levels, interests, and abilities.

O stands for organization to sustain engagement and the learning process.

**Noon- 1:00 Lunch break – on your own (participants may bring their lunch)**

**Wednesday – July 11, 2012**

**9:00 – 10:00:** Speed dating to learn about the partners **OLIN 406**

**10:15 – Noon:** Comparison of lesson templates, Task Analysis, Definition of a rich problem: Dr Henry with Carolyn Holmes, Hampton School Division; Karin Collier, Chesapeake School Division; math teacher from Newport News School Division; and Martha Harrison, PDCCC.

Demonstration on understanding through writing about the problem: explanations improve over time; more focus; more drawings; more peer editing.

**Noon- 1:00 Lunch break – on your own (participants may bring their lunch)**

**1:00 – 3:00:** participants continue project work starting with open-ended problems: Dr Nare, math person from HU, Dr. Sheppard, Mr. Forrester, Dr. Mun, Dr. Moye, Mr. White, Mr. Goodman, Dr. Pierce, Dr. Akyurtlu **OLIN 404**

**Thursday: July 12, 2012**

**9:00 – 10:00:** Model collaborative processes in professional learning communities: MSPnet:  
Dr. Pierce

**10:00 – 10:55:** Introduction to System Analysis: Dr. Jale Akyurtlu

**11:00 – 12:00:** participants continue project work: Dr Nare, math person from HU, Dr. Sheppard, Mr. Forrester, Dr. Mun, Dr. Moye, Mr. White, Mr. Goodman Dr. Pierce, Dr. Akyurtlu  
**OLIN 404**

**Noon- 1:00 Lunch break – on your own (participants may bring their lunch)**

**1:00 – 3:00:** participants' work period – looking for alternative solutions; preparing templates for the project: Dr Nare, math person from HU, Dr. Sheppard, Mr. Forrester, Dr. Mun, Dr. Moye, Mr. White, Mr. Goodman Dr. Pierce, Dr. Akyurtlu **OLIN 404**

**Friday: July 13, 2012**

**9:00 –10:00:** Feedback using the New Mexico strategy; Draw an Engineer: Dr Pierce

Developing a mathematics studio based on the Oregon model (continued from 7/9). Product in three parts: What you write about your problems, the diagrams and illustration of the problems, and the plans for how to use these projects: Dr. Pierce.

**10:10 – 12:00:** Issues that have emerged in the teacher circles: reading, critical thinking:  
Dr. Henry

**12:00 - 1:00 Lunch break – on your own (participants may bring their lunch)**

**1:00 – 3:00:** Finish the first project, evaluation of the first week. Supervisors moderating: discuss the comments from the sessions in the week (on post-it-notes), feedback. In the *debrief*:

- *The mathematical content in the task*
- *The factors that led to the interaction among group mates including*
  - *What the teachers did prior to the task*
  - *How the HU facilitator intervened during the task*
  - *What group mates did in support of the learning of all others in the group*

- *What the teachers should do following the task*
- 

### **Monday – July 16, 2012**

**9:00 –10:00:** Coffee House Activity: Groups discussing questions at separate tables

Table cloth with 5 questions: Discussion on interactions between technology, art, and math curricula: What are the commonalities? What activities are the best reinforcers?

**10:15 –Noon:** Storyboarding for Sustainability; Dissemination: Moderators: Moye, White, Goodman. Will be done in two sections:

1. 45 minutes of general discussion: information from VA DOE, SOL's etc.
2. Divisional breakout

**Noon- 1:00 Lunch break – on your own (participants may bring their lunch)**

**1:00 – 3:00** – Participants begin work on the second project. Dr Nare, math person from HU, Dr. Sheppard, Mr. Forrester, Dr. Mun, Dr. Moye, Mr. White, Mr. Goodman, Dr. Pierce, Dr. Akyurtlu **OLIN 404**

### **Tuesday – July 17, 2012**

**9:00 – Noon:** Technology & Art Initiatives in Virginia: CTE and VAE (Pierce, Moye, White, Taylor, Goodman, Griese and Rhodes)

Speaker for Technology: Mr. Wilcox

Speaker for Art: \_\_\_\_\_

**Noon- 1:00 Lunch break – on your own (participants may bring their lunch)**

**1:00 – 3:00** – Participants work on the second project – algebra problems to be solved: Dr Nare, math person from HU, Dr. Sheppard, Mr. Forrester, Dr. Mun, Dr. Moye, Mr. White, Mr. Goodman, Dr. Pierce, Dr. Akyurtlu **OLIN 404**

### **Wednesday - July 18, 2012**

**9:00 – 10:00:** Instilling Joy about creative expression and deepening knowledge: art supervisors (Ms. Griese and Ms. Rhodes)

**10:00 – Noon:** Collaborative group activity: Design an exercise to have students to connect algebra, technology and art courses? Fostering academic community: math, technology and art supervisors. Discussion among teachers on problem development.

**Noon- 1:00 Lunch break – on your own (participants may bring their lunch)**

**1:00 – 3:00** – Participants work on the second project – alternative solutions: Dr Nare, math person from HU, Dr. Sheppard, Mr. Forrester, Dr. Mun, Dr. Moye, Mr. White, Mr. Goodman, Dr. Pierce, Dr. Akyurtlu **OLIN 404**

**Thursday – July 19, 2012**

**9:00 – Noon:** Finish second project. Activities for presentation and dissemination of the projects.

**Noon- 1:00 Lunch break – on your own (participants may bring their lunch)**

**1:00-3:00** – Activities for presentation and dissemination of the projects; discussion for the implementation plans. Practice the projects with students at the Transportation Institute or Engineering Pre-College Summer program (if it materializes)

**Friday: July 20, 2012**

**9:00 – Noon:** Presentation of the projects; comparison of the two projects; discussion on implementation and new problems. (Invite assessment people from partners)

**Noon- 1:00: Reception** (invitation to school principals, superintendents, etc.)

**1:00 – 3:00** – Evaluation of the Summer Institute; certificates, checks.

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\*Assessment at the end of each day

**APPENDIX F**  
***21<sup>st</sup> Century STEM***  
***Summer of Innovation***  
***Program***

**STEM**  
SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS  
**SUMMER OF INNOVATION**  
**ACADEMY**



TABLET PC

**STEM**  
SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS  
**SUMMER OF INNOVATION**  
**ACADEMY**

PUBLIC SCHOOLS

# Letter of Invitation

Dear Students and Parents:

Welcome to the Newport News Public Schools' 21st Century Community Learning Center Summer STEM Academy. 21st Century is thrilled to provide this exciting opportunity for our students to experience the world of STEM education (Science, Math, Technology and Engineering).

This summer, the Summer of Innovations' STEM Academy students will work hand in hand with local STEM partners like NASA, Huntington-Ingalls, Lowe's, Jefferson Labs and the Newport News Williamsburg Airport - to experience the many Career Pathways connected to STEM education. Throughout the summer, the STEM experiences will be used to enhance Mathematics and Language Arts skills in an integrated, engaging format.

According to future area job projections, STEM related employment opportunities will be plentiful in the Tidewater area. Therefore, it is imperative that we adequately expose and prepare our students for these future opportunities.

Again, I welcome you to our 21st Century STEM Academy. This summer promises to provide integrating and engaging learning opportunities for our "future" STEM professionals!

Sincerely,  
*Corey L. Gordon*  
 Corey L. Gordon  
 21st Century Program Administrator



**"Smart is not something you are. It's something you become. Use STEM as a way to become smarter."**

**Dr. Ashby Kilgore**  
 Superintendent  
 NNPS

"Newport News Shipbuilding and NASA partnered in February to provide Newport News Public Schools and other Peninsula school districts engineering career information and design challenges at Career Day held at NASA Langley Research Center. What an outstanding opportunity to encourage Peninsula students to explore STEM careers with two of Virginia's highest technical organizations."

Roger Hathaway, Education Department Head  
 NASA Langley

## STEM Academy REGISTRATION FORM

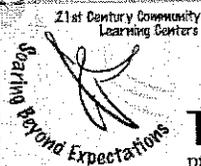


Student Last Name:		First Name:		Middle:	Gender: M <input type="checkbox"/> F <input type="checkbox"/>
Student Number (for use only): _____					
Mailing Address: Street/P.O. Box		City	State	Zip	
Mailing Address (if different from above): Street/P.O. Box		City	State	Zip	
Date of Birth:	Age:	06/07 Grade:	06/07 Teacher:	06/07 Teacher:	Primary Language:
Ethnic Origin (Check One): <input type="checkbox"/> White <input type="checkbox"/> Black <input type="checkbox"/> Asian or Pacific Islander <input type="checkbox"/> Hispanic <input type="checkbox"/> Indian, Native American <input type="checkbox"/> Other					
<b>Emergency Information</b>					
Parent/Guardian (Please list ALL numbers where you can be reached): _____					
If Parent/Guardian cannot be reached, please contact in case of accident/illness or emergency pick up:					
Name	Relationship	Phone	Relationship	Phone	Relationship
Name	Relationship	Phone	Relationship	Phone	Relationship
If the above named cannot be reached, should the family physician be called? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Physician's Name _____ Phone _____					
<b>Special Custody Information / Permission to Pick Up Child</b>					
My Child may NOT be released to the following person/people. 21st CCLC MUST have a copy of custody papers.					
Name	Relationship				
Name	Relationship				
<b>Additional Information (must be completed)</b>					
How long have you lived in Newport News? _____					
Has your child received any of the following services or needs? Please check ALL that apply:					
<input type="checkbox"/> Speech	<input type="checkbox"/> Resource Room	<input type="checkbox"/> ESE	<input type="checkbox"/> ESOL		
<input type="checkbox"/> Free/Reduced Lunch	<input type="checkbox"/> Tutoring	<input type="checkbox"/> Homework Assistance			
<input type="checkbox"/> Other Academic Intervention Service (Explain): _____					
<b>Photo Release</b>					
Your child's photo may be taken and used for inclusion in the district publications or in local newspapers or magazine articles or letters relating to school/21st CCLC activities. Please check below:					
<input type="checkbox"/> Yes, I give permission for my child's picture to be used in the above description.					
<input type="checkbox"/> NO, Please do not use my child's photo.					
<b>Field Trip/Activities Permission</b>					
I, the legal parent/guardian, hereby give my consent for the above named student to participate in trips and activities during the 21st Century Community Learning Center program. I authorize program personnel to obtain, through a physician of his/her choice, any emergency medical care that may become necessary for the student in the course of these activities. I also agree not to hold the program/school or anyone acting in its behalf responsible for any injury occurring to the above named student in the course of these activities					
Signature of Parent/Guardian _____					Date _____

# STEM

ACADEMY  
SUMMER OF INNOVATION  
SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS

## SUMMER OF INNOVATION THE CHALLENGE



To introduce a quality STEM program into the 21st Century Community Learning Center's Summer of Innovation, to be continued into the upcoming school year, magnet programs and out of school time.

### Newport News Public Schools' Response

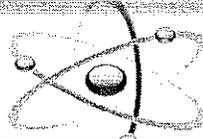
The Summer of Innovation STEM program leverages the current UbD and SOL aligned content with NASA learning modules as a powerful context for STEM student engagement. The Summer of Innovation by design will inspire 21st Century Elementary, Middle and High school students, sparking their imaginations through the magic of Science, Technology, Engineering, and Mathematics.

### The Details

The US Department of Education, NNPS and NASA recognizes that interest in STEM among elementary, middle and high school students is often a greater predictor than early academic achievement for determining future bachelor's degrees in Science and Engineering. The NNPS' Summer of Innovation focuses its efforts on elevating students' interest and improving teacher confidence and students participation in STEM by:

- ✧ Alignment of the NNPS' UbD and SOL driven information to ensure a high quality of instruction utilizing STEM modules provided by NASA
- ✧ Providing inquiry-based, experimental content that allows students to explore STEM topics while reinforcing skills taught in formal education settings
- ✧ Establishing the formal structures during traditional summer programming and afterschool time
- ✧ Collaborating with a variety of partners to successfully deliver the Summer of Innovation to NNPS students (NASA and Air & Space Museum).

# STEM SUMMER OF INNOVATION ACADEMY



JULY 2 - AUGUST 2

Crittenden Middle School



## ACADEMY SCHEDULE

Rising 3<sup>rd</sup>-10<sup>th</sup> Graders Menu Home Channels Browse Settings Rising 3<sup>rd</sup>-10<sup>th</sup> Graders

PERIOD	AVIATION STRAND	RENEWABLE/ROBOTICS STRAND
8:15-8:30 a.m.	Arrival & Breakfast	Arrival & Breakfast
8:30-8:50 a.m.	Building Community	Building Community
8:50-8:55 a.m.	Bathroom & Transition	Bathroom & Transition
	<b>CORE</b>	<b>CORE</b>
9:00-9:55 a.m.	Algebra/Geometry Academy	Renewable Resources/Robotics/ Engineering & Electronics
10:00-11:00 a.m.	Aviation Technology	Algebra/Geometry Academy
11:00-Noon		
Noon-1:00 p.m.	JOURNALISM	LUNCH
1:00-2:00 p.m.	Aviation Operations	Computer Programming/World of Technical Drawing
2:00-3:00 p.m.	Train Like an Astronaut/Sign Language	Train Like an Astronaut/Sign Language

# THEORY OF ACTION

## NNPS - SUMMER OF INNOVATION

If we do the following...

- Align STEM Mathematics to SOL
- Use Best Practices of Language Arts/Writing to enhance STEM
- Align STEM Science to SOL
- Embed Magnet Strand into Summer Program
- Introduce Computer Programming
- Introduce to Electronics/Engineering

Quality Curriculum

- NASA
- Jefferson Labs
- NNPS' Language Arts Specialist
- VDOE Training with VCE Curriculum
- Sign Language
- Instructional Technology

Community Connections

- NASA Interns
- Newport News Shipbuilding (HI)
- Denbigh Aviation Academy
- Lowes
- The Virginia Children's Engineering Council (VCEC)
- YMCA
- Jefferson Labs
- Parks & Recreation
- VA Tennis/USTA

...then we will impact the core in these ways

### Impact on Instructional Core

- Advancing Students' Achievement
- Remediating Students' Below Grade Level
- Introducing Magnet Strands

### Impact on Instructional Core

- Exposure to NASA modules
- Broaden content delivery to students and provide different instructional strategies to enhance instructional delivery
- Connecting STEM to SOLs
- Vertical Content Instruction
- Provide a Modality to enhance technical vocabulary and increase reading levels
- Infusing more technology with instruction

### Impact on Instructional Core

- Provide real life work expertise
- Career Pathways & Partnered Teaching
- Field Trips
- Resources/Materials Experiential Learning
- Enhancing LEA's partnerships
- Train like an Astronaut/Fitness

...and we will reach our student achievement goals!

- Introduction into NNPS' Magnet
- Enhance Math Skills
- Enhance Science Knowledge
- Improve Writing
- Improvement in DRAS' (3-5)
- Improvement in connection between STEM and Language Arts Level



**APPENDIX G**  
***Newport News***  
***Shipbuilding Career***  
***Pathways Internship***  
***Packet***

# HERITAGE HIGH SCHOOL GOVERNOR'S STEM ACADEMY INTERNSHIP AGREEMENT TO PARTICIPATE FORM

## Warning and Assumption of Risk For Participation in Student Internship Program

I am aware and understand that there may be dangers and risks that may result in injury from participating in the Student Internship Program.

Because of the possible risks of participating in the above program, I recognize the importance of following the schools' and career sponsors' instructions regarding program techniques, training and other rules, etc., and agree to obey such instructions.

I, \_\_\_\_\_, have read the above warning and  
*(Name of Participant – please print)*

understand its terms. In consideration of this understanding, I hereby consent to participate and to engage in all activities related to the program. I understand that the above program may involve risks of injury. I understand that I must be covered by medical, accident and automobile insurance for the duration of the internship. This also certifies that the Student Intern, Parent or Guardian is responsible for transportation to and from the internship site.

By signing this form, I agree to release the school and career sponsor from liability for the student intern while at their internship site.

I have read and kept a copy of the **Agreement to Participate** and **Emergency/Insurance Verification Forms** as well as the accompanying letter from the Principal. Therefore, I understand the potential risks of injury and the responsibilities of participating in the Student Internship Program.

I also give permission to receive medical treatment, first aid, emergency medical care and all other medical or surgical care deemed reasonably necessary to my health and well-being in case of injury during my participation in the above-reference program activities and understand that I, or my insurance, will be responsible for any medical bills.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Parent or Legal Guardian if Participant is a Minor



\_\_\_\_\_  
Student Intern (please print)

\_\_\_\_\_  
Intern Placement (please print)

## Heritage High School Governor's STEM Academy Internship Agreement

The ***Student Intern***, considering the internship experience as contributing to his/her career objectives, agrees:

1. To attend school and the internship site on a regular basis and to notify the teacher of all absences from school and the internship site as soon as possible. Without permission of the teacher, students may not go to the internship site without going to school. Failure to adhere to this part of the agreement will result in failure of the internship experience.
2. To perform internship responsibilities and classroom assignments and to adhere to the rules and regulations of the internship site and school.
3. To consult the teacher about any changes or difficulties arising at the internship site or related to the internship experience.
4. To represent the school and career sponsor by showing honesty, punctuality, courtesy, a cooperative attitude, proper health and grooming habits, appropriate dress and a willingness to learn.
5. To be responsible for his/her transportation to and from the internship site.

\_\_\_\_\_  
Student Intern Signature

\_\_\_\_\_  
Date

The ***Career Sponsor***, recognizing that a meaningful experience will contribute to the attainment of the student intern's career objective, agrees:

1. To provide a variety of experiences for the student intern.
2. To provide a minimum of 15 hours at the internship site.
3. To assist in the evaluation of the student intern.
4. To provide time for consultation with the teacher concerning the student intern regarding progress and/or difficulties.
5. To provide available instructional material and occupational guidance for the student intern.

\_\_\_\_\_  
Career Sponsor Signature

\_\_\_\_\_  
Date

The ***Parent of the Student Intern***, realizing the importance of the internship experience and the student attaining his/her career objective, agrees:

1. To encourage the student intern to carry out his/her duties and responsibilities.
2. To understand that the student intern must attend school on a regular basis. Students may not report to the internship site without attending school.
3. To accept responsibility for the safety and conduct of the student intern while he/she is traveling to and from the school, internship site, and his/her home.
4. To share the responsibility for the conduct of the student intern while in the program.
5. To make inquiries concerning the student intern through the teacher rather than directly to the career sponsor.

\_\_\_\_\_  
Parent or Guardian Signature

\_\_\_\_\_  
Date

The ***Teacher***, representing the school, will coordinate a positive internship experience for the student and his/her occupational career objective and agrees:

1. To make periodic visits to the internship site to observe the student intern, to consult with the career sponsor, and to render any needed assistance with problems of the student intern.
2. To assist in the evaluation of the student intern during their experience.
3. To provide in-school instruction related to the student intern's placement and career objective.
4. To work and cooperate with the career sponsor in developing appropriate activities related to the student intern's career objective and internship placement.
5. To inform the career sponsor of his/her responsibilities concerning the internship experience.

\_\_\_\_\_  
Teacher Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Magnet Program Director Signature

\_\_\_\_\_  
Date

# HERITAGE HIGH SCHOOL GOVERNOR'S STEM ACADEMY INTERNSHIP SUMMATIVE EVALUATION

## Heritage High School

INTERN \_\_\_\_\_ DATE \_\_\_\_\_

CAREER SPONSOR \_\_\_\_\_

INTERNSHIP LOCATION \_\_\_\_\_

### PART 1: WORK HABITS PROFILE

1. Promptness – arrives on time to internship and completes assignments in a timely manner.
2. Appearance – appropriate dress and grooming.
3. Dependability – in meeting commitments.
4. Discretion – respecting confidentiality of situations.
5. Sensitivity – relating well to a variety of people.
6. Flexibility – reacting well to new and unanticipated situations.
7. Independence – ability to work without constant supervision.
8. Accuracy – ability to follow directions, attentive to details, able to obtain information and convey it accurately.
9. Maturity – seriousness in approach to internship.
10. Attitude – a positive outlook on the assignment; willingness to undertake tasks.

**LOW                      AVERAGE                      HIGH**

1                      2                      3                      4                      5

1                      2                      3                      4                      5

1                      2                      3                      4                      5

1                      2                      3                      4                      5

1                      2                      3                      4                      5

1                      2                      3                      4                      5

1                      2                      3                      4                      5

1                      2                      3                      4                      5

1                      2                      3                      4                      5

1                      2                      3                      4                      5

**PART 2: PLEASE ANSWER THE STATEMENTS ON THIS PAGE AS COMPLETELY AS POSSIBLE**

1. This student's strengths in the work relationship in this internship were:

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2. Areas of work performance still in need of improvement (weaknesses) at the end of the internship were:

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3. Additional comments you would like to make:

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*Career Sponsor Signature*

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*Date*

Thank you for your time and energy spent completing this summative evaluation for your student intern and providing specific feedback for their growth. Your role in this student's internship is greatly appreciated.



## **Heritage High School Governor's STEM Academy INTERNSHIP JOURNAL REQUIREMENTS**

Each student involved in the Heritage High School Governor's STEM Academy is required to keep a **JOURNAL** of the internship experience.

The **JOURNAL** is to be a comprehensive documentation of the internship experience. A **JOURNAL** entry is required for each day a student attends their internship.

A **JOURNAL** entry should include but not be limited to the following:

- Description of activities observed;
- Perception of the day's activities, including thoughts, feelings, and impressions;
- New knowledge obtained about the career during this day;
- Discouraging information obtained this day on the internship;
- General comments/reflections

Your **JOURNAL** will be collected with your **INTERNSHIP LOG OF HOURS** and your **INTERNSHIP SUMMATIVE EVALUATION** from your career sponsor. An evaluation of these items will be reflected in your internship grade.

# **Job Shadowing**

## **Sample Workplace Student Orientation Agenda**

*Participants, during your job shadowing experience, use the following outline as a guide of what to expect and what questions to ask. This is only a guide and does not have to be followed as outlined below.*

### I. Introductions

- a. Clarify job shadowing and ask what you should expect during your experience?

### II. Goals & purpose of job shadowing

- a. You will observe what really happens in the "world of work"
- b. You will see how what you learn in school is used on the job
- c. You will learn what skills are needed for a job
- d. You will meet interesting people in our community

### III. Guided tour of the program

- A. Before your visit to the site
  - a. Game plan and timeline
  - b. Roles and responsibilities
  - c. Program orientation
  - d. Student survey
  - e. Consent form
  - f. Birth Certificate
  - g. Closed toed shoes/sneakers (no sandals or high heels)
  - h. NNS Orientation
  - i. Tips for succeeding in the workplace
- B. During the job shadowing day
  - a. Game plan and timeline
  - b. Roles and responsibilities
  - c. Student questionnaire
  - d. Reflection activities
  - e. Program evaluations
- C. After returning from the site
  - a. Student reflection form
  - b. Thank you letters

#### IV. Things to remember while you're at the site

- A. The importance of professional behavior
  - a. How to dress
  - b. Expectations while at workplace
  - c. Workplace policies and procedures
- B. How to learn the most you can
  - a. Make careful observations
  - b. Listen
  - c. Ask questions!
- C. Courtesy to others

#### V. Wrap-up: Question & answer period

#### VI. Tips for Succeeding in the Workplace

*There are two general categories of factors which contribute to an employee's success at a business. First, employees must master a set of specific technical skills and expertise such as computer programming or drafting skills. Second, all occupations require general skills such as problem-solving, communications, interpersonal abilities and computer literacy. During the job shadowing, you will be introduced to employees using both technical and general skills. When you are at the workplace, think about these tips and what it takes--in addition to technical and general workplace readiness skills--to be a top employee.*

1. Be honest.
2. Have a positive attitude. Be friendly, courteous, polite, and cooperative with co-workers and clients.
3. Always be reliable and prompt. Customers and other workers are depending on you.
4. Notify the appropriate supervisor when you are going to be late or absent.
5. If you do not understand something, ask questions or ask for help. It is better to admit you are learning than to make a costly mistake.
6. Respond positively to constructive criticism.
7. Take responsibility for your actions.
8. Give your best effort at all times. If you have completed all of your regular and assigned task, show initiative and seek additional work.
9. Challenge yourself to be a continuous, life-long learner.
10. Always be open to change.

# Job Shadowing Student Questionnaire

*To help you get the most out of your visit, we have provided this questionnaire for your experience. Answer these questions as you "shadow" your "Workplace Mentor." Many of your responses to questions will come indirectly from your observations and interactions. If any questions are unclear, discuss them directly with your workplace mentor or your teacher.*

Student's Name: \_\_\_\_\_

Workplace Mentor Name: \_\_\_\_\_

Department & Job site: \_\_\_\_\_

- 1. What does this department do within the business?**
- 2. What does your "Workplace Mentor" do each day?**
- 3. What basic skills and knowledge does your "Workplace Mentor" need, and how does she or he use them?**

Literacy, reading	Numeracy, math	Writing
Speaking & Listening	Technology	Problem solving
Seeing the "big picture"	Strong work ethic	Positive attitude
Independence	Strong presentation	Attendance
Teamwork		

- 4. What technical skills are necessary to perform this job well, and how are they used? (Examples of this may include using computers, operating office machines such as phones, fax machines, copiers and repairing equipment.)**

**5. Which of the following problem-solving skills are needed and how are they applied?**

Organizing and planning                      Interpreting and communicating information

Thinking creatively                              Making decisions

Analyzing problems

Other skills needed that are not listed:

**6. What interpersonal (or "people") skills are needed and how are they used?**

Serving customers                              Participating as a team member

Teaching    Leading

Resolving conflict                              Working with cultural diversity

Other skills needed that are not listed:

**7. Which of the following self-management skills are needed and how are they applied?**

Setting short and long term goals                      Using constructive criticism

Using time in an efficient and effective way                      Demonstrating refusal skills

Evaluating ones own actions and accomplishments

Other skills needed that are not listed:

**8. Describe two pieces of equipment and how they are used by your "Workplace Mentor."**

**9. What are common injuries that have or might occur for employees?**

a. What type of injury prevention program is used with employees?

b. What protective devices might be used or required for use by employees?

c. What materials used at the workplace might be considered hazardous and require special care in use?

**10. What education and training did your "Workplace Mentor" have before starting work at the company and what new skills has she or he had to learn since then?**

**11. How might this job change in the next five years? The next 10 years?**

**APPENDIX H**  
***Spring Break***  
***“Make It Work”***  
***Internship***



AMERICAN SCHOOL BOARD JOURNAL - THE SOURCE FOR SCHOOL LEADERS



Glenn Cook, NSBA  
[gcook@nsba.org](mailto:gcook@nsba.org)  
(703) 838-6234

Gregory Yost, Sodexo  
[gregory.yost@sodexo.com](mailto:gregory.yost@sodexo.com)  
(301) 987-4214

FOR IMMEDIATE RELEASE

## **Newport News Public Schools Earn Two First Place Honors in 2012 Magna Awards**

### ***American School Board Journal Also Announces Grand Prize Winners***

Alexandria, Va. (April 11, 2012) – Newport News (Va.) Public Schools is the only district in the nation that has been recognized with two first place awards in the *American School Board Journal's* (ASBJ) 18<sup>th</sup> annual Magna Awards program.

Newport News Public Schools are being honored in the over 20,000 enrollment category. The district established a Dropout Prevention and Recovery Program that turned school and central office staff into a team that created an array of services to help students graduate on time. The program has high school graduation coaches who identify, assist, and encourage students at risk of not graduating. It also has an evening high school program and two dropout recovery centers for adults. Since the program's inception in 2008, the high school completion rate rose from 78.7 percent to 87 percent and the dropout rate was cut by more than half, from 14.3 percent to 6.9 percent in 2011.

Newport News Public Schools also were honored for their "Spring Break: Make it Work!" program, which matches high school students with local businesses and organizations that offer paid or unpaid work to students during spring vacation. About 50 students participated in the program, gaining valuable workplace experience during a time when they needed adult supervision. The program also showed employers that district students are capable of doing high-level work. Because of the program's success, more employers are offering internships.

The Magna Awards recognize districts across the country for outstanding programs that advance student learning and encourage community involvement in schools. This year's three grand prize, 15 first place, and 15 honorable mention winners were selected from three enrollment categories: less than 5,000 students, 5,000 to 20,000 students, and over 20,000 students. This year's grand prize winners were the Maplewood Richmond Heights School District in Maplewood, Mo., the Monroe-Woodbury Central School District in Central Valley, N.Y., and the Pittsburgh Public Schools in Pennsylvania.

The Magna Awards are supported by Sodexo School Services. Each of the grand prize-winning school districts will receive \$4,000 in scholarship money during a special presentation at the National School Boards Association's (NSBA) Annual Conference, to be held April 21-23 in Boston.

“The Magna Awards exemplifies strong school board leadership, creativity, and commitment to student achievement in public education,” said Anne L. Bryant, *ASBJ*'s Publisher and Executive Director of NSBA. “This year’s Magna Awards recipients truly showcase the best practices and innovative school programs that are advancing student success.”

“Sodexo is proud to create learning-friendly environments that allow our partner districts to focus on doing what they do best—educating our children,” said Steve Dunmore, President of Sodexo Education-Schools. “We are honored to sponsor the Magna Awards and want to celebrate all school boards and communities that share in the commitment to further student well-being and achievement.”

*ASBJ* initiated the Magna Awards in 1995 to recognize school boards for taking bold and innovative steps to improve their educational programs. An independent panel of school board members, administrators, and other educators selected the winners from 300 submissions. This year’s nominations came from 44 states.

The 2012 winners are highlighted in a special supplement to the May issue of *ASBJ*, and will be formally recognized on Saturday, April 21, at the Best Practices for School Leaders Luncheon, which is part of NSBA’s 72<sup>nd</sup> Annual Conference.

In addition to the *ASBJ* supplement, the district's winning entry will be posted on the Magna Awards website and added to the program's searchable best practices database. Both can be found at [www.asbj.com/magna](http://www.asbj.com/magna).

###

### ***American School Board Journal***

*American School Board Journal* ([www.asbj.com](http://www.asbj.com)), published monthly by the National School Boards Association, serves more than 40,000 school board members and top-level administrators from districts across the nation. The K-12 education magazine, published continuously since 1891, has won 17 national honors for education reporting and design since 2006.

### **Sodexo in North America**

Sodexo, Inc. ([www.sodexoUSA.com](http://www.sodexoUSA.com)), leading Quality of Daily Life Solutions company in the U.S., Canada, and Mexico, delivers On-site Service Solutions in Corporate, Education, Health Care, Government, and Remote Site segments, and Motivation Solutions such as Esteem Pass. Sodexo, Inc., headquartered in Gaithersburg, Md., funds all administrative costs for the Sodexo Foundation ([www.SodexoFoundation.org](http://www.SodexoFoundation.org)), an independent charitable organization that, since its founding in 1999, has made more than \$17 million in grants to end childhood hunger in America. Visit the corporate blog at [www.sodexoUSA.com/blog](http://www.sodexoUSA.com/blog).

As research indicates, diet and nutrition as well as classroom and school conditions have an impact on student performance. Sodexo is committed to student well-being in support of achievement and has initiated a variety of programs around nutrition, achievement, environment, community and activities. Sodexo creates learning-friendly environments through our student nutrition and facilities management programs at nearly 500 school districts across the country and the company serves more than 2 million healthy and delicious school meals each day. Sodexo has been a proud sponsor of the Magna Awards since 1995.

# Newport News students 'Make it Work' during spring break

Recommend

## Related Articles

### TNCC holds job fair

Apr 10, 2012

### Local News Briefs

Apr 10, 2012

### Program Trying To Build A Future

Apr 09, 2012

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Tncc

Spring Break

April 08, 2012 | By Samieh Shalash, [sshalash@dailypress.com](mailto:sshalash@dailypress.com) | 757-247-453

Dozens of Newport News students spent part of their spring break job shadowing, interning or volunteering at local businesses or organizations as part of the school district's "Spring Break: Make it Work" program.

They worked part or all of the April 2-6 break at places including local Boys and Girls Clubs branches, Riverside Regional Medical Center and Ferguson Enterprises.

The program is part of the district's Career Pathways initiative, which encourages students to identify which skills they're strong in and introduces them to career possibilities.

Newport News Shipbuilding hosted dozens of students from Heritage High School as part of the program April 3-5, according to a news release.

They met with members of its leadership team and saw how engineering and information technology is used at the shipyard, according to the release.

The district's Spring Break program was lauded by John Shifflett, the shipyard's director of leadership, technical and professional development.

"It is inspiring to see so much enthusiasm and initiative among our young people in Newport News," he said in a statement.

"These programs do a great job of helping students connect the dots between what they are learning in the classroom and how it will apply in the workplace.

### Aquatics research

Hampton University is hosting a conference Wednesday to help curb drowning rates among minorities and to train more minorities in the field.

The Conference for Aquatic Research in Diversity begins at 9:30 a.m. in the McGrew Towers Conference Center on campus. It is free and open to the public. Lunch will be provided.

The keynote speaker is Shaun Anderson, a USA Swimming Consultant on minority swimming initiatives and faculty member at Norfolk State University.

According to the Centers for Disease Control and Prevention, black children are three times more likely to drown than white children.

The conference will address that issue and discuss solutions, according to a release. HU is interested in beginning partnerships with localities, YMCAs and local schools, it says.

To register for the conference, visit <http://events.hamptonu.edu/card>.

### TNCC job fair

Print out your resume and head to Thomas Nelson Community College this week if you're job hunting and want expert help with the process.

TNCC's spring job fair 10 a.m. to 2 p.m. Thursday at its Peninsula Workforce Development Center at 600 Butler Farm Road in Hampton. The fair is free and open to the public.

Companies will conduct interviews and hire during the event, according to TNCC. Last year, more than 30 companies attended including Canon, Enterprise Rental Car, Frito-Lay, Hampton Roads Transit and Meineke.

Jobseekers are encouraged to attend early, dress professionally and to bring several copies of their resume.

Also at the job fair, TNCC Workforce Development staff will offer seminars on writing resumes, sharpening interviewing skills, finding federal jobs and starting a business.

For more information, visit <http://www.tncc.edu> and click at Workforce Development.

Shalash can be reached at [sshalash@dailypress.com](mailto:sshalash@dailypress.com) or 757-247-4537. Read her education blog at [dailypress.com/hallpass](http://dailypress.com/hallpass).

NEWPORT NEWS



PUBLIC SCHOOLS



Huntington  
Ingalls  
Industries

## Calling All Engineering Students!



*Students from last year's Spring Break: Make it Work!*

## *Spring Break: Make it Work!*

Spend 3 Days

# Job Shadowing

*in the*

**Mechanical, Structural, and Nuclear  
Engineering Departments at NN Shipbuilding!**

**April 3 to April 5, 2012; 9am to 2pm**

**Register Now: <https://safe.nn.k12.va.us:8444/cpi/>**



For More Information, Call Ann Ifekwunigwe, NNPS Career Pathways Supervisor

(757) 283-7850 x10526 or [ann.ifekwunigwe@nn.k12.va.us](mailto:ann.ifekwunigwe@nn.k12.va.us)

# 2012 NNPS SPRING BREAK: Make it Work!

## How Business Mentors Can Help Students Maximize their Spring Break Work Experiences

1. Inform student intern of arrival time, ending time, check-in, and check-out procedures.
2. Let your colleagues know the student will be coming to work. Arrange for someone to greet the student upon his/her arrival.
3. Give the student intern a tour of the facility, and introduce the student to all employees with whom he/she will have contact.
4. Explain the student's first work assignment and evaluation expectations. *(If applicable)*
5. Inform co-workers of their relationship to student intern, and solicit their cooperation.
6. Inform student intern of lunchtime, relief procedures and regulations, as may be applicable to his/her work.
7. Inform student intern of facilities such as rest room, lunchroom, telephone, coat rack, etc.
8. Inform student intern of time-recording procedure.
9. Inform student intern about any information that is to be kept confidential.
10. Inform student intern of appropriate work attire.

## How Students Can Maximize their Spring Break Work Experiences

1. Make sure you know what time you are expected to arrive and depart, and what the check-in and check-out procedures are.
2. Introduce yourself with a firm handshake and an audible voice.
3. Pay attention during the tour. Don't be embarrassed to take notes about key locations or colleagues with whom you'll be working.
4. Don't be afraid to ask questions! Make sure you understand work assignment and how you will be evaluated. *(If applicable)*
5. Make sure you understand when you are expected to take breaks, and what relief procedures and regulations are.
6. Locate the important facilities such as the rest room, lunchroom, telephone, coat rack, etc.
7. Make sure you understand the time-recording procedure. You need to keep track of your hours for service credit.
8. Make sure you maintain the confidentiality of any information you have been told must be kept private.
9. Make sure you are aware of the company's dress code. Wear appropriate work attire to the experience.
10. Use your Career Readiness Skills... and please remember that you are representing Newport News Public Schools.

*Smart, Safe Schools*



NEWPORT NEWS  
PUBLIC SCHOOLS

PUBLIC SCHOOLS

*College, Career, and Citizen-Ready*

**APPENDIX I**  
***Peninsula Council for***  
***Workforce***  
***Development***  
***Summer Camp Series***

# Summer Camp Series 2012



[www.pcfwd.org/YCC\\_summer\\_camp.asp](http://www.pcfwd.org/YCC_summer_camp.asp)

## Gaming Technology and Modeling and Simulation Camp

4-Day Program held on Mondays and Wednesdays / July 9<sup>th</sup>, 11<sup>th</sup>, 16<sup>th</sup> & 18<sup>th</sup> 1:30 – 4:30 pm

Open to rising 9<sup>th</sup> – 12<sup>th</sup> Grade

Registration Fee - \$50.00 / non-refundable

The Gaming Technology & Modeling and Simulation Camp will provide 20 students with an interactive experience in Gaming. The Camp will provide hands-on activities at ECPI University, to include game development and introduction to the virtual environments of modeling and simulation.

*Location: ECPI University - Newport News Campus*

## Peninsula K-next / Advanced Manufacturing Technology Camp

July 11<sup>th</sup> – 14<sup>th</sup> Wednesday – Friday 8:00 am – 4:00 pm / Saturday 8:30 am – 1:30 pm

Open to Rising 9<sup>th</sup> and 10<sup>th</sup> Graders

**Registration: To register call Thomas Nelson Community College at 865-3122**

The goal of this engaging and innovative program is to expose area high school students to the wonders of advanced manufacturing and encourage them to pursue both higher education and careers in the field. 24 high school students are expected to attend. The camp will feature a variety of innovative and hands-on classes on topics such as Computer Machining, Welding and Robotics.

*Location: Peninsula Workforce Development Center in Hampton*

## E.C.H.O. – Exploring Careers & Healthcare Opportunities

July 24<sup>th</sup> – 26<sup>th</sup>

8:30 am – 1:00 pm

Open to rising 9<sup>th</sup> – 12<sup>th</sup> Grade

Registration Fee - \$50.00 / non-refundable

A 3-day camp for 20 high schools students interested in exploring healthcare careers. Students will tour hospitals and medical facilities and learn about various healthcare careers by participating in hands-on activities, learning about different types of medical equipment and observing staff members performing their jobs. Students will also learn about educational requirements for various healthcare careers.

*Location: Camp will begin each morning at the Youth Career Café - Historic Triangle located on the Historic Triangle Campus of Thomas Nelson Community College in James City County*

## Career Exploration Camp

August 7<sup>th</sup> - 9<sup>th</sup>

8:30 am – 1:00 pm

Open to rising 6<sup>th</sup> – 9<sup>th</sup> Grade

Registration Fee - \$50.00 / non-refundable

A 3-day camp for 14 middle and rising high school students interested in exploring careers on the Peninsula. Students will learn about careers in financial services, hospitality, transportation and distribution, construction, healthcare and more through tours and interactive activities. Students will also learn about educational requirements for the various careers.

*Location of the Camp: Camp will begin each morning at the Youth Career Café – Patrick Henry Mall*

**CAMPS SUBJECT TO CHANGE / SPACE IS LIMITED.**

**Pre-Registration Required. Call Rita Bond at 757-826-3327 for information.**

**APPENDIX J**  
**Youth Career Café**  
**Program**

**Additional Services:**

- Tutoring
- Field Trip Planning
- Free use of Computers and Printers
- Group Activities
- College/University Fairs
- Job Fairs
- The YCC space can be used for Group Meetings, Plays, Ceremonies, and much more.....
- Movie Nights with Free Popcorn and Drinks



**FAFSA**  
FREE APPLICATION FOR FEDERAL STUDENT AID

\*\*\*Please Read\*\*\*

- All YCC Activities Require Free Registration by Calling (757) 249-2104 During Business Hours: Mon-Fri 10am-7pm & Sat 12pm-4:30pm At Least 24hrs Prior to the Day of the Event.
- Age Requirements vary for Each Activity. Parental Consent is Needed for Individuals Under 14yrs of Age.
- The YCC reserves the right to change, cancel, or reschedule all activities listed, due to inclement weather, lack of participation, or any unforeseen circumstances.
- YCC Staff is not Responsible for Lost or Stolen Items, illegal behavior of others, or any on-site injuries.

*Please order Ala Carte'*

*We Look Forward to Working With You This School Year!!*



**PENINSULA COUNCIL**  
For the Greater Good



**Youth Career Cafe  
 Menu of Activities**



**Patrick Henry Mall Location**  
 12300 Jefferson Ave  
 Newport News, VA 23606  
 Youthcareercafe@pcfwd.org  
 (757) 249-2104

**Newport News Public  
 Schools Representative:**  
**Bisharah "Bj" Musawir**  
 bisharah.musawir@nn.k12.va.us



## College/University Menu

- *Post High School Plans*

Describes several options to include trade school and employment for students once they have graduated from high school.

- *Study, Note, and Test Taking Techniques Workshop*

Students will explore methods of studying, taking notes, and test taking ideas to improve grades.

- *Writing a Winning Essay*

Teaches students how to properly express their desires for attending the college of their choice.

- *College/University Information College/Univ. On-Site Visits College/Univ. Field Trips Guest Speakers from Colleges and Universities*

- *Financial Aid Workshops*  
Students/Parents can Apply for their PIN and complete FASFA forms online.

- *Scholarship Blitzes*

Students can come by the YCC to collect scholarship applications along with a College/University On-Site.

- *"Off-to-College" Workshop*

Students will learn what to expect their Freshman Year and how to maintain a high Grade Point Average, be safe on campus, and deal with diversity.



## Career Menu

- *Resume Writing Workshop*

Keep up with the latest concepts on writing a winning resume.

- *Dressing for Success*

Students will learn what is appropriate and expected from Employers and Professionals in the work world

- *Interviewing Skills*

Students will learn how to answer tough questions asked throughout an interview along with learning the appropriate body language, speaking tones, and mannerisms.

- *Guest Speaker Bureaus*

Request a guest speaker from the various Career Pathways and allow students to gain knowledge in a Career Cluster of interest.

- *On the Job Behavior*

Students will learn how to handle issues with management, co-workers, and customers on the job.

- *Practice ASVAB*

Take and receive scores instantly by taking a practice ASVAB. Students may also meet and greet with U.S. Armed Services Recruiters.



## Citizen Ready Menu

- *Volunteer Workshops*

Organizations On-Site offering youth the opportunity to volunteer. Students will also learn why volunteering is so important.

- *Financial Planning Workshops*  
Students will learn what it means to budget, how to stay out of debt, and the process of opening a checking/savings account.

- *Youth Leadership Development*  
Students will learn how to speak in public, settle conflicts peacefully and gain life experience by being a positive role model.

- *Recipe to Success Workshops*

Students will create their own recipe to become successful in life. Items may include volunteerism, study groups, and positive attitudes E.g. visible tattoos may block great opportunities and employment.

- *"What's Legal??"*

Students can learn from the NNPD how to avoid criminal activity They will also learn how important a acceptable background will be in their future.

- *Etiquette Workshops*

Students will learn proper ways to dine in public as well as appropriate topics of conversation and the benefits of acquiring these skills.



**APPENDIX K**  
***Heritage High School***  
***Governor's STEM***  
***Academy***  
***Student Application***

**Heritage High School**  
**Governor's STEM Academy Student Application**  
**2013-2014**

In October 2012, Heritage High School was awarded special distinction as a Governor's STEM Academy—one of only eighteen STEM Academies in Virginia. The Heritage High School Governor's STEM Academy offers a program of study designed to expand options for students to advance in Science, Technology, Engineering, and Mathematics (STEM). The program combines academic coursework, research experience, with a challenging and focused school environment to prepare students for 21st century careers. Students will gain the knowledge and skills they need to succeed in technologically-rich workplaces by learning how to work in teams, communicate effectively, and apply the principles of mathematics, science, and technology. Students may choose specific STEM related career pathways and select courses in:

- Engineering and Electronics
- Architectural/Engineering Design
- Computer Systems Technology (Networking) and
- Modeling and Simulation (Computer Science)

Students who are selected for the Academy will be required to meet the following criteria to complete the program successfully:

- Maintain a minimum of 3.0 grade point average
- Take a mathematics, science, and technology course each year
- Complete an advanced mathematics course beyond Algebra II
- Complete Senior STEMinar course (public speaking/college and career preparation course to include final academy portfolio submission)
- Complete a STEM related internship (minimum of 15 hours)
- Complete courses within a specific pathway in the STEM, Information Technology, or Architecture and Construction career clusters
- Earn an industry certification, or at least nine transferrable college credits
- Complete school/community service
- Adhere to the student code of conduct and attendance policies

**HOW TO APPLY:**

Candidates may submit applications online at <http://heritage.nn.k12.va.us/>

1. Complete online application Part I-Student Information Sheet
2. Complete online application Part II-Student STEM Essay
3. Submit a copy of transcripts/final grade or interim report

*For more information contact:*

*Mrs. Toinette Outland*

*Heritage High School Governor's STEM Academy Director*

*5800 Marshall Avenue*

*Newport News, VA 23605*

*[toinette.outland@nn.k12.va.us](mailto:toinette.outland@nn.k12.va.us)*

*(757) 928-6100 ext. 17567*



**STUDENT INFORMATION**

<b>Last Name:</b>	<b>First Name:</b>	<b>Middle Name:</b>	<b>Student ID#:</b>	<b>Date of Birth:</b>
<b>Street Address:</b>	<b>City:</b>	<b>State:</b>	<b>Zip Code:</b>	<b>Zip Code + 4</b>
<b>Parent/Guardian's Last Name:</b>	<b>Parent/Guardian's Contact Phone:</b>	<b>Parent/Guardian's Alternate Phone:</b>	<b>Parent/Guardian's Email Address:</b>	
<b>Current School (2012-2013):</b>	<b>Next Grade Level: (2013-2014):</b>	<b>Next Zoned School (2013-2014):</b>		

**Governor's STEM Academy Program Options**  
 (You may select one 1<sup>st</sup> choice and one 2<sup>nd</sup> choice)  
 Place an 'X' next to your 1<sup>st</sup> and 2<sup>nd</sup> choice in the appropriate columns below

1 <sup>st</sup> choice	2 <sup>nd</sup> choice
	<b>ACADEMY PROGRAM FOCUS</b>
	Engineering and Electronics
	Architectural/Engineering Design
	Computer Systems Technology (Networking)
	Modeling and Simulation

Student's Signature \_\_\_\_\_

Parent/Guardian's Signature \_\_\_\_\_

Date \_\_\_\_\_

*\*Complete Page 2 of Application; Incomplete applications will not be considered; Late applications will be placed on a waiting list\**

**All applications are due to the Heritage High School Governor's STEM Academy Director by January 15, 2013**

Mrs. Toinette Outland, [toinette.outland@mm.k12.va.us](mailto:toinette.outland@mm.k12.va.us),

Phone: (757) 928-6100 ext. 17567, Fax: (757) 247-9058

Heritage High School  
Governor's STEM Academy Application  
STUDENT ESSAY

*In 350-600 words, construct an essay addressing the following questions.*

**What is your vision for a future STEM (science, technology, engineering and math) career? What is it about this field of study that excites you? What would you like to accomplish by pursuing this career pathway?**

*A selection committee will evaluate your essay based on the following criteria:*

*Ideas & Content 50%*

- *Questions effectively addressed*
- *Creative ideas presented*
- *Relevant details included*
- *Knowledge of current technology addressed*

*Organization 25%*

- *Strong introduction*
- *Clear organization*
- *Well-transitioned paragraphs*

*Writing Mechanics 25%*

*Proper use of writing mechanics to include:*

- *Correct spelling*
- *Punctuation*
- *Capitalization and Grammar*

**APPENDIX L**  
**Liability Insurance  
Certificate &  
Certificate of Property  
Insurance**

**CERTIFICATE OF COVERAGE**

Rev. 07/07/05



**Producer:**  
**VML INSURANCE PROGRAMS**  
 P.O. Box 3239, Glen Allen, VA 23058  
 1-800-963-6800 (Phone); 1-804-968-4662 (Fax)  
 www.vmlins.org

This Certificate is issued as a matter of information only and confers no rights upon the Certificate Holder. This Certificate does not amend, extend or alter the Membership Agreement afforded by the policies below, nor guarantees the solvency of VML Insurance Programs.

COMPANIES AFFORDING COVERAGE

VML Insurance Programs

**Named Insured:**

Newport News Public Schools  
 12465 Warwick Blvd.  
 Newport News, VA 23606

**COVERAGES**

This is to certify that the coverage listed below has been issued to the Member named above for the policy period indicated, notwithstanding any requirement, term or condition of any contract or other document with respect to which this Certificate may be issued or may pertain, the coverage afforded by the policies described herein is subject to all the terms, exclusions and conditions of the Member Agreement and the policy forms. Limits shown may have been reduced by paid claims.

Type of Coverage	Policy Number	Effective Date	Expiration Date	Limits	
<b>General Liability</b> Damage to Premises Rented to You Medical Payments	P-2012-2013-VMLP-0652-1	07/01/2012	07/01/2013	Each Occurrence	\$1,000,000
				Any One Fire	\$1,000,000
				Any One Person	\$10,000
<b>Public Officials Liability</b>	P-2012-2013-VMLP-0652-1	07/01/2012	07/01/2013	Included in GL	
<b>Excess Liability</b>	P-2012-2013-VMLP-0652-1	07/01/2012	07/01/2013	Per Occurrence	\$10,000,000

**Description of Operations/Locations/Vehicles/Special Items**  
 Evidence of Coverage

**CERTIFICATE HOLDER**

Virginia Department of Education  
 101 North 14th St  
 Richmond, VA 23219

**CANCELLATION:** Should the above described Member Agreement be cancelled before the expiration date thereof, VML Insurance Programs will endeavor to mail written notice within 30 days to the Certificate Holder named to the left, but failure to mail such notice shall impose no obligation of any kind upon VML Insurance Programs, its agents or representatives.

By: *Crystal Griffin*

Date: 09/04/2012



# **APPENDIX M**

## ***Budget***

**Heritage High School  
Governor's STEM Academy  
BUDGET**

A - Director Costs	TOTAL			
	State Funds	Perkins Funds	Other Funds (Local or grant funds to be described in Budget Narrative)	In-Kind
1. Personnel---1000	\$0	\$0	\$0	\$0
2. Employment Benefits---2000	\$0	\$0	\$0	\$0
3. Purchased/Contractual Services ---3000	\$0	\$9,000	\$0	\$0
4. Internal Services---4000	\$0	\$0	\$1235	\$0
5. Staff Development---5000	\$0	\$0	\$1500	\$0
6. Summer Component Activities ---5000	\$0	\$0	\$0	\$0
7. Travel---5000	\$0	\$0	\$0	\$0
8. Contractual Services---5000	\$0	\$0	\$1500	\$0
9. Materials and Supplies---6000	\$0	\$0	\$0	\$18,698.80
10. Equipment---8000	\$0	\$20,342.80	\$0	\$0
11. Facilities---8000	\$0	\$0	\$0	\$0
<b>B-Indirect Costs*</b>		\$0	\$0	\$0
<b>TOTAL</b>		\$29,342.80	\$4235	\$18,698.80

\*If recovering indirect costs, the rate must not exceed the federally approved indirect cost rate of the fiscal agent.

**APPENDIX N**  
***Partnership Capacity/  
Memorandum of  
Agreement***

# **Heritage High School Governor's STEM Academy Partnerships**

Heritage High School and Newport News Public Schools will convene and coordinate a partnership team representing higher education, and business and industry plan and advise the school division and Heritage High School in implementing the Governor's STEM Academy.

Partnership members shall serve on a Planning/Advisory committee with members of the K-12 education community.

The Heritage High School Governor's STEM Academy offers a program of study designed to expand options for students to acquire skills in Science, Technology, Engineering, and Mathematics (STEM). The program combines academic coursework and research experience, with a challenging and focused school environment to prepare students for 21st century careers. Students will gain the knowledge and skills they need to succeed in technologically-rich workplaces by learning how to work in teams, communicate effectively, and apply the principles of science, technology, engineering, and mathematics.

The courses students choose will equip them with the skills they will need for success in their chosen careers. There will be a strong emphasis on the Career Pathways of Engineering Technology, Design and Pre-Construction, Programming and Software Development, Web and Digital Communications, Modeling and Simulation, and Network Systems. Students may complete study in the following courses in the Governor's STEM Academy at Heritage High School: Engineering & Electronics, Architectural & Engineering Drawing, Modeling & Simulation, and Computer Systems Technology.

Members from the following organizations have agreed to participate in the partnership and serve on the Planning/Advisory committee:

## Partners

### Heritage High School Governor's STEM Academy

<b>Higher Education</b>		
Christopher Newport University	Ms. Melissa Hedlund, Department of Mathematics	<a href="mailto:Melissa.hedlund@cnu.edu">Melissa.hedlund@cnu.edu</a> (757) 594-8655 1 University Place Newport News, VA 23606-2988
Thomas Nelson Community College	Mr. John Calver, Director, Advanced Manufacturing Excellence Center	<a href="mailto:calverj@tncc.edu">calverj@tncc.edu</a> (757) 865-3123 Thomas Nelson Community College 600 Butler Farm Road, Suite A Hampton, VA 23666
Norfolk State University	Dr. Aliecia R. McClain, Director, Dozoretz National Institute for Mathematics and Applied Sciences	<a href="mailto:amclain@nsu.edu">amclain@nsu.edu</a> (757) 823-2511 700 Park Avenue Dozoretz Research Wing, Suite 204 Norfolk, VA 23504
Old Dominion University, Lean Institute	Alok K. Verma, Ph.D., P.E., CMfgE Ray Ferrari Professor Director, Lean Institute, Engineering Technology	<a href="mailto:averma@odu.edu">averma@odu.edu</a> (757) 683-3766 Old Dominion University Department, KH-214 Norfolk, VA 23529
<b>Business &amp; Industry</b>		
Newport News Shipbuilding	Ms. Jennifer McClain Manager, Organizational Dev. & Career Pathways	<a href="mailto:Jennifer.c.mcclain@ngc.com">Jennifer.c.mcclain@ngc.com</a> (757) 688-8439 4101 Washington Avenue Newport News, VA 23607
Thomas Jefferson National Accelerator Facility (Jefferson Lab)	Ms. Janet Tyler, Science Education Manager	<a href="mailto:tyler@jlab.org">tyler@jlab.org</a> (757) 269-7164 Office of Science Education 628 Hofstadter Road, Suite 6 Newport News, VA 23606
Canon, Virginia	Ms. Rhonda Bunn, Director of Human Resources & Public Relations	<a href="mailto:rbunn@cvi.canon.com">rbunn@cvi.canon.com</a> (757) 881-6299 12000 Canon Blvd. Newport News, VA 23606
Virginia Peninsula Chamber of Commerce	Mr. Mike Kuhns, President & CEO	<a href="mailto:mkuhns@vpcc.org">mkuhns@vpcc.org</a> (757) 325-8170 21 Enterprise Pkwy., Suite 100 Hampton, VA 23666
Peninsula Council for Workforce Development	Hon. Matthew James, President & CEO Mr. Shawn Avery V.P., Private/Public Strategic Partnerships	<a href="mailto:savery@pcfwd.org">savery@pcfwd.org</a> (757) 826-3327 11820 Fountain Way, Suite 301 Newport News, Virginia 23606
Newport News Education Foundation	Dr. Guy Levy, President	<a href="mailto:guylevy@cox.net">guylevy@cox.net</a> (757) 591-4502 12465 Warwick Blvd. Newport News, VA 23606

Riverside School of Health Careers	Ms. Tracee Carmean, Vice President	<a href="mailto:Trace.carmean@rivhs.com">Trace.carmean@rivhs.com</a> (757) 240-2213 316 Main Street Newport News, VA 23601
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## Partnership Agreement

Between

Newport News Public Schools

and

The Heritage High School Governor's STEM Academy Partners

Newport News Public Schools (NNPS) and the undersigned partner agree to work together to inspire and prepare Heritage students to pursue higher education and career opportunities in Science, Technology, Engineering, and Mathematics (STEM) fields.

NNPS Partners agree to:

- Identify the employment needs and opportunities in Hampton Roads STEM industries.
- Provide guidance in the development of curriculum and course offerings relating to STEM.
- Provide opportunities for job shadowing and internships as appropriate for students.
- Provide opportunities for site visits when possible to expose students to STEM work settings and STEM employees.
- Participate as possible in STEM activities and programs that further the goals of the STEM Academy.

NNPS Agrees to:

- Coordinate the Heritage High School Governor's STEM Academy.
- Designate a STEM Academy point of contact for partners.
- Provide partners with a menu of partnership activities and programs that partners may choose from to the mission of the STEM Academy.
- Offer courses related to engineering, electronics, architecture engineering drawing, modeling and simulation, computer systems technology and geospatial information systems.
- Provide a STEM Academy overview, tour and orientation to partners as needed.
- Provide office space as available in the school as a base for partners to use while at the school and to keep educational materials and equipment used at the school.

By signing this agreement, partners agree to support the measures listed above in support of the Heritage High School Governor's STEM Academy.

Name of Partner Organization: Christopher Newport University

Signature: Melissa D. Hedlund

Title: Instructor

Date: 8-27-12

## Partnership Agreement

Between

Newport News Public Schools

and

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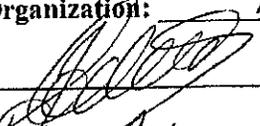
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Name of Partner Organization: TNCC

Signature: 

Title: Director, Advanced Manufacturing

Date: August 30, 2012

## Partnership Agreement

Between

Newport News Public Schools

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Name of Partner Organization: Norfolk State University (DNIMAS)

Signature: Alicia R. McClanahan

Title: Director of DNIMAS and Dept. Chair Chemistry

Date: 8/24/12

## Partnership Agreement

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Newport News Public Schools

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Name of Partner Organization: NEWPORT NEWS SHIPBUILDING

Signature: Jennifer C. McGowan

Title: MANAGER, ORG. DEVELOPMENT / CAREER PATHWAYS

Date: AUGUST 28, 2012



## Partnership Agreement

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Name of Partner Organization: Jefferson Lab

Signature: Janet McJannet

Title: Science Education Manager

Date: August 27, 2012

## Partnership Agreement

Between

Newport News Public Schools

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By signing this agreement, partners agree to support the measures listed above in support of the Heritage High School Governor's STEM Academy.

Name of Partner Organization:

Canon Virginia, Inc.

Signature:

Frank Bunn

Title:

Senior Manager HR/PR

Date:

9/4/12

## Partnership Agreement

Between

Newport News Public Schools

and

The Heritage High School Governor's STEM Academy Partners

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Name of Partner Organization: VIRGINIA PENINSULA CHAMBER OF COMMERCE

Signature: [Handwritten Signature]

Title: PRESIDENT/CEO

Date: 8/31/12

## Partnership Agreement

Between

Newport News Public Schools

and

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Name of Partner Organization: Peninsula Council for Workforce Development

Signature: 

Title: President and CEO

Date: Aug 27, 2012

## Partnership Agreement

Between

Newport News Public Schools

and

The Heritage High School Governor's STEM Academy Partners

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Name of Partner Organization: NEWPORT NEWS EDUCATION FOUNDATION

Signature: \_\_\_\_\_

Title: President

Date: Sept 13, 2012

## Partnership Agreement

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Name of Partner Organization: Riverside School of Health Careers

Signature: Trace B. Carmean

Title: Vice President

Date: 9/13/12

## Partnership Agreement

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Newport News Public Schools

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- Provide office space as available in the school as a base for partners to use while at the school and to keep educational materials and equipment used at the school.

**By signing this agreement, partners agree to support the measures listed above in support of the Heritage High School Governor's STEM Academy.**

**Name of Partner Organization:** Lean Institute , Old Dominion University

**Signature:** Alok K. Verma

**Title:** Dr. Alok K. Verma – Director Lean Institute

**Date:** 9/14/2012

**APPENDIX O**  
***Statement of***  
***Assurances***

**Governor's Science, Technology, Engineering and  
Mathematics (STEM) Academy**

**STATEMENT OF ASSURANCES**

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

1. The planning committee has reviewed the provisions of *Administrative Procedures Guide for the Establishment of Governor's STEM Academies* outlined in the Guidance Manual, and understands that an implementation proposal will need to address these criteria and/or others approved by the Virginia Board of Education.
2. The planning committee agrees to follow the guidelines set forth in the *Administrative Procedures Guide for the Establishment of Governor's STEM Academy's* document.
3. If the Governor's STEM Academy will be a jointly operated program, an ongoing governing board will be established or maintained to reflect current Board of Education regulations relative to jointly operated schools and programs.
4. A public, government entity will serve as the grant fiscal agent.

Certification by Authorized or Institutional Official:

The applicant certifies that to the best of his/her knowledge the information in this application is correct, that the filing of this application is duly authorized by the partners participating in this process to establish a Governor's STEM Academy, and that the applicant will comply with the statements of assurances.

Ashby K. Gore  
Typed or Printed Name of Authorized Official

Superintendent  
Title

[Signature]  
Signature of Authorized Official

9-5-12  
Date