

## Clean Technologies and Sustainable Industries Early College High School Program

### What you need to know about the HVCC college coursework?

- College Pathways- Students explore the different career pathways during their sophomore year high school course. We invite business partners and current seniors about the coursework, training, and careers in each major/pathway.
  - Clean Energy Management
  - Community and Public Health
  - Engineering Sciences
  - Entrepreneurship
  - Hacking and Cybersecurity
  - Polysomnography
  - Surgical Technology
- April/May Students will make their final college major choice.
- **College Pathway Restrictions:**
  - Students who have not completed Algebra 2 OR who are not co-enrolled with Algebra 2 at their home school for junior year will be restricted to the Community Health Navigation and Entrepreneurship pathways.
  - Any student who would like to pursue the *Engineering Sciences or Hacking & Cybersecurity* pathways will need to have completed Algebra 2 in their sophomore year of high school so that they are prepared to take the College PreCalculus during their junior year.
- HVCC College Math
  - This is determined by the current math courses and grades students have achieved at their home school.

<b><u>Sophomore Year</u></b>	<b><u>HVCC Math Recommendation</u></b>	<b><u>Pathways Available To</u></b>
Algebra I, Applied Geometry	Intermediate Algebra	Entrepreneurship
Geometry & Enrolled in Algebra II at Home School during junior year	College Algebra with Trigonometry	Clean Energy, Entrepreneurship, Surgical Tech
Successful completion of Algebra II	College PreCalculus	All Pathways <i>except</i> Community & Public Health
Algebra I	Elementary Statistics	Community & Public Health

- If a student is in Algebra II at their home school and passes it as a sophomore, they will take College PreCalculus. A student will not take PreCalculus at their home school.
- If a student is maintaining less than a 70 in their high school Algebra II course 1<sup>st</sup> quarter, the student will be recommended to take College Intermediate Algebra as a junior.
- Students will take 2 college courses each semester in person at TEC-SMART from HVCC professors. Based on college requirements, some pathways may only have 1 course in a semester.
- Students will have the coursework in advance so they do not take it at their home school. Students have to take the college coursework assigned to their pathway.
- The college coursework is subject to change by HVCC as their requirements change.
- There are HVCC college classes over February & April high school vacations.

## Clean Technologies and Sustainable Industries Early College High School Program

### What is Clean Energy Management?

The degree program combines renewable energy and business courses to meet industry demands for employees with a blend of technical skills and business management abilities.

In addition to basic electrical theory and an exploration of photovoltaic, geothermal, wind and fuel cell energies, the program focuses on the essential principles of finance, marketing and business development. You'll also get technical training in PV installation, troubleshooting and maintenance.

### Clean Energy Management HVCC College Coursework

HVCC College Coursework	Credits	Year/Semester Taken
MCTS 105 - AC/DC Electrical Fundamentals	6	Fall Junior Year
BADM 110 - Legal & Ethical Environment of Business	3	Fall Junior
MATH 150 - College Algebra w/ Trigonometry OR PreCalculus	4	Spring Junior Year
ESYS 100 - Wind Energy	1	Spring Junior Year
ECMN 210 - Photovoltaic Systems Theory & Design	3	Fall Senior Year
MKTG 120 - Principles of Marketing	3	Fall Senior Year
ENGL 101 - English Composition I	3	Fall Senior Year
BADM 200 - Business Communications	3	Fall Senior Year
ECMN 211 - Photovoltaic Systems Installation & Maintenance	3	Spring Senior Year
BADM 207 - Organization & Management	3	Spring Senior Year

***\*\*College coursework is subject to change based on HVCC & enrollment decisions.***

<u>Year 5 and 6 Coursework</u>	
ACTG 110 - Financial Accounting	Liberal Arts & Science Elective
BADM 220 - Statistics	Liberal Arts & Science Elective
CISS 100 - Intro to Computing & Info Sciences	Business Elective
HVAC 203 - HVAC/R Systems Design I	Business Elective

### Clean Energy Management

Companies	Specific Jobs
TRC	Solar Outreach & Policy
Institute for Building Technology & Safety	Solar QA Inspector
Momentum	Sales & Sales Manager
GE (Lighting, Renewables)	Environmental Project Manager
Century Solar	Renewable Energy Technician
Redfeather Energy	Calibration Technician
APEX Solar	Energy Auditors
Aztec	Wind Energy Engineers
Brookfield Renewables	Photovoltaic Installers
Monolith Solar	Design Analyst
Magnolia Solar	
Kasselmann Solar	
NYSERDA	
National Grid	

## Clean Technologies and Sustainable Industries Early College High School Program

### What is Community and Public Health?

The degree program is for those interested in the field of community health who may have little or no background in the field. Community health navigators educate, motivate and empower their clients. Working under licensed health care professionals, they serve as a liaison between clients and the health care system, connecting clients with services and providing support for those navigating the health care landscape.

Coursework in this program will help you acquire a broad base of knowledge that spans health care, community health, health insurance, human services, health literacy and chronic diseases.

### Community and Public Health HVCC College Coursework

<b>HVCC College Coursework</b>	<b>Credits</b>	<b>Year/Semester Taken</b>
PSYC 100 - General Psychology	3	Fall Junior Year
ENGL 125 - Public Speaking	3	Fall Junior Year
HUSV 100 - Social Service Systems	3	Spring Junior Year
SOCL 110 - Social Problems	3	Spring Junior Year
PSYC 200 - Child Psychology	3	Fall Senior Year
SOCL 120 - Cultural Diversity in American Society	3	Fall Senior Year
ENGL 101 - English Composition I	3	Fall Senior Year
CMHL 110 - US Healthcare	3	Spring Senior Year
CMHL 115- Healthcare Ethics	3	Spring Senior Year

***\*\*College coursework is subject to change based on HVCC & enrollment decisions.***

<b>Year 5 and 6 Coursework</b>	
ASLN 100 - American Sign Language & Deaf Culture I OR SPAN 100 - Spanish Language & Culture I	CMHL 201 - Community Health Navigation Practicum
BIOL 109 - Biology of the Human Organism	CMHL 205 - Chronic Diseases
BADM 220 - Statistics OR MATH 135: Elementary Statistics	ENGL 104 - English Composition II
CDEP 100 - Intro to Chemical Dependency	HUSV 115 - Perspectives on Disability
CMHL 100 - Intro to Community & Public Health	HUSV 240 - Professionalism in a Diverse Society
CMHL 200 - Community Health Navigation	

### Community and Public Health

#### **Specific Jobs**

Patient Navigator  
Benefits Navigator  
Community Health Worker  
Health Outreach  
Patient Advocate  
Health Insurance Company

**Clean Technologies and Sustainable Industries Early College High School Program**

**What is Engineering Sciences?**

The degree program parallels the first two years of four-year college programs in mathematics, physics, chemistry, and various engineering fields.

**Engineering Sciences HVCC College Coursework**

<b>HVCC College Coursework</b>	<b>Credits</b>	<b>Year/Semester Taken</b>
CISS 110 - Programming & Logic 1 (counts as Engineering Elective)	1	Fall Junior Year
ENGR 120 - Intro to Engineering Design	3	Fall Junior Year
MATH 170 - College PreCalculus (counts as Restricted Elective)	4	Spring Junior Year
ENGR 110 - Engineering Tools OR PSYC 205 - Developmental Psychology (counts as General Ed. Elective)	3	Spring Junior Year
MATH 180 - Calculus I	4	Fall Senior Year
ENGL 101 - English Composition I	3	Fall Senior Year
PHYS 150 - Physics I	4	Fall Senior Year
ENGL 104 - English Composition II	3	Spring Senior Year
MATH 190 - Calculus II	4	Spring Senior Year

***\*\*College coursework is subject to change based on HVCC & enrollment decisions.***

<b><u>Year 5 and 6 Coursework</u></b>	
CHEM 110 - General Chemistry I OR CHEM 120 - Chemistry I	PHYS 151 - Physics II
ENGR 211 - Engineering Statics	General Education Elective - 3 credits (if didn't take PSYC 205)
MATH 210 - Calculus III	
MATH 220 - Calculus IV	Engineering Electives - 12 credits

**Engineering Sciences**

<b><u>Specific Jobs</u></b>
Mechanical Engineer Biomedical Engineer Industrial Engineer Civil Engineer

## Clean Technologies and Sustainable Industries Early College High School Program

### What is Entrepreneurship?

You will learn the fundamentals that will help you learn to better the odds of creating sustainable success in your business. Coursework will help you develop an entrepreneurial mindset and understand entrepreneurial finance, small business management, marketing, and legal issues for small business owners. The internet has greatly expanded the possibilities for small entrepreneurs, allowing businesses to establish niche audiences and clientele around the world.

### Entrepreneurship, Innovation, & Leadership HVCC College Coursework

<b>HVCC College Coursework</b>	<b>Credits</b>	<b>Year/Semester Taken</b>
MKTG 120 - Principles of Marketing	3	Fall Junior Year
ENTR 110 - Introduction to Entrepreneurship	3	Fall Junior Year
MKTG 210 - Digital Marketing (counts as Business Elective)	3-4	Spring Junior Year
MATH 170 – Precalculus or MATH 150 – College Algebra w/Trig or BADM 110 - Legal & Ethical Environment of Business	4	Spring Junior Year
PSYC 100 - General Psychology	3	Fall Senior Year
ENGL 101 - English Composition I	3	Fall Senior Year
ENTR 120 - Entrepreneurship Process	3	Fall Senior Year
BADM 207 - Organization & Management	3	Spring Senior Year
BADM 200 - Business Communications	3	Spring Senior Year

***\*\*College coursework is subject to change based on HVCC & enrollment decisions.***

<b>Year 5 and 6 Coursework</b>	
ACTG 110 - Financial Accounting	Computer Electives (3)
ACTG 120 - Personal Finance	ENTR 290 - Entrepreneurial Strategy
BADM 110 - Legal & Ethical Environment of Business (taken in Spring Junior Year for non-Math students)	MKTG 214 - Selling & Sales Management
BADM 290 - Internship	Liberal Arts and Sciences Natural Science Elective Credits: 3
BADM 220 - Statistics	Restricted English Elective Credits: 3
ECON 101 - Principles of Microeconomics	

### Entrepreneurship, Innovation, & Leadership

<b>Supporting Companies</b>	<b>Specific Jobs</b>
Independent Small Business Owner	Independent Small Business Owner
Saratoga Prosperity Partnership	Sales Managers
Saratoga Economic Development Corporation	Marketing Managers
NYS Business Council	Computer Systems Managers
Troy Innovation Garage	Construction Managers
NY Biz Lab	Public Relations Specialists
Chambers of Commerce	Patent Lawyers
ABM	Inventors
FingerPaint Marketing	Business Development Manager
Higher Logic	Marketing Coordinator
BlueSoho	
FuzeHub	

## Clean Technologies and Sustainable Industries Early College High School Program

### What is Hacking and Cybersecurity?

The Hacking and Cybersecurity degree combines criminal justice and computer information systems coursework with a strong base of liberal arts courses to prepare you for transfer into a bachelor's degree program in Digital Forensics, Cybersecurity and other related programs.

### Hacking and Cybersecurity HVCC College Coursework

<b>HVCC College Coursework</b>	<b>Credits</b>	<b>Year/Semester Taken</b>
CISS 100 - Intro. To Computing & Info. Sciences	4	Fall Junior Year
PSYC 100 - Psychology	3	Fall Junior Year
MATH 170 - College PreCalculus	4	Spring Junior Year
CISS 110 - Programming & Logic 1	4	Spring Junior Year
Liberal Arts/Gen Ed Elective	3	Fall Senior Year
MATH 180 - Calculus I	4	Fall Senior Year
ENGL 101 - English Composition 1	3	Fall Senior Year
CISS 125 - Computer & Information Security	3	Spring Senior Year
ENGL 104 - English Composition II- Writing about Lit	3	Spring Senior Year

***\*\*College coursework is subject to change based on HVCC & enrollment decisions.***

<u>Year 5 and 6 Coursework</u>	
CISS 111 – Programming & Logic II	FSCI 245 - Forensic Science I
CISS 120 - Networking I - Intro to Data Communication	MATH 183 – Discrete Mathematics
CISS 150 - Operating Systems	Liberal Arts/Gen Ed – 3 credits
CISS 210 – Information Systems Analysis and Design	Restricted Elective – 3 credits
CISS 245 – Ethical Hacking & Cybersecurity	

### Hacking and Cybersecurity

<b>Companies</b>	<b>Specific Jobs</b>
American Technology Consulting Commerce Hub GreyCastle Security Annese & Associates Inc. Twinstare Technologies TechBridge Group LLC Complete Network Support Logical Net Corp. ADNET Technologies NY LLC Stored Technology Solutions Inc.	Risk Assessment Offensive Security Management Defensive Security Management Patch Management Perimeter Protection Vulnerability Assessment Social Engineering Prevention Email Hosting & Protection Chief Information Security Officer Cybersecurity Specialist

## Clean Technologies and Sustainable Industries Early College High School Program

### What is Polysomnography?

The degree program prepares graduates to work in the field of polysomnography OR electroencephalography diagnostic testing. Polysomnography is an allied health specialty that deals with the diagnostic evaluation and management of patients with neurological and sleep abnormalities.

Neurodiagnostic testing may be done with patients of all ages, from the premature infant to the geriatric patient. Job opportunities may be found in sleep labs and EEG departments OR hospitals OR associated with physician's offices.

Polysomnography technologists administer sleep tests and work with physicians to provide information needed for accurate diagnosis and treatment.

This degree prepares you for a career as a technician/technologist in the field of polysomnography, which deals with the diagnostic evaluation and management of patients with neurological or sleep abnormalities. There are over 80 different sleep disorders including sleep apnea, narcolepsy and insomnia. You will learn how to operate sophisticated electronic monitoring devices which record brain activity (EEG), muscle and eye movements, blood oxygen levels and physiological events.

### Polysomnography HVCC College Coursework

<b>HVCC College Coursework</b>	<b>Credits</b>	<b>Year/Semester Taken</b>
PSYC 100 - General Psychology	3	Fall Junior Year
BADM 220 – Statistics OR MATH 135 - Elementary Statistics	4	Spring Junior Year
BIOL 139 - Anatomy & Physiology for Respiratory Care Students	4	Fall Senior Year
ENGL 101 - English Composition I	3	Fall Senior Year
PHYS 110 - Physics for the Health Sciences	4	Fall Senior Year
CMHL 115 – Healthcare Ethics	3	Spring Senior Year
RESP 110 – Human Anatomy & Physiology	3	Spring Senior Year

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<b><u>Year 5 and 6 Coursework</u></b>	
ENGL 102 - English Composition II	PSGT 210 - Polysomnography Data Analysis & Recording
PSGT 100 - Applied Pharmacology	PSGT 220 – Electroencephalography Clinical
PSGT 120 - Fundamentals of Neurodiagnostics I	PSGT 225 - Polysomnography Clinical I
PSGT 200 - Fundamentals of Neurodiagnostics II	PSGT 235 - Polysomnography Clinical II
PSGT 205 - Sleep and Neurological Disorders	RESP 101 - Basic Interpretation and Performance of the Electrocardiogram

## Clean Technologies and Sustainable Industries Early College High School Program

### What is Surgical Technology?

Surgical technologists prepare operating rooms, arrange equipment and help doctors during a range of surgical procedures. They also may be responsible for ensuring aseptic conditions in the operating room, as well as cleaning and preparing all instruments that might be needed in an operation.

This program prepares you for a career as a professional member of a surgical team. Students are involved in lecture and discussion classes as well as clinical learning experiences

The degree program is ideal for those interested in entering the field of surgical technology and who are looking for an accredited program to gain certification.

### Surgical Technology HVCC College Coursework

<b>HVCC College Coursework</b>	<b>Credits</b>	<b>Year/Semester Taken</b>
PSYC 100 - General Psychology	3	Fall Junior Year
PSYC 205 - Developmental Psychology	3	Spring Junior Year
MATH 150 - College Algebra w/ Trig OR MATH 170 - College PreCalculus	4	Spring Junior Year
BIOL 270 - Anatomy & Physiology I	4	Fall Senior Year
ENGL 101 - English Composition I	3	Fall Senior Year
BIOL 271 - Anatomy & Physiology II	4	Spring Senior Year

**\*\*College coursework is subject to change based on HVCC & enrollment decisions.**

<b><u>Year 5 and 6 Coursework</u></b>	<b><u>Year/Semester Taken</u></b>
BIOL 205 - Microbiology	Fall Year 5
SURG 101 - Surgical Technology I	Fall Year 5
SURG 102 - Surgical Technology II	Spring Year 5
SURG 201 - Surgical Technology III	Summer or Fall Year 6
SURG 202 - Surgical Technology IV	Fall or Spring Year 6
ENGL 102 - English Composition II	Year 5/6