



**Connecticut
River Academy**
at Goodwin University

Program of Studies (2025-2026)

Director: JT Foster

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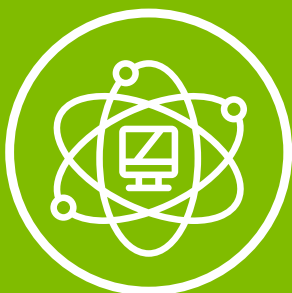
9 Riverside Drive, East Hartford, CT 06118



**UNIVERSITY OF
BRIDGEPORT**



Goodwin
University



A Message from the Director

Dear Scholars,

This **Program of Studies** offers you the opportunity to chart a course for your high school career that allows you to explore the fields of Health Science and Nursing, Manufacturing and Engineering, Business Administration, Computer Science, or our traditional Liberal Arts pathway.



You will select courses from a challenging and varied curriculum taught by a talented faculty. We are a small high school with high expectations offering big opportunities. These expectations and opportunities are met through careful planning. In selecting your overall program and specific courses, it is important you consult with family, educators, school counselors, and administrators. They can help you make decisions regarding your future plans, and will guide you toward the appropriate and necessary classes.

The required courses at CTRA are designed to prepare all scholars to go on to post-secondary education. There are other courses you can choose that will support your learning and push you to higher levels of learning. We encourage you to take this opportunity to select courses that will help you grow academically and prepare you for a successful future.

Once you have made your decisions, you should regard your course selection as your commitment for the coming year to bring you closer to your goals. Please spend the time necessary to make a commitment to your future success. Good luck and may next year at The Connecticut River Academy be an outstanding one for you.

Be Well,

JT Foster

JT Foster
Director

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District Core Values



DISTRICT CORE VALUES

Demanding **equity**, providing **access**, facilitating **growth**, encouraging **leadership** and expecting **excellence** is at the core of Goodwin University Magnet School System. Our daily decision-making and operations will function according to these tenets that support our community, which includes our scholars, families, staff and external partners.

E

EQUITY

We will demand equity to provide all scholars with a voice and choice toward a high-quality, integrated education. We will challenge biases, share and listen to differing perspectives, and become passionate co-conspirators.

A

ACCESS

We will provide access to unique and once-in-a-lifetime opportunities for our community. We will open doors to exceptional academic and professional careers.

G

GROWTH

We will facilitate growth and understanding in our community through compassionate and diverse methods of communication and education. We will welcome the development of our communities' physical, mental and spiritual well beings through supportive and open-minded practices.

L

LEADERSHIP

We will encourage leadership and accountability amongst our community members to prepare scholars to move forward in the world as active citizens, change-makers, innovators, critical thinkers and problem solvers.

E

EXCELLENCE

We will expect excellence from our community, whether that be academically, professionally or personally. We will empower ourselves and each other to uphold high standards in everything we do.

CTRA Core Values, Mission, & Magnet Standards

CTRA CORE VALUES:

AWARENESS - DIVERSITY - ACTION

CTRA MISSION:

The mission of Connecticut River Academy is to:

- prepare its diverse student body for further educational opportunities, including the possible pursuit of careers in environmental or other sciences;
- break down racial, ethnic, economic, gender and other social and academic barriers; and help its students to become well rounded, scientifically literate, and responsible 21st century citizens.

CTRA MAGNET STANDARDS:

CTRA scholars will contribute to a just and sustainable world by:

Magnet Standard 1: *demonstrating self- and global awareness.*

- Using self-reflection to identify personal values, interests, strengths, and challenges
- Making plans and using strategies, resources, and innovative technologies and ideas to contribute to the well-being of self, others, and the environment
- Increasing global awareness to improve the efficacy and sustainability of decisions
- Using Habits of Mind and the design process to make choices that will positively affect our future

Magnet Standard 2: *demonstrating respect for the importance of diversity in the community of life.*

- Communicating an understanding of how diversity affects our physical, social, economic, and cultural environments
- Seeking diverse, innovative ideas and relationships
- Making collaborative and informed decisions

Magnet Standard 3: *demonstrating the impact of individual and social actions and decisions on the community of life.*

- Communicating an understanding of how choices affect environments
- Acting individually and collectively to positively affect our environments and increase community ownership for learning
- Employing innovative manufacturing methods and technologies that improve the conditions of life

Class of 2023 & Beyond Graduation Requirements for Connecticut River Academy

For graduation from Connecticut River Academy, scholars must earn a minimum of twenty-five credits, including:

CT Graduation Requirements	Subjects	Credits	Mandatory Courses or Equivalent
Humanities (9 Credits)	English	4	<i>1 English credit each year for 4 years</i>
	Social Studies	3	<i>Civics (.5 credit) and US History (1 Credit)</i>
	Fine Arts	1	<i>Art or Music</i>
	Elective	1	<i>1 elective credit in Social Studies, English, World Language, or Fine Arts</i>
STEM (9 Credits)	Mathematics	4	
	Science	3	<i>1 credit in a physical science, 1 credit in a life science, and 1 additional credit in a lab science course</i>
	Technology	1	
	STEM Elective	1	
World Language (2 Credits)	Spanish	2	<i>*Scholars may meet requirements for Seal of Bi-Literacy on diploma and transcript</i>
Self-Wellness (2 Credits)	Physical Education	1	
	Health	1	
Electives (2 Credits)		2	<i>May be any course in any subject area that is not required for graduation</i>
Mastery Based Diploma (1 Credit)	Capstone Experience	1	<i>Senior demonstration project and exhibition</i>
25 Credits		25	

* Both native and non-native speakers of English may be eligible for the Seal of Bi-Literacy by meeting both of the following requirements: 1.) Scholars must complete all English requirements for graduation, 2.) Scholars must demonstrate proficiency in a language other than English at a level comparable to Intermediate Mid on the ACTFL proficiency guidelines as measured by an approved assessment in grade 10 or later.

Promotion Requirements for Connecticut River Academy

The minimum number of credits needed for promotion to the next grade level is as follows:

Grade 10	6 credits
Grade 11	12 credits
Grade 12	18 credits
Graduation	25 credits including all mandatory courses listed above

CTRA scholars in grades 9-11 must be enrolled in a minimum of 6 credit bearing classes per semester. Scholars in grade 12 must be enrolled in a minimum of 5 credit bearing classes per semester. Students lacking credits for promotion will be expected to repeat coursework or attend summer school to stay on track with their classmates for graduation.

Legal References:

PA 10-111

PA 11-235

PA 17-42

CGS 10-221(c)

* Both native and non-native speakers of English may be eligible for the Seal of Bi-Literacy by meeting both of the following requirements: 1.) Scholars must complete all English requirements for graduation, 2.) Scholars must demonstrate proficiency in a language other than English at a level comparable to Intermediate Mid on the ACTFL proficiency guidelines as measured by an approved assessment in grade 10 or later.

** The Capstone Experience is a graduation requirement for all CTRA Scholars.

The Capstone Experience is a culminating activity that provides a way for scholars to demonstrate the knowledge and skills they acquired throughout their years at CTRA. It engages scholars in a project/experience that focuses on an interest, career path or academic pursuit that synthesizes classroom study and real world perspective. CTRA scholars are asked to demonstrate their ability to apply key knowledge and skills by planning, completing and presenting a culminating project linked to one or more area of personal interest and the individual's Scholar Success Plan.

The Capstone Experience may include an in-depth project, reflective portfolio, community service and/or internship. As part of the experience, the scholar will demonstrate research, communication and technology skills including additional relevant 21st century skills.

Promotion Requirements for the Connecticut River Academy

At the conclusion of each school year, scholars at the Connecticut River Academy are promoted to the next grade so long as there is still the potential for them to earn enough credits to graduate with their current graduation class. If the scholar cannot possibly graduate with their original class, they will repeat their current grade and move to an anchor/advisory group that corresponds with that grade.

The minimum number of credits needed for promotion to the next grade level are as follows:

Grade 10: 6 credits

Grade 11: 12 credits

Grade 12: 18 credits

Graduation: 25 credits

CTRA scholars in grades 9-11 must be enrolled in a minimum of 6 credit bearing classes per semester. Scholars in grade 12 must be enrolled in a minimum of 5 credit bearing classes per semester. Students lacking credits for promotion will be expected to repeat coursework or attend summer school to stay on track with their classmates for graduation.

Summer School

Scholars lacking credits for promotion may attend summer school to stay on track with their classmates for graduation. Summer School must be completed in the summer semester following the school year that the credit was lost and will be at the expense of the scholar's family, taken through their home district. If a scholar was truant from school and lost credit as a result, they are not eligible to make up this credit through Summer School.

Non-Discriminatory Statement

Goodwin University Educational Services (GUES) is an equal opportunity employer and does not discriminate on the basis of race, color, religious creed, age, marital status, sexual orientation, national origin, sex, ancestry, present or past history of mental disorder, mental disorder, mental retardation, pregnancy, or physical disability.

Program Considerations

When a course lists a prerequisite, the scholar must have passed the prerequisite to take the course. A scholar may repeat a course to meet a grade requirement for a prerequisite but may not count the same course twice as credit toward that subject for graduation. Scholars must repeat, in the subsequent summer or the subsequent year, courses required for graduation which they fail. Two grades of English may only be taken concurrently upon the successful completion of English 9 and English 10.

All scholars in grades 9-11 must be scheduled for a minimum of six credit bearing classes per semester. Scholars in grade 12 must be enrolled in a minimum of five credit bearing classes per semester. Any course, in any department, may be considered an elective if it is not required for graduation. The elective credit requirement may vary depending on the number of credits the scholar has acquired in the other subject areas.

Grade Point Average

4-point numeric system

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
4.333	4.0	3.667	3.333	3.0	2.667	2.333	2.0	1.667	1.333	1.0	.667	0
100-97	96-93	92-90	89-87	86-83	82-80	79-77	76-73	72-70	69-67	66-63	62-60	59-50

Honor Roll

The honor roll is computed at the end of each quarter based on the grades in all subjects. Scholars must be enrolled in a minimum of three CTRA credit bearing courses to be eligible for honor roll consideration. High honors requires an A- or better in all subjects. Honors requires a B- or better in all subjects.

Class Rank at CT River Academy

The Connecticut River Academy does not rank scholars according to their Grade Point Average. The University of Connecticut awards scholarships to the two seniors in the senior class with the highest-Grade Point Averages. This is determined using the year end Junior Grade Point Average.

Cancellation of Courses or Programs

Courses or programs listed and/or described in this document are subject to change at any time due to budgetary limitations, insufficient enrollments, and for other reasons as determined by the school director.

Authority of the Director

The school director shall have the final authority on issues regarding course selection and granting of credits. This shall include, but not limited to, determination of credits for transfer scholars, exceptions to prerequisites, level changes, and diploma eligibility.

CTRA/Goodwin University Career Pathways

Connecticut River Academy has committed to offering students opportunities in career pathways.

- The Connecticut State Department of Education states that these “empower students to choose the Career and Technical Education (CTE) pathway that can lead to success in their academic and career endeavors.” These pathways connect scholars with the real world by ensuring a relevant link and creating a foundation for the knowledge earned in academic and pathways courses.
- Four of the five pathways are aligned in state and federally recognized clusters in areas of high demand (Business Management and Administration, Health Science, Information Technology, Manufacturing) The Liberal Arts pathway provides an opportunity for students to take college courses while they are still in high school and preparing them for future success in college and careers.



Manufacturing and Engineering Pathway

Pathway Description:

- ◆ **Pathway participants** will begin with Advanced Manufacturing Technology, a class that introduces scholars to the production tools and processes that refine raw materials and turn them into useful products. An exploration of careers, skills, and sub-industries within manufacturing is offered in a collegiate level course, BMM100: Introduction to Manufacturing.
- ◆ **Pathway completers** pass the remaining core manufacturing courses earning collegiate credit from Goodwin University while developing proficiency in blueprint reading, manufacturing math, precision measurement, lean principles, Master CAM & CNC machining. They are awarded an Advanced Placement CNC Machining Certificate by Goodwin University, as well as a certificate from the Department of Labor that is recognized as equivalent to 200 hours towards an industry-level apprenticeship.
- ◆ **Pathway accelerators** will participate in our pre-apprenticeship program, doing paid work in local area manufacturing companies to gain invaluable experience in the industry.



Related Professions/Careers:

- CNC Machine Operator
- Welder
- Quality Assurance
- Fabricator
- Setup Technician
- CADD Technician
- Engineer
- Tool & Die Maker
- EDM Machinist
- Injection Molding Technician
- Mechatronics Technician
- Precision Sheet Metal Fabricator
- Shipfitter

Manufacturing and Engineering Pathway

	Courses	Grade 10	Grade 11	Grade 12	Industry Credential and/or Internship	College Credit
Participant	Advanced Manufacturing Technology	X	X	X		
	BMM100: Introduction to Manufacturing	X	X	X		Goodwin University
Completer	BMM140: Principles of Manufacturing Mathematics		X	X		Goodwin University
	BMM222 Technical Drawings & Specifications		X	X		Goodwin University
	BMM224: Metrology & Calibration		X	X		Goodwin University
	BMM210: Lean Manufacturing			X		Goodwin University
	BMM240: CAM I			X		Goodwin University
	BMM 175: CNC Machining			X	Advanced Placement CNC Machining; Department of Labor Certificate of Completion	Goodwin University
Accelerator	Pre-Apprenticeship			X		

Additional College Credit Opportunities:

(in G11 & G12 at Goodwin University; *G12 only)

- BUS101: Introduction to Management
- ACC110: Applied Accounting*
- BIO101: Concepts in Human Biology
- BUS107: Introduction to Nonprofit Management
- BUS132: Budgeting and Planning
- BUS135: Customer Relations in a Multicultural World
- CAP115: Learning and Working Through Digital Technologies
- ECN110: Principles of Economics
- ENG101: English Composition
- ENG102: Composition & Literature
- HIS112: Tracing the African American Experience
- HIS120: Introduction to Modern World History
- HUM100: Introduction to the Humanities
- PSY112: Introduction to Psychology
- PHIL103: Ethical & Legal Issues
- SOC101: Introduction to Sociology

Clubs & Activities to

Support the Pathway:

- ACE Mentor Program of America

Advanced Manufacturing Courses

C or better required in all BMM courses in order to continue on the Advanced Manufacturing Pathway

Goodwin University Dual Enrolled:

BMM100: Introduction to Manufacturing

1 semester - 0.5 credits - 3 college credits

This course provides a comprehensive introduction to the field of manufacturing. It introduces the student to the structure and operations of the well-running manufacturing organization. The lean production process is described, as well as the controls needed to ensure that high-quality products are manufactured at a competitive cost. The importance of meeting customer requirements is stressed. Functions that support the production process such as Quality Management and Logistics and the Supply Chain are evaluated. The role and importance of the suppliers to the company is explored. The efficient use and maintenance of production equipment is explained. Problem-solving techniques are defined and their usage is described. Several inventory techniques are compared. Interpersonal skills used in leadership, teaming and meetings are emphasized. Advanced manufacturing equipment, processes and techniques are introduced.

Prerequisite: B or better in Foundations of Technology or Teacher Recommendation

Goodwin University Dual Enrolled:

BMM140: Principles in Manufacturing Mathematics

1 semester - 0.5 credits - 3 college credits

This course begins with a review of basic operations of numbers, fractions and decimals. It then covers the practical mathematics that every machinist is expected to use in the shop in the creation of machined parts and maintenance of tools and fixtures. This includes common fraction to decimal and vice-versa conversions, inch to metric and vice-versa conversions, calculating part and feature dimensions and locations, calculating speeds and feeds, calculating tap drill sizes with formulas and charts, converting surface feet per minute to RPM's, calculating tapers for machine set-up, plane geometry calculations, sine bar set-up, measurements of right triangles, angular and simple indexing calculations.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:

BMM175: CNC Machining

1 semester - 0.5 credits - 3 college credits

This course focuses on the modern computer numeric control (CNC) operator. Through the use of interactive virtual simulators students learn the essentials of CNC machining. Participants will learn mill, lathe and grinder set-up and operation; tool identification, set-up, use and maintenance; statistical process control (SPC); and the skills operators need. Students will experience lecture, demonstration, and online simulation to prepare for NIMS certification as a CNC operator.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:

BMM210: Lean Manufacturing Principles

1 semester - 0.5 credits - 3 college credits

This course introduces the student to the philosophical background, historical development, and fundamental concepts of lean manufacturing with a focus on the Toyota Production System. Students explore lean strategies around inventory, lead time, and cultural change requirements.

Students learn strategies for lean implementation, planning, goal setting and sustaining gains. The course also applies to the application of lean disciplines and concepts to service and support industries. The use and implementation of lean disciplines promote continuous improvement, eliminate waste, reduce operating cost, improve quality, and achieve measurable improvement in customer satisfaction.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:

BMM222: Technical Drawings and Specifications

1 semester - 0.5 credits - 3 college credits

This course introduces the basic principles of engineering drawings. It addresses line types, orthographic projection, and isometric views that are used in industry standards. The six basic views of parts are designed to acquaint the student with a pictorial vision of a 3D part in a flat pattern view. Areas of study include: line types, orthographic projection, isometric views, fundamental tools of title block information, drawing standards, general and special notes such as quality assurance data, non-destructive testing, symbology, geometric dimensioning and tolerancing parameters, blueprint drawing abbreviations, linear units of measurement, rules of dimensioning, inclined surfaces, measurement of angles, holes and bolt hole patterns, drawings to scale, blueprint revisions and notes. Upon completion, students should be able to interpret basic prints and visualize the features of a part or system.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:

BMM224: Metrology and Calibration

1 semester - 0.5 credits - 3 college credits

This course focuses on how to develop, implement, and maintain a calibration system. Evaluation of the calibration program is further deepened through continuous improvement efforts. Conformity to ISO 9001 requirements enhances the credibility of calibration systems to ensure reliability and traceability. This course looks at calibration processes such as calibration procedures and records, out of tolerance conditions, calibration schedules and intervals. Students will learn and practice techniques for setting size blocks to predetermined distances to measure product, develop continuous improvement programs, create training programs and audit the calibration system.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:

BMM240: CAM 1

1 semester - 0.5 credits - 3 college credits

The purpose of this course is to review design and manufacturing software and instruct the student on feature-based modeling systems called SolidWorks and Mastercam. Students will learn how to create simple 2-D objects such as lines and arcs to create CAD solid models and add numerical dimensions and geometries. After CAD Models are created in SolidWorks, the files will be loaded into Computer-Aided Manufacturing (CAM) Mastercam for CNC programming.

Prerequisite: BMM100: Introduction to Manufacturing

Advanced Manufacturing Technology (AMT) (formerly Exploring Manufacturing Technology)

1 semester - 0.5 credits

Do you like to "make" things? Take a Do It Yourself (DIY) approach to creating everyday products using a variety of materials (wood, metal, plastic) to explore the world of manufacturing and what it takes to create products. Scholars explore advanced manufacturing and mechatronics with an emphasis in safety, systems and processes, and career paths.

Prerequisite: B or better in Foundations of Technology

Foundations of Technology

1 semester - 0.5 credits

This course provides the foundation for students to understand and apply technological concepts and processes. Group and individual activities engage students in creating ideas, developing innovations, and engineering practical solutions. Technology content, resources, and laboratory activities encourage student applications. The knowledge and skills acquired and practiced will enable students to successfully perform and interact in a technology-driven society.

Required for Grade 9

Introduction to Manufacturing Technology

1 semester - 0.5 credits

Do you like to “make” things? Take a Do It Yourself (DIY) approach to creating everyday products using a variety of materials (wood, metal, plastic, textiles, electronics) to explore the world of manufacturing and what it takes to create products. Scholars explore manufacturing and advanced manufacturing with an emphasis in safety, systems and processes, and career paths.



Connecticut River Academy's Business Administration Pathway

Pathway Description:

- ◆ **Pathway participants** will begin with an exploration of personal finance management. By exploring the Connecticut State Personal Finance Competencies, participants discover personal, national, and global financial planning. Emphasis is also placed on the role of ethics, corporate social responsibility, and public policy in relation to running and/or operating a business.
- ◆ **Pathway completers** pass all of the core remaining courses earning collegiate credit from Goodwin University while developing proficiency in management, entrepreneurship, accounting, and business law & ethics. They are awarded an 18-credit Business Startup Certificate by Goodwin University.
- ◆ **Pathway accelerators** will participate in one of our business-related work experiences. Our business-related work experiences include several programs in partnership with Junior Achievement as well as our student-run store.



Related Professions/Careers:

- Project Manager
- Accountant
- Sales Manager
- Human Resources Specialist
- Customer Services Specialist
- Financial Planner
- Marketing
- Small Business Owner
- Administrative Services Manager
- Financial Analyst
- Market Research Analyst
- Loan Officer
- Event Planner
- Real Estate Agent
- Purchasing Agent
- Insurance Underwriter
- Actuarial Scientist

Business Administration Pathway

	Courses	Grade 10	Grade 11	Grade 12	Industry Credential and/or Internship	College Credit
Participant	Intro to Business	X	X	X		
	BUS121: Personal Finance & Insurance	X	X	X		Goodwin University
Completer	BUS101: Introduction to Management		X	X		Goodwin University
	BUS150: Small Business & Entrepreneurship		X	X		Goodwin University
	BUS215: Marketing			X		Goodwin University
	BUS110: Business Law & Ethics			X		Goodwin University
	ACC110: Applied Accounting			X	Goodwin University Business Startup Certificate	Goodwin University
Accelerator	Work-Based Learning			X		

Additional College Credit Opportunities:

(in G11 & G12 at Goodwin University)

- BIO101: Concepts in Human Biology
- BIO120: Human Biology
- BUS107: Introduction to Nonprofit Management
- BUS132: Budgeting and Planning
- BUS135: Customer Relations in a Multicultural World
- CAP115: Learning and Working Through Digital Technologies
- ECN110: Principles of Economics

- ENG101: English Composition
- ENG102: Composition & Literature
- HIS112: Tracing the African American Experience
- HIS120: Introduction to Modern World History
- HUM100: Introduction to Humanities
- PSY112: Introduction to Psychology
- PHIL103: Ethical & Legal Issues
- SOC101: Introduction to Sociology

Clubs & Activities to Support the Pathway:

- DECA
- Junior Achievement Program: Tech 4 Sustainable Futures (The Hartford); Entrepreneurial Academy (Pratt & Whitney)
- Fintron Challenge

Business and Entrepreneurship Courses

Exploring Business

1 semester - 0.5 credits

This course provides opportunities to learn and experience a variety of topics in the field of business. Students are exposed to various economies, their roles in our economy, entrepreneurship, marketing, managing financial and technological resources, and the use of social media. Course activities involve students in writing, investigating, problem-solving, demonstrating, and reporting. Instructional strategies may include the development of a business plan, product, computer/technology applications, real and/or simulated occupational experiences, or projects related to business ownership.

Prerequisite: Personal Finance

Personal Finance

1 semester - 0.5 credits

Understanding and managing personal finances are key to one's future financial success. This course is based on Connecticut Personal Finance Competencies and presents essential knowledge and skills to make informed decisions about real world financial issues. Students will learn how choices influence occupational options and future earning potential. Students will also learn to apply decision-making skills to evaluate career choices and set personal goals. The course content is designed to help the learner make wise spending, saving, and credit decisions and to make effective use of income to achieve personal financial success.

Goodwin University Dual Enrolled:

BUS215: Marketing

1 semester - 0.5 credits - 3 college credits

This course examines marketing principles, strategies, and methods practiced by modern businesses and organizations including product/service distribution, promotion, and pricing. Topics include: evaluating market opportunities; buyer behavior; market segmentation, targeting and positioning; market strategy and planning; development of marketing mix; and marketing organization and control. The role of ethics, corporate social responsibility, and public policy that are intrinsic to marketing efforts will also be explored.

Goodwin University Dual Enrolled:

BUS101: Introduction to Management

1 semester - 0.5 credits - 3 college credits

This course provides an introduction to the basic principles of management and their relationship to customer expectations. An overview of major topics and concepts including planning and decision making, organization, staffing and leading, Information Systems, and ethics and social responsibility will be covered.

Prerequisite: B or better in Personal Finance or English 101 or teacher recommendation.

Goodwin University Dual Enrolled:

BUS150: Small Business and Entrepreneurship

1 semester (fall) - 0.5 credits - 3 college credits

This course will provide an introduction to exploring fundamental business principles with an emphasis on a practical approach to the entrepreneurial process and the skills for starting a small business. The course will include studying ethics, the global environment, forms of business ownership, starting a small business, an

entrepreneur's acquisition of capital, small business management, networking, and managing financial resources. The course further explores issues with franchising and other business opportunities.

Prerequisite: B or better in Business 101 or teacher recommendation.

Goodwin University Dual Enrolled:

ACC 110: Applied Accounting

1 semester (spring) - 0.5 credits - 3 college credits

This course is designed to introduce the basic principles of accounting analysis to the non-accounting major. Focusing on the knowledge and skills a manager needs to understand standard financial documents produced by accountants, students will develop an understanding of financial topics including current assets, plant assets, depreciation and the amortization of intangible assets. This course will also discuss accounts receivables, payables, inventory and cost of goods sold. Students will prepare and perform analysis of financial statements. Financial ratios will be introduced as an integrated analysis tool. Students will learn to read and understand an annual report.



Connecticut River Academy's Computer Science Pathway

Pathway Description:

- ◆ **Pathway participants** begin by exploring introductory concepts in coding and robotics. This includes developing programming skills in Python and Vex Robotics.
- ◆ **Pathway completers** pass all of the remaining core Computer Science courses, earning AP Credit while developing proficiency in algorithms, the Internet, big data, digital privacy and security and the societal impacts of computing as well as programming in Scratch, Python, and Java. In addition, pathway participants have the ability to earn industry-recognized Microsoft and/or CompTIA Certifications.
- ◆ **Pathway accelerators** will participate in our Computer Science work-based learning program. This includes several programs in partnership with Junior Achievement as well as various of job shadowing and internship opportunities.



Related Professions/Careers:

- Software developer
- Database Administrator
- Web Developer
- Systems Analyst
- Data Analyst
- Computer Hardware Engineer
- Network Architect
- Application Developer
- Computer programmer
- UX Designer
- Games Developer
- Machine Learning Engineer
- Computer and Information Systems Manager
- IT Technician
- Programmer Analyst
- Software Tester
- Business Analyst
- Web Designer
- Computer Forensics

Computer Science Pathway

	Courses	Grade 10	Grade 11	Grade 12	Industry Credential and/or Internship	College Credit
Participant	Introduction to Computer Science & Robotics	X	X	X		
	Advanced Computer Science & Robotics	X	X	X		
Completer	AP Computer Science Principles	X	X	X		
	AP Computer Science Advanced		X	X		College Transferable
	Microsoft Certifications		X	X	X	College Transferable
Accelerator	Work-Based Learning			X		

Additional College Credit Opportunities: (in G11 & G12 at Goodwin University)

- BUS101: Introduction to Management
- ACC110: Applied Accounting
- BIO101: Concepts in Human Biology
- BUS107: Introduction to Nonprofit Management
- BUS132: Budgeting and Planning
- BUS135: Customer Relations in a Multicultural World
- CAP115: Learning and Working Through Digital Technologies
- ECN110: Principles of Economics
- ENG101: English Composition
- ENG102: Composition & Literature
- HIS112: Tracing the African American Experiences
- HIS120: Introduction to Modern World History
- HUM100: Introduction to the Humanities
- PSY112: Introduction to Psychology
- PHIL103: Ethical & Legal Issues
- SOC101: Introduction to Sociology

Clubs & Activities to Support the Pathway:

- Girls Who Code
- Junior Achievement: Tech 4 Sustainable Futures

Computer Science Courses

Advanced Computer Science and Robotics Principles

1 semester (spring) - 0.5 credits

This advanced course in computer science, programming, and robotics challenges students to expand on their skills from the introductory course and apply them to solving complex STEM based problems. This half-year course is divided into halves, with equal time devoted to computer science and robotics. Students will learn the advanced concepts of writing code, building upon their experiences with Python. They will do hands-on work to design, write, and test computer programs in Python that solve problems or accomplish tasks. Students will learn to design a program, developing the algorithms it needs and writing the code to implement them.

Students will also spend time building and programming VEX robots to perform various tasks and rely on sensor technology. Students will have the opportunity to learn advanced programming required to program autonomous mobile robots to achieve challenging tasks.

Prerequisite: Introduction to Computer Science and Robotics Principles

AP Computer Science A

1 year - 1 credit

In this college- level computer course, students will become familiar with the concepts and tools of computer science as they learn a subset of the Java programming language. The course emphasizes both object-oriented and imperative problem solving and design using the Java programming language. They will do hands-on work to design, write, and test computer programs that solve problems or accomplish tasks. Students design a program, develop the algorithms needed, and write code to implement the program. Students will then test the code and document and explain how the code works. These techniques represent proven approaches for development solutions that can scale up from small, simple problems to large, complex problems.

Prerequisite: B or better in Introduction to Computer Science and Robotics Principles, AP Computer Science Principles or teacher recommendation, summer work completion.

AP Computer Science Principles

1 year - 1 credit

IAP Computer Science Principles is an introductory college-level computing course that introduces students to the breadth of the field of computer science. It is a full-year, rigorous course that introduces students to the foundational concepts of computer science and explores the impact computing and technology have on our society. The course covers a broad range of foundational topics including: programming, algorithms, the Internet, big data, digital privacy and security, and the societal impacts of computing. Students learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs. The coding languages Scratch and Python are both used in this course. Scratch is a free block-based programming environment that is accessible enough for beginners, yet can support the development of advanced algorithms used in more complex games and applications. Python is a text-based language with easy to read and write syntax - perfect for beginning programmers.

Prerequisite: B or better in Introduction to Computer Science and Robotics, teacher recommendation, summer work completion.

Computer Science and Robotics Principles

1 semester (fall) - 0.5 credits

IAP Computer Science Principles is an introductory college-level computing course that introduces students to the breadth of the field of computer science. It is a full-year, rigorous course that introduces students to the

foundational concepts of computer science and explores the impact computing and technology have on our society. The course covers a broad range of foundational topics including: programming, algorithms, the Internet, big data, digital privacy and security, and the societal impacts of computing. Students learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs. The coding languages Scratch and Python are both used in this course. Scratch is a free block-based programming environment that is accessible enough for beginners, yet can support the development of advanced algorithms used in more complex games and applications. Python is a text-based language with easy to read and write syntax - perfect for beginning programmers.

Foundations of Technology

1 semester - 0.5 credits

In this introductory course, students will learn the foundations of advanced manufacturing technologies and CAD skills with an emphasis in safety, systems and processes, and career paths. Students will learn hands-on approach to constructing and programming autonomous mobile robots using VEX Robotics and also foundations of computer science and basic programming, with an emphasis on helping students develop logical thinking and problem-solving skills. The knowledge and skills acquired and practiced will enable students to successfully perform and interact in a technology-driven society. By the completion of this course, students will have the opportunity to use more specialized computing systems and digital tools and develop an appreciation for the capabilities and capacities of technology in civic, college, and career contexts.

Required for Grade 9

Computer Science (CS) Certificate

1 semester - 0.5 credits

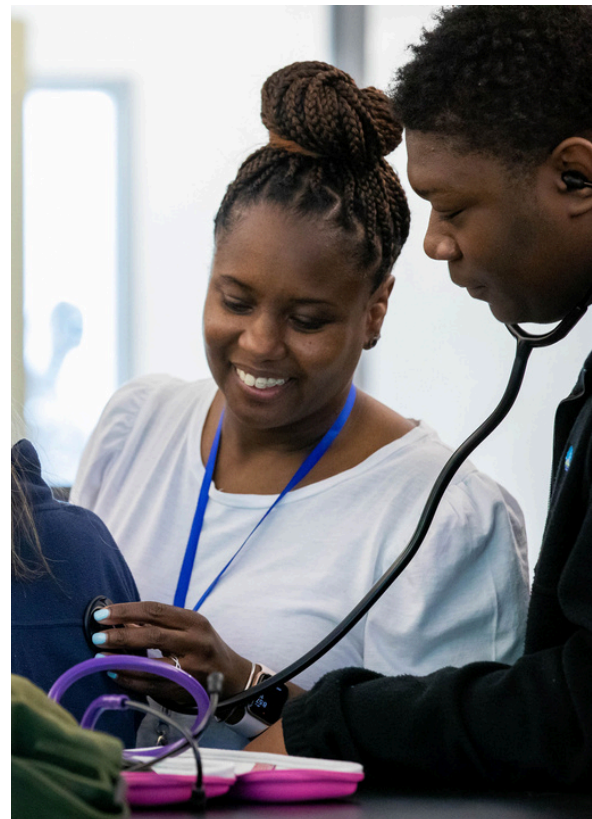
In this course, scholars have the opportunity to earn a CompTIA A+ certification. This certification is the industry standard for launching IT careers into today's digital world and appears in more tech support job listings than any other IT credential. In the course, scholars will think on their feet to perform critical IT tasks to support today's core technologies from security to networking to virtualization and more. Topics and skills covered include Software as a Service (SaaS), diagnosing and correcting software, hardware, and connectivity problems, data management, operating systems, and more.



Connecticut River Academy's Health Sciences and Nursing Pathway

Pathway Description:

- ◆ **Pathway participants** will begin with an introduction to healthcare that centers on fundamental concept development related to the industry. Medical ethics & terminology, measurement of vital signs, anatomy & physiology, infection prevention & control, standard precautions, and patient social-emotional care are explored. Participants also earn a CPR Certificate awarded by Goodwin University Magnet Schools.
- ◆ **Pathway completers** pass all of the remaining core courses earning collegiate credit through Goodwin University and developing proficiency in medical terminology, human biology, and medical careers.
- ◆ **Pathway accelerators** will apply, be accepted into, and participate in one of our work-based learning programs. These include a Certified Nursing Assisting program consisting of 125 hours of classroom and clinical experiences in collaboration with a local long-term care facility, or a home health aide program consisting of helping local area citizens age in place.



Related Professions/Careers:

- Physician/doctor
- Surgeon
- Nurse
- Physician's Assistant
- Respiratory Therapist
- Occupational Therapist
- Physical Therapist
- Dental Hygienist
- Medical Billing & Coding
- Medical Assistant

Health Sciences and Nursing Pathway

	Courses	Grade 10	Grade 11	Grade 12	Industry Credential and/or Internship	College Credit
Participant	HSC101: Introduction to Healthcare	X	X	X	CPR Certification	Goodwin University
Completer	BIO120: Human Biology	X	X	X		Goodwin University
	HSC105: Medical Terminology		X	X		Goodwin University
	HSC216: Exploration of Careers in Healthcare		X	X		Goodwin University
Accelerator	Certified Nursing Assisting Program		X	X	CNA Certification	
	Home Health Aide Program		X	X		

Additional College Credit Opportunities: (in G11 & G12 at Goodwin University)

- ENG101: English Composition
- ENG102: Composition & Literature
- HIS 112: Tracing the African American Experiences
- HIS120 Introduction to Modern World History
- HUM100: Introduction to the Humanities
- PHIL 103: Ethical & Legal Issues
- PSY112: Introduction to Psychology
- SOC101: Introduction to Sociology

Clubs & Activities to Support the Pathway

- Health Occupations
- Students of America (HOSA)

Continuing education opportunities outside the classroom with CTRA partners: (in G11 & G12)

- Certified Nurses Aide (CNA) Program (Must be 16 years old)
- Home Health Aide Program (Must be 16 years old)

Health Sciences and Nursing Courses

Certified Nursing Assistant Course (CNA)

1 year - 2 credits

The Certified Nursing Assistant program prepares high school scholars for employment in a healthcare setting through simulated and real-world experience. In doing so, scholars will complete a state-mandated minimum of one hundred and twenty-five hours of classroom and sixty hours of clinical experience. By integrating science, mathematics, and language arts with nursing theory and practice, this learning environment helps scholars develop the attitudes, competencies, skills, and practical exposure they will need in pursuit of Allied Health careers. In culmination of the development of these career entry skills, students will attain the ability to be fully-employed as state certified nursing assistants.

Prerequisite: B or better in Introduction to Healthcare and teacher recommendation.

HSC101: Introduction to Healthcare

1 year - 1 credit

This course serves as an introduction and gateway for scholars interested in pursuing career pathways in healthcare. As such, scholars will explore topics including medical ethics, terminology, measurement of vital signs, structure and function of the human body, infection control, and standard precautions. Students also explore all five health career pathways: Therapeutic Services, Diagnostic Services, Health Informatics, Support Services and Biotechnology Research and Development. Students will demonstrate their learning in patient care simulations in the lab, by analyzing a variety of ethical dilemmas and by working with models of human body systems. This course is strongly recommended for those students who are interested in exploring career opportunities in Allied Health. Students enrolled in this course will be given preference for acceptance into the Certified Nursing Assistant Program, where they will have the opportunity to apply their learning in a clinical setting.

Goodwin University Dual Enrolled: HSC105: Medical Terminology

1 semester - 0.5 credits

This course teaches medical terminology through the presentation of root words, prefixes, and suffixes. Correct spelling and pronunciation of these terms is stressed throughout. Introduction to common medical abbreviations, symbols and body systems will also be presented.

Phlebotomy

1 semester - 0.5 credits

Introduction to the practice of phlebotomy and laboratory safety. Pre-analytical, analytical and post analytical components of laboratory service. Introduction to the principle and practice of quality assurance and quality improvement.

Goodwin University Dual Enrolled: HSC 111: Medical Law and Ethics

1 semester - 0.5 credits

This course addresses medical ethics, medical practice acts, legal responsibilities of the health professional, professional liability, and the civic duties of the health professional. The class makes use of the Internet, newspapers and other publications for the discussion of current events related to medical law and ethics.

Liberal Arts Courses

Goodwin University Dual Enrolled:

COM101: Public Speaking

1 semester - 0.5 credits - 3 college credits

This course is designed to develop public speaking and listening skills so that students may become more effective communicators. Students will learn research techniques and how to organize, deliver, and adapt their message to an audience. They prepare and deliver several major speeches. Students also apply interviewing and group discussion techniques.

Prerequisite: 85 or better in College Prep English.

Goodwin University Dual Enrolled:

ENG101: English Composition

1 semester - 0.5 credits - 3 college credits

Designed to develop clear and effective college-level writing, course has a strong emphasis on the composing process including topic selection, drafting, editing, and proofreading of final drafts. Focus is on organization of ideas, effective sentence and paragraph structure, grammar and its usage. Scholars will learn the techniques for writing major essays and research papers.

Prerequisite: 85 or better in College Prep English or Pre AP English.

Goodwin University Dual Enrolled:

ENG102: Composition and Literature

1 semester - 0.5 credits - 3 college credits

This half-year course provides additional composition skill building. Scholars are required to write extensively on topics related to various genres of serious literature and are expected to explain and support their ideas in writing. Focus is on learning how to read, interpret, and critically analyze literary selections.

Prerequisite: 85 or better in ENG101: English Composition.

Goodwin University Dual Enrolled:

ENG240: The American Short Story

1 semester - 0.5 credits - 3 college credits

This course focuses on the American short story through an historical perspective. Students will evaluate short stories considering social themes that reflect cultural shifts, national movements, and the changing identity of the American nation. Students will also learn the elements of short story development, author strategies for building suspense and action, and literary devices that make this writing form profound. Finally, students will compose essays and discussion responses that draw on theoretical models of close reading. Selected authors may include: Irving, Poe, Hawthorne, Ellison, Hughes, Jackson, Welty, Oates, and Diaz.

Prerequisite: B or better in ENG 102: Composition and Literature

Goodwin University Dual Enrolled:

PHIL103: Ethical & Legal Issues

1 semester - 0.5 credits - 3 college credits

This course addresses both ethical theory and contemporary controversial issues that confront students and citizens today through readings and essays on current issues, such as euthanasia, abortion, sexual morality, equality, economic justice, the environment, and ethical considerations in science and technology.

Prerequisite: B or better in ENG101: English Composition

Dual Enrolled Classes

Goodwin University Dual Enrolled:

BMM100: Introduction to Manufacturing

1 semester - 0.5 credits - 3 college credits

This course provides a comprehensive introduction to the field of manufacturing. It introduces the student to the structure and operations of the well-running manufacturing organization. The lean production process is described, as well as the controls needed to ensure that high-quality products are manufactured at a competitive cost. The importance of meeting customer requirements is stressed. Functions that support the production process such as Quality Management and Logistics and the Supply Chain are evaluated. The role and importance of the suppliers to the company is explored. The efficient use and maintenance of production equipment is explained. Problem-solving techniques are defined and their usage is described. Several inventory techniques are compared. Interpersonal skills used in leadership, teaming and meetings are emphasized. Advanced manufacturing equipment, processes and techniques are introduced.

Prerequisite: B or better in Foundations of Technology or Teacher Recommendation

Goodwin University Dual Enrolled:

BMM140: Principles in Manufacturing Mathematics

1 semester - 0.5 credits - 3 college credits

This course begins with a review of basic operations of numbers, fractions and decimals. It then covers the practical mathematics that every machinist is expected to use in the shop in the creation of machined parts and maintenance of tools and fixtures. This includes common fraction to decimal and vice-versa conversions, inch to metric and vice-versa conversions, calculating part and feature dimensions and locations, calculating speeds and feeds, calculating tap drill sizes with formulas and charts, converting surface feet per minute to RPM's, calculating tapers for machine set-up, plane geometry calculations, sine bar set-up, measurements of right triangles, angular and simple indexing calculations.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:

BMM151: Welding Safety

Offered in Fall 2025 - 1 semester - 0.5 credits - 3 college credits

The Welding Safety course includes fundamental process of safety, creating a safe weld environment, thinking in 3 dimensions, and the safe use of tools & equipment as well various shop safety practices related to the welding industry and fabrication environments.

Goodwin University Dual Enrolled:

BMM153: Welding Principles

Offered in Fall 2025 - 1 semester - 0.5 credits - 3 college credits

This course introduces students to basic weld principles including various welding types, techniques, properties, weld standards, certification process, visual inspection plans, testing methods and trouble shooting. Students learn preparation and fit-up various welding joints, weld positions, weld symbols, classification of materials, material science involved when welding, and mechanical properties associated in welding. Prerequisite: BMM 151

Goodwin University Dual Enrolled:
BMM155: Welding Fabrication

Offered in Fall 2025 - 1 semester - 0.5 credits - 3 college credits

This course introduces students to basic weld shop fabrication practices including various welding plans, blueprints, organization and coordination necessary for safe welding shop work practice. This includes the ongoing CONTation of Workshop Process Sheet (WPS) practices, the development of material lists, consumables and weld fabricate projects per WPS and competency based lab exercises. Project based lessons that include weld repairs and new fabrication projects provide for increased development of welding skills and techniques.

Prerequisite: BMM 151, BMM 153

Goodwin University Dual Enrolled:
BMM157: Thermal Cutting

Offered in Fall 2025 - 1 semester - 0.5 credits - 3 college credits

This course in thermal cutting involves various process methods in which to cut, shape and partition fabricated components including fundamentals, techniques, safe use of equipment as well various lab activities. Methods in this course include use of plasma arc cutting, oxygen fuel cutting (OFC) and use of computerized numerical control (CNC) table to cut sheet and plate materials with plasma arc.

Prerequisite: BMM 151, BMM 153, BMM 155

Goodwin University Dual Enrolled:
BMM175: CNC Machining

1 semester - 0.5 credits - 3 college credits

This course focuses on the modern computer numeric control (CNC) operator. Through the use of interactive virtual simulators students learn the essentials of CNC machining. Participants will learn mill, lathe and grinder set-up and operation; tool identification, set-up, use and maintenance; statistical process control (SPC); and the skills operators need. Students will experience lecture, demonstration, and online simulation to prepare for NIMS certification as a CNC operator.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:
BMM210: Lean Manufacturing Principles

1 semester - 0.5 credits - 3 college credits

This course introduces the student to the philosophical background, historical development, and fundamental concepts of lean manufacturing with a focus on the Toyota Production System. Students explore lean strategies around inventory, lead time, and cultural change requirements. Students learn strategies for lean implementation, planning, goal setting and sustaining gains. The course also applies to the application of lean disciplines and concepts to service and support industries. The use and implementation of lean disciplines promote continuous improvement, eliminate waste, reduce operating cost, improve quality, and achieve measurable improvement in customer satisfaction.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:
BMM220: Materials and Processes in Manufacturing

1 semester - 0.5 credits - 3 college credits

Students are provided with essential information on material properties, material behaviors and material manufacturing processes. The atomic, crystal, grain and defect structure will be introduced, and their effect on the mechanical properties of materials will be presented.

Equilibrium phase diagrams will be discussed. An understanding of the properties of iron alloys and steels will be developed. Material processing techniques such as heat treatment, casting, metal forming, welding, coatings and adhesive bonding will be covered. Powder metallurgy processing and material processes will be introduced along with a brief introduction to non-destructive test (NDT) methods.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:

BMM222: Technical Drawings and Specifications

1 semester - 0.5 credits - 3 college credits

This course introduces the basic principles of engineering drawings. It addresses line types, orthographic projection, and isometric views that are used in industry standards. The six basic views of parts are designed to acquaint the student with a pictorial vision of a 3D part in a flat pattern view. Areas of study include: line types, orthographic projection, isometric views, fundamental tools of title block information, drawing standards, general and special notes such as quality assurance data, non-destructive testing, symbology, geometric dimensioning and tolerancing parameters, blueprint drawing abbreviations, linear units of measurement, rules of dimensioning, inclined surfaces, measurement of angles, holes and bolt hole patterns, drawings to scale, blueprint revisions and notes. Upon completion, students should be able to interpret basic prints and visualize the features of a part or system.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:

BMM224: Metrology and Calibration

1 semester - 0.5 credits - 3 college credits

This course focuses on how to develop, implement, and maintain a calibration system. Evaluation of the calibration program is further deepened through continuous improvement efforts. Conformity to ISO 9001 requirements enhances the credibility of calibration systems to ensure reliability and traceability. This course looks at calibration processes such as calibration procedures and records, out of tolerance conditions, calibration schedules and intervals. Students will learn and practice techniques for setting size blocks to predetermined distances to measure product, develop continuous improvement programs, create training programs and audit the calibration system.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:

BMM240: CAM I

1 semester - 0.5 credits - 3 college credits

The purpose of this course is to review design and manufacturing software and instruct the student on feature-based modeling systems called SolidWorks and Mastercam. Students will learn how to create simple 2-D objects such as lines and arcs to create CAD solid models and add numerical dimensions and geometries. After CAD Models are created in SolidWorks, the files will be loaded into Computer-Aided Manufacturing (CAM) Mastercam for CNC programming.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:

BMM252: Introduction to Shielded Metal

Offered in Spring 2026 - 1 semester - 0.5 credits - 3 college credits

This is an introductory course to Shielded Metal Arc Welding (SMAW). Participants will learn the process fundamentals, techniques, safe use of tools & equipment as well various lab weld activities, positions, joints types and materials.

Course techniques include proper set up of SMAW equipment and learn proper electrode selections for various welding applications. Participants also learn to troubleshoot, identify and correct weld disCONTities and produce sound welds.

Prerequisite: BMM 151, BMM 153, BMM 155

Goodwin University Dual Enrolled:

BMM254: Introduction to Flux Arc Welding

Offered in Spring 2026 - 1 semester - 0.5 credits - 3 college credits

The purpose of this course is to review design and manufacturing software and instruct the student on feature-based modeling systems called SolidWorks and Mastercam. Students will learn how to create simple 2-D objects such as lines and arcs to create CAD solid models and add numerical dimensions and geometries. After CAD Models are created in SolidWorks, the files will be loaded into Computer-Aided Manufacturing (CAM) Mastercam for CNC programming.

Prerequisite: BMM100: Introduction to Manufacturing

Goodwin University Dual Enrolled:

BMM256: Introduction to Gas Tungsten

Offered in Spring 2026 - 1 semester - 0.5 credits - 3 college credits

This course is an introduction to gas tungsten metal arc welding (GTAW), also known in shop terms as tungsten inert gas welding or (TIG) welding. Students develop competencies that include GTAW process fundamentals, techniques, safe use of tools & equipment as well various lab weld activities, positions, joints types and materials while using GTAW. This course includes joining various metals types as well as joining sheet, plate and pipe. Non Destructive Testing (NDT) and destructive testing are used to ascertain proper weld techniques and conformance to Weld Procedure sheets WPS.

Prerequisite: BMM 151, BMM 153, BMM 155

Goodwin University Dual Enrolled:

BMM258: Introduction to Gas Metal Arc

Offered in Spring 2026 - 1 semester - 0.5 credits - 3 college credits

This course is an introduction to Gas Metal Arc Welding (GMAW) or more commonly known as Metal Inert Gas Welding (MIG). Competencies developed include process fundamentals, techniques, safe use of tools & equipment as well various lab weld activities, positions, joints types and materials while using MIG. Students develop basic and more advanced skills in gas metal arc welding and adherence to weld procedure sheets using multiple skill based projects.

Prerequisite: BMM 151, BMM 153, BMM 155

Goodwin University Dual Enrolled:

BUS101: Introduction to Management

1 semester - 0.5 credits - 3 college credits

This course provides an introduction to the basic principles of management and their relationship to customer expectations. An overview of major topics and concepts including planning and decision making, organization, staffing and leading, Information Systems, and ethics and social responsibility will be covered.

Prerequisite: B or better in Personal Finance or English 101 or teacher recommendation.

Goodwin University Dual Enrolled:
BUS150: Small Business and Entrepreneurship

1 semester (fall) - 0.5 credits - 3 college credits

This course will provide an introduction to exploring fundamental business principles with an emphasis on a practical approach to the entrepreneurial process and the skills for starting a small business. The course will include studying ethics, the global environment, forms of business ownership, starting a small business, an

Goodwin University Dual Enrolled:
COM101: Public Speaking

1 semester (fall) - 0.5 credits - 3 college credits

This course is designed to develop public speaking and listening skills so that students may become more effective communicators. Students will learn research techniques and how to organize, deliver, and adapt their message to an audience. They prepare and deliver several major speeches. Students also apply interviewing and group discussion techniques.

Prerequisite: 85 or better in College Prep English

Goodwin University Dual Enrolled:
ENG101: English Composition

1 semester - 0.5 credits - 3 college credits

Designed to develop clear and effective college-level writing, course has a strong emphasis on the composing process including topic selection, drafting, editing, and proofreading of final drafts. Focus is on organization of ideas, effective sentence and paragraph structure, grammar and its usage. Scholars will learn the techniques for writing major essays and research papers.

Prerequisite: 85 or better in College Prep English or Pre AP English.

Goodwin University Dual Enrolled:
ENG102: Composition and Literature

1 semester - 0.5 credits - 3 college credits

This half-year course provides additional composition skill building. Scholars are required to write extensively on topics related to various genres of serious literature and are expected to explain and support their ideas in writing. Focus is on learning how to read, interpret, and critically analyze literary selections.

Prerequisite: 85 or better in ENG101: English Composition.

Goodwin University Dual Enrolled:
ENG240: The American Short Story

1 semester - 0.5 credits - 3 college credits

This course focuses on the American short story through an historical perspective. Students will evaluate short stories considering social themes that reflect cultural shifts, national movements, and the changing identity of the American nation. Students will also learn the elements of short story development, author strategies for building suspense and action, and literary devices that make this writing form profound. Finally, students will compose essays and discussion responses that draw on theoretical models of close reading. Selected authors may include: Irving, Poe, Hawthorne, Ellison, Hughes, Jackson, Welty, Oates, and Diaz.

Prerequisite: B or better in ENG 102: Composition and Literature

Goodwin University Dual Enrolled:
HUM100: Introduction to the Humanities

1 semester - 0.5 credits - 3 college credits

This course provides a multi-disciplinary introduction to a global view of the arts and humanities. The emphasis of the course is on the interaction of art, poetry, literature, philosophy, music, and dance with the social issues of all cultures considered.

Prerequisite: 85 or better in ENG 101

Goodwin University Dual Enrolled:
MATH254: Introductory Calculus

1 semester - 0.5 credits - 4 college credits

This is a Goodwin University/CTRA dual credit course for scholars who are interested in continuing their study of advanced mathematics. It is especially appropriate for those interested in any of the math-related fields including

Goodwin University Dual Enrolled:
PHIL103: Ethical & Legal Issues

1 semester - 0.5 credits - 3 college credits

This course addresses both ethical theory and contemporary controversial issues that confront students and citizens today through readings and essays on current issues, such as euthanasia, abortion, sexual morality, equality, economic justice, the environment, and ethical considerations in science and technology.

Prerequisite: B or better in ENG101: English Composition

Goodwin University Dual Enrolled:
PSY112: Introduction to Psychology

1 semester - 0.5 credits - 4 college credits

This course introduces the fundamental concepts of psychology, including physiological psychology, neuropsychological principles, sensation and perception, cognition, learning, child and adult development, social psychology, personality, and abnormal psychology. Scholars will focus on understanding human behavior and its application to everyday life.

Prerequisite: English 101

Art Foundations

1 semester - 0.5 credits

Art Foundations is an introduction to two and three-dimensional art focused on the design process. Students learn to use the elements of art and principles of design to explore various media in the areas of drawing, painting and sculpture. Composition, technique, skillful handling of tools and creative interpretation of assignments are emphasized. Students will respond to historical and contemporary artwork and participate in critiques of their own and peer work.

Digital Photography

1 semester - 0.5 credits

Digital Photography is an entry level course for students to explore the creative and technical side of photography. Students will learn how to navigate Nikon dslr camera settings and related camera equipment, how to plan composition and edit to further enhance photos. This class requires collaboration in the creation of photos, presentations and critiques. Students will create a photography portfolio of their photos and concepts learned to showcase their work.

Drawing

1 semester - 0.5 credits

Drawing concepts will be introduced with a strong emphasis on techniques to improve a student's skill level. Students will learn to apply the elements of art and principles of design with observation skills to develop accurate and quality compositions in a realistic approach. Students will respond and write about historical and contemporary artwork, participate in critiques of peer work, and reflect on their learning and growth as an artist.

Prerequisite: Art Foundations

Recycle Art

1 semester - 0.5 credits

Recycle Art focuses on the exploration of ideas, materials, and a variety of art concepts that include the elements of art and the principles of design. Scholars will use the design process to repurpose materials and create innovative art by looking at trash and everyday objects in different and inventive ways. Scholars will research and respond to art created from a variety of materials to further their understanding of trash and repurposing as an art form.

Prerequisite: Art Foundations

Capstone

1 year - 1 credit

In this full year course, scholars will create a body of work that examines an area of interest in depth through studies, reflections, and a culminating exhibition within the CTRA community. A scholar statement that defines the intent and new learning throughout the process will be included as part of the exhibition. Scholars will also write in a variety of modes including literature analysis, personal reflection, and research essays.

Required for Grade 12

Pre-Apprenticeship

1 semester

The pre-apprenticeship program will allow scholars to participate in on-site career training as they transition from school to career and/or higher education. Scholars in this program will be interviewed and, upon selection, employed for real, part-time work in local area industries. In partnership with the CT State Department of Labor, the intent of this course is to provide real world experience to scholars, helping them make natural connections, with the hope of transitioning to a long-term relationship, post-graduation. Pre-apprentices are not required to provide their own transportation to and from the work site in order to participate.

Prerequisite: Successful completion of manufacturing, computer, business pathway.

ENG 9: Self and Global Awareness

1 year - 1 credit

The content of this course centers on the themes of Self, Society, and Diversity; it enables scholars the ability to explore who they are as individuals, how they are part of a global society, and the lifestyle, cultures, traditions and experiences of others. Scholars will broaden their understanding of multicultural literature by drawing upon personal experiences, discussions, and presentations as they expand their understanding of our diverse society. Scholars will create original pieces of writing by identifying and analyzing various works of literature. Scholars will develop an awareness of the relationship between life and literary experience while completing all objectives of grade 9.

Required for Grade 9.

ENG 10: Taking Action

Offered in Fall 2025 - 1 semester - 0.5 credits

The content of this course centers on the theme of Taking Action and encourages scholars to examine the ideas, experiences, and points of view presented in various multicultural texts in relation to their personal views. Through the exploration of culturally diverse literature, scholars will examine the various roles that literature plays in society and the nature of the knowledge acquired through literature in order to reflect upon how their own experiences influence the way they understand and respond to their global community. Scholars will celebrate, explore, and analyze the power of diverse views and how literature communicates meaning and experience. Literature will be examined on the basis that there is not one ultimate version of reality or truth but rather literature provides a window into the lives and minds of people from all walks of life. Scholars will learn to connect the experiences and ideas raised in literature to the real world and enact to promote a strong sense of global community engagement. Scholars will develop an understanding of civic action and grow as independent thinkers while completing all objectives of grade 10.

Required for Grade 10.

ENG 10: Taking Action Part II

Offered in Spring 2026 - 1 semester - 0.5 credits

The content of this course centers on the theme of Taking Action and encourages scholars to examine the ideas, experiences, and points of view presented in various multicultural texts in relation to their personal views. Through the exploration of culturally diverse literature, scholars will examine the various roles that literature plays in society and the nature of the knowledge acquired through literature in order to reflect upon how their own experiences influence the way they understand and respond to their global community. Scholars will celebrate, explore, and analyze the power of diverse views and how literature communicates meaning and experience. Literature will be examined on the basis that there is not one ultimate version of reality or truth but rather literature provides a window into the lives and minds of people from all walks of life. Scholars will learn to connect the experiences and ideas raised in literature to the real world and enact to promote a strong sense of global community engagement. Scholars will develop an understanding of civic action and grow as independent thinkers while completing all objectives of grade 10.

Required for Grade 10.

ENG: Literature and Contemporary Social Issues

1 semester - 0.5 credits

Contemporary Social Issues introduces students to some of the social problems that face us in modern society. Throughout the class, students explore different sociological perspectives and address issues such as the changing demographics of the U.S., gender inequality, utopian and dystopian societies and the environment. Students are then asked to review, reflect and write about how each of these topics affects their lives either directly or indirectly. Pervasive social problems stimulate extensive sociological inquiry, and a class that covers such a topic prepares students for success in academics as well as later in life. This course offers a series of provocative questions and approaches to possible solutions that allow students to think critically about what the world of tomorrow may be like. Most importantly, students will leave the class at the end of the session with a fuller understanding of what it means to exist in the modern world.

Open to Grades 11 and 12

ENG: The American Dream Literature (formerly ENG 11)

1 semester - 0.5 credits

What does the American dream mean? During this half-year course, scholars will study important pieces of American literature while making connections to American history. Scholars will examine the American Dream, tracing how this dream of prosperity and freedom has evolved and been interpreted from different points of view. Scholars will sharpen their ability to think critically, communicate effectively, work collaboratively, and write creatively. Scholars will also analyze how the texts read connect to the magnet themes: awareness, diversity, and action.

Open to Grades 11 and 12

ENG: The American Dream Deferred (formerly ENG 11)

1 semester - 0.5 credits

During this half-year course, scholars will read literature that allows them to evaluate the American Dream through the lens of people from differing economic classes, genders, and races—all of whom have valuable interpretations. Scholars will sharpen their ability to think critically, communicate effectively, work collaboratively, and write creatively. Scholars will also analyze how the texts read connect to the magnet themes: awareness, diversity, and action.

Open to Grades 11 and 12.

ENG: Windows and Mirrors (formerly ENG 12 Senior ENG 1)

1 semester - 0.5 credits

This course is designed to help scholars examine what it means to be human. Reading selections will focus on short stories and novels that represent the perspectives of multiple cultures and the diversity of human experience while helping scholars understand the common aspects of the human experience. Regular written reflections on the reading, periodic analytical essays, and frequent structured discussion opportunities will expand scholars' ability to think critically about what they read. Some choice will be incorporated in the selection of readings.

Open to Grades 11 and 12

Pre AP English 1 (formerly English 1 Accelerated)

1 year - 1 credit

This course focuses on reading, writing, and language skills that are essential for students' future success in college coursework. Scholars read closely and analyze a range of complex literary and informational texts. They learn to evaluate textual evidence and incorporate it effectively in writing and speaking.

Scholars will improve their writing skills as they learn to understand how writers and speakers use specific words and sentences to evoke the thoughts, emotions, and actions of readers and listeners.

Prerequisite: 3.0 or higher GPA, summer work completion.

Honors English (formerly ENG College Prep English 2 - Formerly 099)

1 semester - 0.5 credits

This course for sophomores, juniors, and seniors develops critical, independent thinking. A focus on strengthening reading, writing, public speaking, and Habits of Mind is designed to prepare scholars for the rigors of college-level coursework. Scholars complete challenging written assignments to improve research, writing, and formatting; and strengthen public-speaking skills with a series of speeches culminating in a 5-minute presentation. Scholars who earn an 85 or higher can be recommended for Goodwin 101.

Prerequisite: 3.0 GPA or better or educator recommendation.

Note: Scholars must earn a grade of 85 or better as one of the criteria to take ENG101.

AP English

1 year - 1 credit

Learn about the elements of argument and composition as you develop your critical-reading and writing skills. You'll read and analyze nonfiction works from various periods and write essays with different aims: for example, to explain an idea, argue a point, or persuade your reader of something.

English Electives

Creative Writing

1 semester - 0.5 credits

This course requires scholars to demonstrate an ability to write in a creative manner in a variety of literary formats that include the short story, drama, and poetry. Group reading of works in progress is expected and revision based on peer critique is required. Scholars analyze the writing of established writers to demonstrate their understanding of the creative process and learn to discover their own creative voices. Scholars will create a portfolio of work that demonstrates their growth as writers over the course of the semester.

Film and Media Studies

1 semester - 0.5 credits

This course gives scholars the skills to analyze and evaluate media in a much more sophisticated, informed, and perceptive way than they knew was possible. Film and Media Studies is based on scholars learning (1) film devices and (2) film genres. Scholars will become increasingly aware of the various ways that film is edited and composed; in turn, scholars are able to analyze and evaluate the reasons why directors and cinematographers manipulate film to affect a viewer's perception. Scholars learn to distinguish various film genres (including suspense, melodrama, and film noir) and are able to compare multiple films in terms of film editing, composition, and genre.

Health & Wellness

Health and Wellness

1 semester - 0.5 credits

Health and Wellness is a half-year course that will concentrate on defining wellness and discovering how positive lifestyle choices affect a variety of health-related topics that challenge young adults now and in the future. This course provides the foundational knowledge that will lead, support, and guide each scholar's path to living a healthy balanced lifestyle. Topics include: Wellness, Human Sexuality, HIV/Aids, Sexually Transmitted Diseases, Decision Making, Alcohol, Tobacco, Drugs, Mental and Emotional Health, Body Image, Physical Health, Nutrition, and Sleep.

Health and Wellness 2

1 semester - 0.5 credits

Health and Wellness is a half-year course that will concentrate on defining wellness and discovering how positive lifestyle choices affect a variety of health-related topics that challenge young adults now and in the future. This course provides the foundational knowledge that will lead, support, and guide each scholar's path to living a healthy balanced lifestyle. Topics include: Wellness, Human Sexuality, HIV/Aids, Sexually Transmitted Diseases, Decision Making, Alcohol, Tobacco, Drugs, Mental and Emotional Health, Body Image, Physical Health, Nutrition, and Sleep.

Open to Grades 11 and 12.

Physical Education

Individual/Team Sports

1 semester - 0.5 credits

This is a half-year course that centers on an understanding of health and physical activity concepts and skills that are necessary to lead an active healthy life. It is important that scholars learn the connection between positive physical activity choices and the result this will have on their health. The goal of this course is to prepare scholars to lead an active and healthy lifestyle by providing them with physical activity skills, game concepts, and cooperative teamwork opportunities. Scholars gain an understanding of "wellness" by forming connections between health and physical activity. This course will help scholars better understand the positive impact physical activity has on the body. Typical course activities may include: volleyball, team handball, and basketball.

Personal Training

1 semester - 0.5 credits

This course is designed to give scholars the opportunity to learn fitness concepts and conditioning techniques used for obtaining optimal physical fitness. Scholars will benefit from comprehensive weight training and cardio respiratory endurance activities. Scholars will learn the basic fundamentals of strength training, aerobic training, yoga, anatomy, exercise science, and overall fitness training and conditioning programming. Course includes both class work and activity sessions. Scholars will be empowered to practice goal setting, meet challenges, and develop positive behaviors in fitness, wellness, and movement activity for a lifetime.

Mathematics

Algebra 1

1 year - 1 credit

This course emphasizes algebraic language, structure, concepts, and skills. The skills developed in this class will provide the mathematical foundation necessary to be successful in higher-level mathematics courses. Algebra uses variables to generalize and extend the laws of arithmetic. Major topics include: data representation, simplifying algebraic expressions, solving equations and inequalities, linear functions, and real-world applications of algebra.

Algebra 2

1 year - 1 credit

This course is designed to help scholars expand on their prior knowledge of Algebra I concepts and apply them to the real world. Scholars will engage in an in-depth exploration of functions and their graphs. Major topics include: systems of equations and inequalities, introduction to function families, and solving and graphing quadratic, exponential, and logarithmic functions.

Prerequisite: Successful completion of Algebra 1 and Geometry

Honors Algebra II

1 year - 1 credit

This course is designed to help scholars expand on their prior knowledge of Algebra I concepts and apply them to the real world. Scholars in this course will explore algebra concepts in more depth in preparation for higher-level math courses such as pre-calculus and calculus. Major topics include: systems of equations and inequalities, linear optimization, exploration of function families, quadratic functions, radical functions, exponential functions, and logarithmic functions.

Prerequisite: B+ or better in Algebra 1 and Geometry or teacher recommendation.

Algebra 2 Everyday

1 year - 1 math credit - 1 elective credit

This course is designed to help scholars expand on their prior knowledge of Algebra I and geometric concepts and apply them to the real world. Scholars will engage in an in-depth exploration of functions and their graphs. Major topics include: introduction to function families, systems of equations and inequalities and solving and graphing quadratic, radical, and exponential functions.

Geometry

1 year - 1 credit

In this course, scholars will explore relationships between various types of figures and their properties. Throughout the course, inductive and deductive reasoning skills will be developed and integrated through advanced manufacturing applications. Utilizing manipulatives and technology, scholars will explore and develop mathematical concepts to further geometric understanding. Major topics include: basics of geometry, segments and angles, parallel and perpendicular lines, triangle relationships, congruent triangles, quadrilaterals, similarity, polygons and area, surface area and volume, right triangle trigonometry, and circles.

Prerequisite: B+ or better in Algebra 1 or teacher recommendation.

Honors Geometry

1 year - 1 credit

This accelerated course is similar to Geometry with added depth. The course moves at a faster pace and is intended for students who will likely pursue a mathematics or science-related career. The Accelerated Geometry course provides a rigorous geometric foundation while incorporating algebra when possible. This is intended for scholars who intend to take Pre/Calc and Calc.

Prerequisite: B+ or better in Algebra 1 or teacher recommendation.

Goodwin University Dual Enrolled:

MATH 254: Calculus

1 semester - 0.5 credits - 4 college credits

This is a Goodwin University/CTRA dual credit course for scholars who are interested in continuing their study of advanced mathematics. It is especially appropriate for those interested in any of the math-related fields including the sciences, engineering, pharmacy, business, economics, or technology. Topics included are limits, continuity, derivatives, and applications.

Prerequisite: 80 or better in AP Precalculus, summer work completion.

Mathematics of Finance 1

1 semester - 0.5 credit

The goal of this course is to help scholars use mathematics effectively in their daily lives and to become financially responsible members of society. This course will give scholars the mathematical tools and resources needed to explore current and future financial decisions and evaluate the costs and benefits of decisions. It will prepare scholars to make wise financial decisions and establish financial well-being. Scholars will develop financial understanding and mathematical skills in such areas as money management and budgeting and will apply mathematical skills and formulas to solve real-life scenarios.

Open to Grades 11 and 12.

Mathematics of Finance 2

1 semester - 0.5 credit

This course is a continuation of Math in Finance 1 with the main goal of helping scholars understand the impact of individual choices on their long-term financial goals and future earnings potential. Scholars will explore the effective use of personal financial resources as a means to financial security. The course will use scholars' mathematical skills to explore a wide variety of financial concepts, such as financial institutions, investing options and benefits, the wise use of credit, securing housing, purchasing vehicles, insurance, income taxes and the consequences of mismanaged finances.

Open to Grades 11 and 12.

Precalculus

1 year - 1 credit

This is a course for scholars who want to expand on their advanced mathematics skills and acquire the foundation for calculus. Major topics include: linear, quadratic, polynomial, rational, exponential, logarithmic, and trigonometric functions and their applications.

Prerequisite: B+ or better in Algebra 2 or teacher recommendation.

AP Precalculus

1 year - 1 credit

This is a course for scholars who want to expand on their advanced mathematics skills and acquire the foundation for calculus. Major topics include: linear, quadratic, polynomial, rational, exponential, logarithmic, and trigonometric functions and their applications.

In AP Precalculus, students explore everyday situations using mathematical tools and lenses. Through regular practice, students build deep mastery of modeling and functions, and they examine scenarios through multiple representations. They will examine scenarios through multiple representations. They will learn how to observe, explore, and build mathematical meaning from dynamic systems, an important practice for thriving in an ever-changing world.

Prerequisite: B+ or better in Algebra 2 ACC or teacher recommendation, summer work required.

Statistics and Probability

1 semester (fall) - 0.5 credits

This course is designed to introduce the basics of statistics and probability. Scholars will study probability rules, normal curves and distributions, standard deviation, linear regressions, correlations, and hypothesis testing. The course will also introduce methods to enable the scholar to interpret statistical data and evaluate their validity to justify conclusions made in everyday life.

Prerequisite: Successful completion of Algebra 1 and Geometry.

Statistics and Probability 2

1 semester (spring) - 0.5 credits

This course is designed to introduce the basics of statistics and probability. Scholars will study probability rules, normal curves and distributions, standard deviation, linear regressions, correlations, and hypothesis testing. The course will also introduce methods to enable the scholar to interpret statistical data and evaluate their validity to justify conclusions made in everyday life.

Prerequisite: Successful completion of Statistics and Probability 1.

Financial Literacy

1 semester - 0.5 credits

This course is designed to introduce scholars to personal finance topics that will prepare them for life after high school and beyond. Topics include:

- Identify different types of jobs and careers where wages and salaries depend on a worker's productivity and skills.
- Differentiate between gross, net, and taxable income.
- Calculate the amount of taxes a person is likely to pay.
- Develop a budget to allocate current income to necessary and desired spending, including estimates for both fixed and variable expenses.
- Describe how inflation affects purchase decisions and the price of goods and services.
- Analyze social media marketing and advertising techniques designed to encourage spending.
- Investigate common types of consumer fraud and unfair or deceptive business practices, including online scams, phone solicitations, and redlining.
- Compare and contrast the features of mobile payment accounts, cryptocurrency accounts, and checking/savings accounts.
- Explain how traditional IRAs (individual retirement accounts), Roth IRAs, and education savings accounts provide incentives for people to save.
- Describe how credit card grace periods, methods of interest calculation, and fees affect borrowing costs.
- Explain the role the FAFSA plays in applying for college financial aid.
- Identify scholarships and grants for which they are eligible.
- Analyze the conditions under which it is appropriate for young adults to have life, health, and disability insurance.
- Recommend types of insurance needed by people with different characteristics.
- Understanding the benefits of participating in employer sponsored retirement savings plans and healthcare savings plans.

Music

Chorus

1 year - 1 credit

This is a participation-based vocal group. This course will cover advanced elements of choral performance as well as dance movement. Elements of style, posture and breath support, tone quality and production, diction, vocal blend and ear training; will be taught through appropriate director chosen literature and technique/reading materials. Scholars will perform in at least two annual concerts.

Modern Band

1 semester - 0.5 credits

This is a participation-based vocal group. This course will cover advanced elements of choral performance as well as dance movement. Elements of style, posture and breath support, tone quality and production, diction, vocal blend and ear training; will be taught through appropriate director chosen literature and technique/reading materials. Scholars will perform in at least two annual concerts.

Piano/Keyboard Lab

1 semester - 0.5 credits

The purpose of this class is to introduce and develop keyboard skills from beginner to intermediate. Each scholar may progress at their own speed, working individually and in groups. Included in this class will be the use of current electronic keyboards and electronic equipment in CTRA's new midi lab. This class requires no previous experience.

Music Technology I

1 semester - 0.5 credits

This course is designed to introduce the scholars to the world of digital audio and MIDI computer recording. By using the tools of digital recording, the scholars will be able to create their own musical compositions and arrangements to produce their own audio CD archives to use for listening, websites, video, or any other application where music is used. This course will explore the electronic keyboard, MIDI and audio recording, music theory, notation, arranging, transposition, composition, music production, sound tracks, performance and copyrights.

Music Technology II (formerly Introduction to Audio Engineering, Composing, and Arranging)

1 semester - 0.5 credits

Music and Technology II assumes a knowledge and experience in using computer systems to create, manipulate and engage in sound design, electronic music, electroacoustic composition and performance. This course is designed for students interested in music and exploring the world of music technology. The music technology class will equip students with a working knowledge of the industry tools for composition and notation, sound recording/engineering, web presence development and the history of commercial music in the United States. Students learn about techniques in recording and music development for movies, records, and radio. They also learn to mix music and edit digital music pieces.

Prerequisite: B or better in Music Technology I or teacher recommendation

AP Music Theory

1 year - 1 credit

The AP Music Theory course focuses on concepts and skills emphasized within introductory college music theory courses, with the goal of helping students become sophisticated and thoughtful music listeners, performers, and composers. AP Music Theory scholars learn to recognize, understand, describe, and produce the basic elements and processes of performed and notated music. To become proficient with these skills, students need to consistently practice applying course concepts through aural analysis, score analysis, sight-singing, dictation, and composition.

Science

Biology

1 year - 1 credit

Life Science/Lab Science

This course will explore the study of life with a focus on the conditions and organisms within the CT River Academy and its watershed. It examines all aspects of life, from tiny cells that can only be seen with a microscope up to entire ecosystems with plants and animals. This course will encourage you to connect NGSS topics like cells, genetics, evolution and ecology and apply biological knowledge within your local community as well as globally.

Required for Grade 10

Pre AP Biology (formerly Biology Accelerated)

1 year - 1 credit

Life Science/Lab Science

The primary objective of the course is to provide students with a fundamental understanding of modern biology and scientific processes, building a foundation for success in the college level AP courses to follow. This course places a higher priority on developing critical thinking skills by examining real world problems. Topics are covered in depth and there is a focus on laboratory investigations. This course will prepare scholars to take biology at the college level.

Prerequisite: 3.0 GPA or Science teacher recommendation, summer work completion.

Chemistry

1 year - 1 credit

Physical Science/Lab Science

This college prep laboratory course is an engaging look at how the elements shape the world around us. We will study states and types of matter, atoms and elements, ionic and covalent bonding, chemical reactions and equations, and acids and bases. These concepts will be reinforced with laboratory investigations.

Open to Grades 11 and 12

Prerequisite: B or better in Algebra 1 or Chemistry teacher recommendation

AP Chemistry

1 year - 1 credit

Have you ever wondered if a diamond really is forever? How batteries create electricity from chemical reactions? Or how we know that atoms exist when they're too small to be seen?

In AP Chemistry, you'll learn to examine the atomic and molecular interactions that result in all the varied materials and changes that you observe daily, as well as how to properly test and analyze errors in an experiment.

Open to Grades 11 and 12

Prerequisite: Chemistry teacher recommendation

Environmental Chemistry

1 year - 1 credit

Physical Science/Lab Science

This is a college preparatory lab science course. The course is a major step toward enhancing science literacy through a curriculum that emphasizes the impact of chemistry on the environment and society. Units will center on environmental chemistry and the related human and technological issues that confront us. The interdisciplinary nature and the everyday life contexts of this approach to teaching chemistry enhance science literacy and emphasize the impact of chemistry on society. The knowledge gained from the course will better prepare scholars to actively and sustainably shape their future society.

Environmental Science

1 year - 1 credit

Life Science/Lab Science

This course is designed to help scholars become more aware of the interactions between people and their environment and the resulting environmental challenges of today. The curriculum focuses on science concepts applied to real-life issues. The impact of environmental issues on the future lives of the scholars and local and global communities will be explored. The course will help scholars develop a respect for the necessity and sustainability of natural resources. The scholars will take advantage of local resources, such as the CT River, the school's Goodwin Navigator research vessel, and the CT Department of Environmental Protection.

Required for Grade 9.

Physics

1 year - 1 credit

Physical Science/Lab Science

Physics is designed to give scholars an understanding and appreciation of the laws of physics and how they pertain to everyday life. The topics covered include motion, momentum and energy, thermodynamics, electricity and magnetism, and light and sound. There will be numerous labs and projects that can relate the physics concepts learned to models and real-life situations.

Prerequisite: 85 or better in Algebra 2 or teacher recommendation.

Science Electives

Agriculture, Aquaculture, and Animals 1

1 semester - 0.5 credits

Life Science

This course will engage scholars in using and maintaining animal and plant life (both terrestrial and aquatic), in the CTRA habitat center, an equine therapy facility, the greenhouse, and school gardens. Extensive hands-on activities with a high level of independent responsibilities will be part of this course. In each unit concepts needed for success in various careers will be taught, including the monitoring of plants and animals, handling and safety of animals and plants, and the use of computer-based monitoring technologies.

Open to Grade 10, 11, and 12.

Forensics

1 semester - 0.5 credits

Physical Science/Lab Science

Environmental forensics is designed to have scholars work in teams to solve crime scenarios using scientific knowledge and reasoning that are based on real events. This course will integrate all areas of science including biology, anatomy, chemistry, physics, and environmental science with an emphasis on complex reasoning and logic. In addition to applying forensic principles and skills to solve crimes against humans, scholars will also examine how these skills can be used to solve crimes against nature, such as poaching and environmental contamination. Scholars will incorporate the use of technology, communication skills, language arts, mathematics, and social studies.

Ecology

1 semester - 0.5 credits

Life Science

This course provides a comprehensive introduction to the principles of ecology, emphasizing the relationships between organisms and their environment. Through a combination of engaging lectures, hands-on experiments, and fieldwork, students will gain a deep understanding of the natural world and the interconnectedness of living organisms. This course aims to foster a deep appreciation for the natural world, encourage critical thinking about environmental issues, and empower students to become responsible stewards of the planet. By the end of the semester, students will have gained a solid foundation in ecology and developed the skills needed to critically evaluate and address ecological challenges in their local and global communities.

Open to Grades 10, 11, and 12.

Social Studies

AP World History: Modern

1 year - 1 credit

In AP World History: Modern, scholars investigate significant events, individuals, developments, and processes from 1200 to the present. Students develop and use the same skills, practices, and methods employed by historians: analyzing primary and secondary sources; developing historical arguments; making historical connections; and utilizing reasoning about comparison, causation, and continuity and change over time. The course provides six themes that students explore throughout the course in order to make connections among historical developments in different times and places: humans and the environment, cultural developments and interactions, governance, economic systems, social interactions and organization, and technology and innovation.

Prerequisite: 3.0 or higher GPA or teacher recommendation, summer homework completion.

Civics

1 semester - 0.5 credit

Scholars at the Connecticut River Academy will learn how to proactively participate in the political process in Civics, a state required course. Early units of study will help scholars understand the purpose of government and the functionality of American government. Civics at CTRA will challenge scholars to develop their own political perspectives on a variety of issues. The course will culminate with scholars creating a portfolio that showcases their understanding of civic engagement and responsibility. More specifically, scholars will identify and research an issue of civic importance, think critically about action steps, and participate in the democratic process by completing and evaluating their action plan.

Required for Grade 9.

Modern World History

1 year - 1 credit

In this required course for 10th graders, scholars will examine how the world has been shaped socially, politically, religiously, and culturally over the last millennia. Scholars will analyze primary and secondary sources; develop historical arguments; make historical connections; and utilize reasoning about comparison, causation, and continuity and change over time.

United States History

1 year - 1 credit

This course will use inquiry to study the multicultural American identity from the turn of the 20th Century to present day. Scholars will use their historical thinking and Habits of Mind to evaluate divergent viewpoints of events and people in local and national history. Scholars will apply college research and communication skills. Scholars will complete a comprehensive thesis paper as a major part of this course.

Required for Grade 11.

Identity, Culture, and Community

1 semester- 0.5 credits

The purpose of this course is to promote awareness of local and global differences, to identify shared values, to improve the understanding of one's own culture, and to encourage scholars to explore and honor differences. Scholars in this course will develop habits of mind to go beneath surface meaning and first impressions in order gain a deep understanding of each other and the social context that makes up our environment. Scholars will use the Circle of Courage to inquire about who they are and how they can break barriers, share power, and create a respectful community. The discussions and projects in this course will help students voice their opinions, develop trust, and listen to each other with empathy.

Required for Grade 9.

Social Studies Electives

Black and Latino Studies

1 year - 1 credit

The African American/Black and Puerto Rican/Latino Course of Studies is a one credit, year-long elective in which students will consider the scope of African American/Black and Puerto Rican/Latino contributions to U.S. history, society, economy, and culture. The course is an opportunity for students to explore accomplishments, struggles, intersections, perspectives, and collaborations of African American/Black and Puerto Rican/Latino people in the U.S. Students will examine how historical movements, legislation, and wars affected the citizenship rights of these groups and how they, both separately and together, worked to build U.S. cultural and economic wealth and create more just societies in local, national, and international contexts.

Open to Grade 10, 11, and 12th grade students.

Deliberation

1 semester- 0.5 credits

The act of deliberating requires individuals to think about and discuss issues and decisions carefully. Through this Deliberation course scholars will engage in classroom discussions about current issues impacting the United States. Scholars will research primary and secondary sources to gain a deeper understanding of contemporary matters and then apply their gained knowledge in a classroom deliberation on the topic. Many of these topics will come directly from the list of agenda items being debated in Congress. Scholars will leave this semester course with an understanding of civic values and intellectual skills necessary for citizens in a democracy.

Goodwin University Dual Enrolled:

PSY112: Introduction to Psychology at Goodwin University

1 semester- 0.5 credits

The act of deliberating requires individuals to think about and discuss issues and decisions carefully. Through this Deliberation course scholars will engage in classroom discussions about current issues impacting the United States. Scholars will research primary and secondary sources to gain a deeper understanding of contemporary matters and then apply their gained knowledge in a classroom deliberation on the topic. Many of these topics will come directly from the list of agenda items being debated in Congress. Scholars will leave this semester course with an understanding of civic values and intellectual skills necessary for citizens in a democracy.

Sociology

1 semester- 0.5 credits

This course will examine the nature of human behavior as a product of the social world in which we live. Scholars will examine the "social" part of sociology, which goes beyond the individualistic and examines how individuals are interconnected. Students will use the scientific method to create and test hypotheses in order to describe how society functions as a whole. Students in this course will examine the values, groups, institutions, inequality and human interaction with the environment to develop their sociological imagination.

Open to Grades 10, 11, and 12

Support

Academic Strategies

1 semester- 0.5 credits

This course is designed for first and second year students with the objective that these students will improve as readers and mathematicians, as well as overall thinkers. The reading focuses on vocabulary acquisition, critical reading, and comprehension strategies. The math focuses on skill building, including math fact practice, order of operations, and foundational skills. Both courses hope to instill a higher proficiency, as well as a better understanding of the subject areas, in addition to an increase in confidence for the scholar.

Open to Grades 9 and 10; standardized test scores, grades, and teacher recommendation.

College Study Group

1 semester- 0 credits

This time block offers scholars the opportunity to engage with course content and materials on a deeper level. Scholars will work in a structured environment focused on organizing materials, meeting with professors, and accessing other college-level resources to support their success in Goodwin University courses.

English Language Development

1 year - 1 credit

A full year course for English Learners at the beginning or early intermediate level (1 or 2) on the LAS Links assessment. The curriculum covers five skill areas: listening, speaking, reading, writing and grammar, and cultural enrichment. Focus will be placed on improving scholars' oral and written language to support them in academic classes. This course is also appropriate for English Learners who are at level 3 on the LAS Links assessment and need to further develop their English skills to be successful in their academic classes.

English Language Support

1 semester - 0.5 credits

A course for English learners at the intermediate or proficient level on the LAS Links assessment who have not yet met mastery or need monitoring (per CTSDE for 2 years after meeting mastery) in core academic classes.

Executive Functioning Study Hall 1 and 2

1 semester - 0.5 credits

The purpose of this course is to instruct scholars with Executive Functioning strategies to support lifelong learning and success. This course also provides a monthly check-in with the attendance assistant, administration, school social worker and school counselor. Upon recommendation of school counselor and administration.

Learning Center

1 semester - 0.5 credits

Learning Center is designed to provide scholars with specialized instruction to support academic needs as outlined in their Individualized Education Plans (IEPs). Scholars will work with special educators individually and in small groups to build academic, organizational, and study skills to meet their individual goals and reach proficiency in their academic classes.

Study Hall

1 semester - 0.0 credits

Scholars without any D's or F's may elect to take a study hall. This time block offers scholars the opportunity to independently complete assignments and prepare for academic assessments. Scholars will be expected to work on materials that support success in their course work.

Technology

Digital Portfolio

1 semester - 0.5 credits

In this half-year course, scholars will create the digital portfolio that will house their work for their time at CTRA. The work demonstrates growth towards mastery of our 21 Century Skills measured through our school-wide Critical Thinking and Communication rubrics, as well as our Magnet Standards of Awareness, Diversity, and Action. The work will be presented at scholar-led conferences culminating in the senior Capstone Presentations.

Required for Grade 9

Foundations of Technology

1 semester - 0.5 credits

This course provides the foundation for students to understand and apply technological concepts and processes. Group and individual activities engage students in creating ideas, developing innovations, and engineering practical solutions. Technology content, resources, and laboratory activities encourage student applications. The knowledge and skills acquired and practiced will enable students to successfully perform and interact in a technology-driven society.

Required for Grade 9

Web Design and Development

1 semester - 0.5 credits

In today's world, web pages are the most common medium for sharing ideas and information. Learning to design websites is an incredibly useful skill for any career path. This Web Design course is a project-based course that teaches students how to build their own web pages. Students will learn the languages HTML and CSS, and will create their own live homepages to serve as portfolios of their creations. By the end of this course, students will be able to explain how web pages are developed and viewed on the Internet, analyze and fix errors in existing websites, and create their very own multi page websites. Students will learn the foundations of user interface design, rapid prototyping and user testing, and will work together to create professional, mobile responsive websites.

World Language

Spanish 1

1 year - 1 credit

This course is designed as an introduction to the Spanish language and Hispanic cultures. Students will practice speaking, listening, reading, and writing in a cultural context. Scholars will identify and utilize new vocabulary words and acquire basic grammatical concepts.

Spanish 2

1 year - 1 credit

This course is designed to further develop the language skills acquired in Spanish I. Scholars will review basic grammatical concepts and be required to demonstrate understanding of new intermediate level concepts. Students will study various aspects of Hispanic cultures around the world.

Prerequisite: 70 or better in Spanish 1

Spanish 3

1 year - 1 credit

This course continues to develop language functions learned and emphasizes fluency in speaking, reading, writing and listening at an intermediate high level. Throughout the year, scholars will continue to acquire intermediate concepts. Vocabulary and grammar appropriate to this level of study is presented in Spanish and developed through the use of authentic listening exercises on a variety of cultural themes.

Prerequisite: 70 or better in Spanish 2

Spanish 4

1 year - 1 credit

This course is a continuation of Spanish 3, and is designed for language scholars who are interested in going beyond the mere college requirement. Scholars who have demonstrated excellence in previous Spanish courses should highly consider taking this course. The course aims at developing the ability of the scholar to function effectively and to discuss a variety of topics in Spanish. Habits of Mind, like persistence and taking responsible risks, are extremely important for this course.

Prerequisite: 80 or better in Spanish 3

Spanish for Native Speakers

1 year - 1 credit

This course is designed for scholars who consider themselves bilingual. Because speaking is a strength for bilingual scholars, this course has a heavy focus on reading and writing strategies. Themes of each unit include, but are not limited to, a variety of Spanish-speaking countries, college/career-readiness and environmental studies. Bilingual scholars are eligible to take this course anytime during their career at CTRA and are able to enroll into the course more than once for credit.