



**Connecticut
River Academy**
at Goodwin University

Program of Studies 2020-2021

Principal: Tara Amatrudo
Assistant Principal: JT Foster

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East Hartford, CT 06118

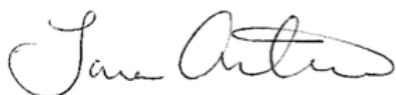
Dear Scholars,

You are fortunate to be selecting coursework from a challenging and varied curriculum that is offered by a talented faculty. We are a small high school with very high expectations for each of you. These expectations can be met through careful planning by scholars, families, and educators. As you begin the course selection process, please remember that freedom is really the right to become the best you can be, not to choose the path of least resistance. Good decision making and planning by you is the key to your future in a rapidly changing global society. In selecting your overall program and specific courses that you will take, it is vitally important that you consult parents, teachers, school counselors, and administrators. They can help you make decisions regarding your future plans and will guide you toward the appropriate classes.

The required courses at CTRA are designed to prepare all scholars to go on to post-secondary education. There are other courses that 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.

Respectfully,

A handwritten signature in black ink, appearing to read "Tara Amatrudo". The signature is fluid and cursive, with the first name "Tara" being more prominent than the last name "Amatrudo".

Tara Amatrudo
Principal

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CONNECTICUT RIVER ACADEMY

AT GOODWIN UNIVERSITY

Connecticut River Academy Vision, Values, and Magnet Standards
Revised for 2018-19



VISION:

Connecticut River Academy graduates will use their gifts to contribute to a just and sustainable world.

CORE VALUES:

AWARENESS — DIVERSITY — ACTION

MISSION:

The mission of the 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.

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 a 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

NON-DISCRIMINATORY STATEMENT

LEARN 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.

GRADUATION REQUIREMENTS FOR THE CONNECTICUT RIVER ACADEMY

For Scholars Graduating Before 2023:

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

Subject	Credits	Distributional Credits
English	4	Must take at least 1 credit of English all four years
Social Studies	3	Civics (0.5 credits) U.S. History (1.0 credit)
Mathematics	3	Algebra 1 and Geometry
Science	3	Biology, Physical Science (Chemistry or Physics), and 1.0 additional Science Lab
World Language	2	-
Physical Education	1	-
Health & Safety	0.5	-
*Career & Life Skills	1	-
Fine Arts	1	Art or Music
**Humanities	1	-
***Capstone Project	1	Senior Demonstration Project and Exhibition
Electives	4.5	-

*Career and Life Skills - These skills are embedded throughout our courses including our theme-based electives.

****Humanities** – This requirement may be met through English or Social Studies Electives

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

The Capstone Project 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.

For Scholars Graduating in 2023 and Beyond:

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

CT Graduation Requirements	Subjects	Credits	Mandatory Courses or Equivalents
Humanities (9 credits)	English	4	1 English credit each year for 4 years
	Social Studies	3	Civics(.5 credit) and US History (1 credit)
	Fine Arts	1	Art or Music
	Elective	1	1 elective credit in Social Studies, English, World Language, or Fine Arts
STEM (9 credits)	Mathematics	4	-
	Science	3	1 credit in a physical science, 1 credit in a life science, and 1 additional credit in a lab science course
	Technology	1	-

	STEM Elective	1	-
World Language (2 credits)	Spanish	2	* Scholars may meet requirements for Seal of Bi-Literacy on diploma and transcript
Self-Wellness (2 credits)	Physical Education & Health	1	.5 credit in PE and .5 credit in Health
	Personal Wellness & Safety Education	1	Four Years of Advisory (.25 credits each year related to SSP)
Electives (2 credits)	-	2	May be any course in any subject area that is not required for graduation
Mastery Based Diploma (1 credit)	Capstone Experience	1	Senior demonstration project and exhibition
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 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.

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 principal.

AUTHORITY OF THE PRINCIPAL

The school principal 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 DUAL ENROLLED PROGRAM

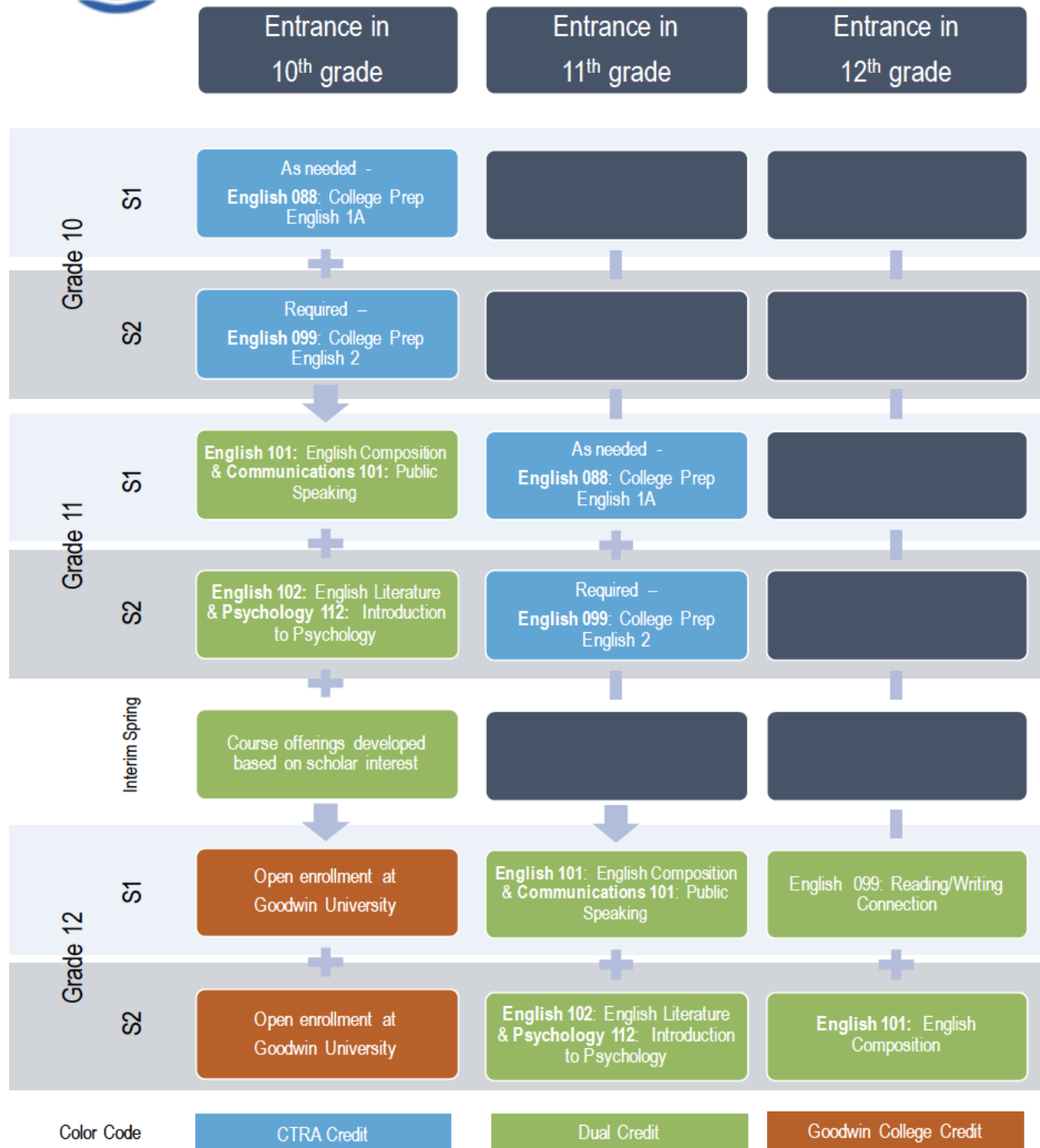
There are two pathways to earning Goodwin University credit for CTRA scholars - the Early College Pathway and the Advanced Manufacturing Pathway.

The Early College Pathway

In order to ensure that our scholars will succeed in and college level courses, the Early College pathway requires them to take Goodwin University's foundational writing course, English 099, at the Connecticut River Academy. Scholars can be recommended for this course in 10th, 11th, or 12th grade. If the scholar earns an 85 or better in the class, he/she may then enroll in prescribed Goodwin University courses. Our scholars taking Goodwin courses for the first time are in a cohort consisting of only CTRA scholars, and may have a schedule consisting of the following courses:



Typical Course Sequence in Early College Pathway

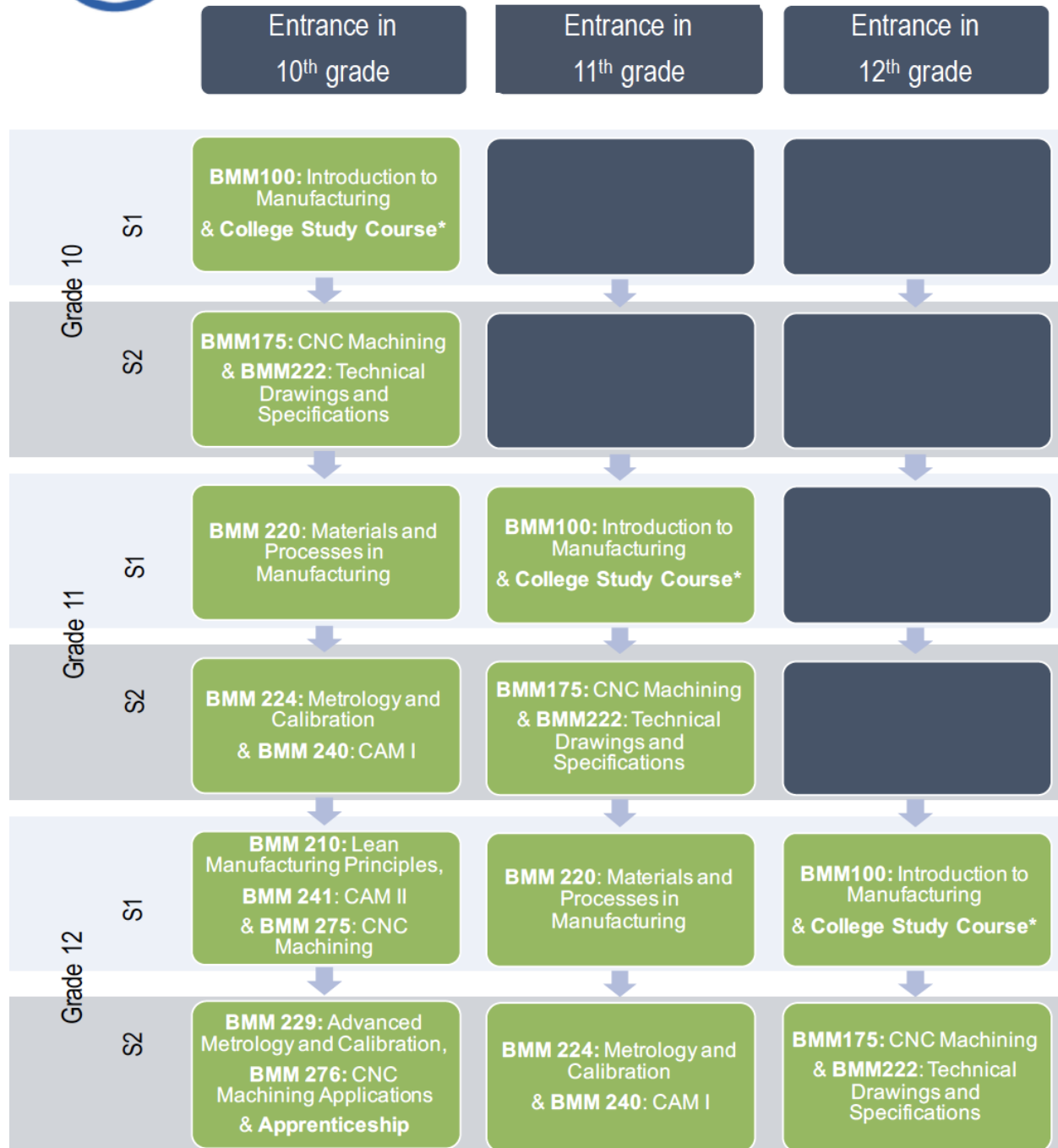


The Advanced Manufacturing Pathway

The Advanced Manufacturing Pathway gives scholars the opportunity to obtain advanced manufacturing skills, industry-ready credentials, and to earn credits toward a Goodwin University Advanced Manufacturing Certificate or Degree. In order to ensure that our scholars will succeed in college-level manufacturing courses, the Manufacturing Pathway offers Foundations of Technology, a survey class to determine scholar interest and aptitude. All successful pathway candidates must pass Foundations of Technology with a B- or better and Algebra I. Students need a B- or better in dual enrolled Manufacturing courses in order to continue in the program. Students may earn up to 37 credits and the CNC Machining, Metrology, and Manufacturing Technology Certificate from Goodwin University. These credits also allow scholars to continue on to earn an associates degree at Goodwin University.



Typical Course Sequence in Advanced Manufacturing Pathway



*College Study Course: Includes Credit by Exam for BMM140.

Other Early College Opportunities:

In addition, CTRA scholars may access the following college level math courses if they receive an 85 or better in the previous math course and/or with teacher recommendation.

Math 254: Introduction to Calculus

Math 255: Calculus II

CTRA/GOODWIN UNIVERSITY DUAL ENROLLED COURSES

BMM 100 Introduction to Manufacturing		
1 semester	0.5 credit	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: Foundations of Technology		

BMM 140 Principles in Manufacturing Mathematics		
1 semester	0.5 credit	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.		

BMM 175 CNC Machining

1 semester

0.5 credit

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: BMM 100 Introduction to Manufacturing

BMM 210 Lean Manufacturing Principles

1 semester

0.5 credit

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.

BMM 220 Materials and Processes in Manufacturing

1 semester

0.5 credit

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.

BMM 222 Technical Drawings and Specifications

1 semester

0.5 credit

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: BMM 100 Introduction to Manufacturing**BMM 224 Metrology and Calibration**

1 semester

0.5 credit

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: BMM 100 Introduction to Manufacturing**BMM 229 Advanced Metrology and Calibration**

1 semester

0.5 credit

3 college credits

This course builds upon the foundations of measurement science from BMM 224 Metrology & Calibration, by primarily focusing on working in the laboratory in a hands-on environment. Students will learn proper measurement techniques using the tools of the trade on real-world parts. This lesson brings the student through basic hand tools and techniques up through the programming and operation of coordinate measurement machines (CMM's). This course will prepare the modern day machinist or quality specialist with the tools they need to make precise measurements in their chosen profession.

BMM 240 CAM I		
1 semester	0.5 credit	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.		

BMM 241 CAM II		
1 semester	0.5 credit	3 college credits
Graphical software is used to generate part programs for CNC Turning and Milling operations. Emphasis of the course is to learn additional elements of Computer-Aided Manufacturing (CAM) to manipulate engineering part geometry and convert screen graphics into Computerized Numerical Control (CNC) programs. Students will learn the fundamentals of how to file and manage part models from design to manufacturing. Mastercam software will be applied for CNC programming of more complex 3-D CAD files.		
Prerequisite: BMM 240 CAM I		

BMM 275 CNC Machining II		
1 semester	0.5 credit	3 college credits
This course provides additional concepts of CNC and the importance of fixtures and tooling and how they interface with Mastercam software. CNC programs will be developed to perform contouring operations for milling machine centers. Application of more complex features will be used to develop G and M codes to produce CNC programs to produce Climb, Pocket and Contour milling. Tooling interface, speed and feed rates will be developed along with X, Y, Z data using the Cartesian coordinate system.		
Prerequisite: BMM 175 CNC Machining		

BMM 276 CNC Machining Applications		
1 semester	0.5 credit	3 college credits
CNC programming tasks are applied to produce more complex part geometries with added features. Parts geometries will be milled and turned based on solid model geometry. Various operations will be performed where parts are located using datum dimensions. Setup, fixtures, and tooling will be used to produce hardware. Multi-featured parts will be measured and inspected per work instructions and geometric tolerance requirements including true position, perpendicularity, flatness and other requirements.		
Prerequisite: BMM 275 CNC Machining II		

COM 101 Public Speaking		
1 semester	0.5 credit	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.		

ENG 101 English Composition at Goodwin University		
1 semester	0.5 credit	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 ENG 099		

ENG 102 Composition and Literature at Goodwin University		
1 semester	0.5 credit	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: 80 or better in ENG 101		

ENG 235 American Literature II		
1 semester	0.5 credit	3 college credits
This course introduces students to selected works of literature that represent major trends in American literature since the end of World War II. This course will help students understand the relationship between literature and life in contemporary America.		

HIS 112 Tracing the African American Experience		
1 semester	0.5 credit	3 college credits
The course is an overview of the field of African American Studies. Interdisciplinary in nature, African American Studies embraces history and literature, the arts and material culture, as well as sociological, political, economic, public policy, and philosophical perspectives on the experience of people of African descent in the United States		
Open to scholars in grade 12		

Math 254 Calculus		
1 semester	0.5 credit	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 Pre-Calculus		

Math 255 Calculus II		
1 semester	0.5 credit	4 college credits
Not offered in 2020-21		
This is a second course in calculus and intended 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, and technology. Topics included are integration, differential equations, applications of integration, integration techniques, improper integrals, sequences and series, conics, parametric equations and polar coordinates.		
Prerequisite: 80 or better in Calculus		

PSY 112 Introduction to Psychology at Goodwin University		
1 semester	0.5 credit	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

Art Foundations

1 semester

0.5 credit

This course will concentrate on developing artistic ability through the use of the elements of art and principles of design. Scholars will get experience with a wide variety of media such as, drawing, painting and sculpting from observation applied in two-dimensional and three-dimensional projects. Art History and critiques will be a part of each unit. This course is required as a prerequisite for drawing.

Digital Photography

1 semester

0.5 credit

The basic elements of photography such as lighting, composition, and subject matter as well as basic camera functions will be taught. Scholars will also learn how to use Adobe Photoshop to digitally manipulate and enhance their photographs. The history of photography and how it has evolved as an art form will be explored as well as various well-known photographers. This class requires collaboration in the creation of photographs, presentations and critiques.

Drawing

1 semester

0.5 credit

Scholars with an interest in developing strong drawing and rendering skills should take this course. Drawing from observation of three-dimensional forms will be taught as well as drawing from the imagination. Scholars will focus and expand on drawing skills and techniques introduced in Art Foundations. This course will help scholars increase their observational drawing skills, composition and technical manipulation of media.

Prerequisite: Art Foundations

Recycle Art

1 semester

0.5 credit

This course focuses on exploration of ideas, materials, and a variety of art concepts that include the elements of art and the principles of design. Scholars use tools and materials to create innovative art by looking at trash in different and inventive ways. The Studio Habits of Mind are taught and used as the structure for grading of all projects. Scholars will also research and respond to upcycled art to further their understanding of trash as an art form. The three R's: reduce, reuse and recycle is emphasized as a purpose and message of creative expression.

Prerequisite: Art Foundations

COLLEGE/CAREER

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		

Career/College Readiness		
1 year	0.5 credit	
Not offered in 2020-21		
Career/College Readiness supports our Early College theme and assists with scholar's successful transition into high school. Scholars will enhance their skills in organization and technology. The course introduces scholars to college/career planning and a scholar success plan is developed.		

COM 101 Public Speaking		
1 semester	0.5 credit	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.		

Inquiry Methods and Design		
1 semester	0.5 credit	
This course engages the scholars in interdisciplinary explanation of real-world topics and issues of individual interest. Using an inquiry framework, scholars will investigate using multiple sources and develop solutions to a complex problem or challenge. This course includes academic reading and writing and delivery of oral and visual presentations.		
Open to scholars in grade 9		

SAT/ACT Prep		
1 semester	0.5 credit	
Not offered in 2020-21 This course is designed to teach the test-taking skills necessary to master college admission tests. Scholars will learn techniques, concepts, and question types that apply to the exam. Time will be spent during each class practicing test questions.		
Open to scholars in grade 11		

Service in the Community		
1 semester	0 credit	
Service in the Community is an opportunity for juniors and seniors to give back to the East Hartford Community. During a block of time each week, a scholar who applies and is accepted for this position will be responsible for working with the community on or off campus. The director of the institution in which a scholar volunteers as well as the Internship and Community Service Coordinator will evaluate scholars. Scholars will receive community service hours. Applications for community service are posted on ctriveracademy.org and must be completed and returned to the Internship and Community Service Coordinator by the specified deadline.		
Open to scholars in grade 10, 11 and 12		

ENGLISH

English Course Sequencing Options by Grade

Grade 9	English 9	English 9	English 9
Grade 10	English 10, English 088: College Prep English 1A and/or English 099: College Prep English 2	English 10	English 10
Grade 11	English 101: English Composition & English 102: English Literature	English 11 (.5), English 088: College Prep English 1A and/or English 099: College Prep English 2	English 11 (.5), English 088: College Prep English 1A and/or English 099: College Prep English 2
Grade 12	Goodwin College English Elective	English 101: English Composition & English 102: English Literature	English 099: Reading/Writing Connection or English 12

Color Code

CTRA Credit

Dual Credit

Goodwin College Credit

ENG 9 Freshman English

1 year

1 credit

During this course, scholars will read selections from the genres of the short story, fiction, non-fiction, poetry, and drama. Scholars will explore thematic questions related to identity, beauty, love, family, race, freedom, and human nature as they read and study the various genres. Scholars will also study vocabulary, composition, practical grammar, literature, and public speaking. Scholars will be responsible for writing in their journals, completing projects in class, giving oral presentations, and participating in online and class discussions throughout the year. Scholars will be given many opportunities for critical thinking and cooperative learning throughout the course.

Required for Grade 9

ENG 10 Sophomore English

1 year

1 credit

During this course, scholars will further enhance their skills in oral and written expression and reading comprehension. Scholars will explore various literary genres emphasizing upon how an individual's actions impact his or her society and environment. Through discussion, scholars will respond to literature by analyzing character motivation, making connections, and evaluating the text. Scholars will further develop their critical and independent thinking skills throughout the writing process. Forms of writing will include MEAL paragraph, literature-based essay, and analytical writing using APA format. Writing and vocabulary are integral parts of the curriculum that will be studied and applied throughout the course.

Required for Grade 10**ENG 11 Junior English**

1 semester

0.5 credit

What does the American dream mean? During this 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 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. Additionally, 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.

ENG 12 Senior English 1

1 semester

0.5 credit

Not offered in 2020-21

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.

ENG 12 Senior English 2		
1 semester	0.5 credit	
Not offered in 2020-21 This course is designed to help scholars become careful and critical readers of nonfiction, specifically memoirs. Emphasis will be placed on distinguishing bias, analyzing multiple points of view and perspectives, and composing both written and oral arguments about a variety of controversial and global issues.		

ENG 235 American Literature II		
1 semester	0.5 credit	3 college credits
This course introduces students to selected works of literature that represent major trends in American literature since the end of World War II. This course will help students understand the relationship between literature and life in contemporary America.		

Senior English		
1 year	1 credit	
This course is offered to seniors and will allow them to continue to develop their reading, writing, and communication skills with a focus on equipping them with the tools they need to be successful in both academic and professional situations. Scholars will be expected to integrate technology into several project-based learning assignments in order to practice solving real-world problems. These projects and the course as a whole will allow scholars to showcase their communication, writing, and critical thinking skills.		

English Electives

Creative Writing		
1 semester	0.5 credit	
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 credit	

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.

ENG 088 College Prep English 1A

1 semester

0.5 credit

This course is designed to enhance scholars' competence in reading, writing, and speaking in preparation for college-level assignments. Emphasis is on developing strategies for reading and writing. Students analyze a variety of readings through class discussions and written responses that focus on comprehension as well as sentence, paragraph, and essay structure and format. The goal of this course is to improve reading comprehension, vocabulary, and fundamental writing skills for scholars planning on taking English 099 at CTRA, followed by English 101 at Goodwin.

Prerequisite: Placement evaluation score, or teacher recommendation.

Note: Scholars must pass the final exam and earn a grade of 85 or better to take ENG 099.

ENG 099 College Prep English 2

1 semester

0.5 credit

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: 85 or better in ENG 088, or teacher recommendation.

Note: Scholars must earn a grade of 85 or better as one of the criteria to take ENG 101.

ENG 101 English Composition at Goodwin University

1 semester

0.5 credit

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 ENG 099

ENG 102 Composition and Literature at Goodwin University

1 semester

0.5 credit

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: 80 or better in ENG 101

HEALTH & WELLNESS

Health

Health and Wellness

1 semester

0.5 credit

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.

Physical Education

Game Tactics

1 semester

0.5 credit

Not offered in 2020-21

This course is designed for those scholars who have an interest in increasing their skills and knowledge of games, especially non-traditional games. Scholars will work to improve individual competence, analyze performance in self and others, and peer coach. Scholars will identify the fundamental skills required in each game, work to create game strategies, and reflect on what and why certain strategies lead to success.

Individual/Team Sports

1 semester

0.5 credit

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.

Lifetime Fitness		
1 semester	0.5 credit	
This class will consist of different styles of fitness and different fitness programs. This class is designed to provide students with a different look into fitness as opposed to our traditional PE classes which focuses on games. The goal is to provide students with options to generate interest in being physically active, that will hopefully stay with them in their lives. Some examples would be Yoga, Pilates, Tai chi, Kickboxing, Crossfit, Zumba, P90X, Insanity, and many more.		

Personal Training		
1 semester	0.5 credit	
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

1.5 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

Algebra 2 Accelerated

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: 85 or better in Algebra 1 and Geometry

Algebra 2 Everyday

1 year

1 credit

Not offered in 2020-21

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: Successful completion of Algebra 1		

Geometry Accelerated		
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: 85 or better in Algebra 1		

Math 254 Calculus		
1 semester	0.5 credit	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 Pre-Calculus		

Math 255 Calculus II		
1 semester	0.5 credit	4 college credits
Not offered in 2020-21 This is a second course in calculus and intended 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, and technology. Topics included are integration, differential equations, applications of integration, integration techniques, improper integrals, sequences and series, conics, parametric equations and polar coordinates.		
Prerequisite: 80 or better in Calculus		

Pre-Calculus		
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: 80 or better in Algebra 2		

Transition to Algebra		
1 year	2 credit	
Not offered in 2020-21		
Transition to Algebra seeks to give scholars the mathematical knowledge, skills, and confidence to succeed in a first year Algebra class. It is designed to build scholars algebraic habits of mind, key mathematical ways of thinking, aligned with the Common Core standards for mathematical practice.		

Math Electives

MATH 097 Topics in Arithmetic		
1 semester	0.5 credit	
This course develops the basic mathematical skills required for all subsequent mathematics courses. Topics include whole numbers, estimation, rounding, order of operations, exponents, fractions, decimals, ratios, proportions, percents, square roots, signed numbers, algebraic expressions, solving linear equations in one variable, and introduction to probability and statistics. Students must show competency on 8 curriculum modules. Students have access to videos, assignments, and quizzes both in the math lab and also from any computer with internet access. The class meets weekly at a scheduled time for 3 hours. Students are required to spend an additional 9 hours outside of their allocated class time or reach the weekly target, whichever comes first. Each student is also expected to spend a minimum of 2 additional hours in the math lab at their convenience during math lab hours. Math 097 does not count towards credit requirement for any certificate or degree programs.		

Math 254 Calculus		
1 semester	0.5 credit	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 Pre-Calculus		

Math 255 Calculus II		
1 semester	0.5 credit	4 college credits
Not offered in 2020-21		
This is a second course in calculus and intended 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, and technology. Topics included are integration, differential equations, applications of integration, integration techniques, improper integrals, sequences and series, conics, parametric equations and polar coordinates.		
Prerequisite: 80 or better in Calculus		

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 scholars in grades 11 and 12		

Mathematics of Finance 2		
1 semester	0.5 credit	
Not offered in 2020-21		
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 scholars in grades 11 and 12		

Statistics and Probability		
1 year	1 credit	
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 & Geometry		

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.

Introduction to Audio Engineering, Composing, and Arranging

1 semester

0.5 credit

Students will learn to create your own original grooves by analyzing, writing, sequencing, and recording the rhythms and styles that have influenced Western contemporary music. Learn how to construct your own melodic, harmonic, and rhythmic language through the study of modern twentieth century compositional techniques. In this music composition course you'll develop your unique, compositional voice to write music for visual media, concerts, recitals, or personal enjoyment.

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. These programs stress hands-on experience with Pro Tools software and equipment used in the recording industry. Students study where electronic sounds originate and the way sound signals are processed. They will learn about different types of microphones and the techniques used to mic live sound.

Introduction to Guitar

1 semester

0.5 credit

This course is designed to provide basic skills for beginning guitar students. Students will learn:

- basic chords and strum patterns
- music reading and study skills
- technical exercises
- Music in a variety of styles; chords; scales; riffs and patterns
- To play a variety of solo and ensemble literature

Music Technology		
1 semester	0.5 credit	
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.		

Piano/Keyboard Lab		
1 semester	0.5 credit	
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.		

World Drumming		
1 semester	0.5 credit	
Not offered in 2020-21 World Music Drumming will be a hands-on, performance-based class exploring the traditions and techniques of drumming from cultures around the world. No previous musical experience is necessary, as most of the material will be taught through the aural tradition, customary in other cultures. All instruments and materials will be provided.		

SCIENCE

Grade 9	Environmental Science
Grade 10	Biology
Grade 11	Chemistry, Environmental Chemistry or Material Science
Grade 12	Physics, Advanced Sustainability, Chemistry. Environmental Chemistry or Material Science

Advanced Sustainability Research and Action

1 year	1 credit	
Physical Science / Lab Science		
<i>Advanced Sustainability Research and Action</i> prepares students to use critical thinking and problem-solving skills in the context of scientific investigations that have relevance in our community. Course material, classroom activities, teaching/learning interactions, and projects focus on questions, authentic problems or challenges that need science knowledge and skills to address. The course will provide students opportunities to: • research science and its social and historical context • use critical thinking skills in scientific analysis • undertake research and/or action with a view of engaging with science for extended periods of time		
Open to scholars in grade 12		

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 scholars		

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 scholars in grades 11 and 12		
Prerequisite: 75 or better in Algebra 1 or 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 scholars		

Introduction to Physical Science		
1 semester	0.5 credit	
Physical Science / Lab Science		
Not offered in 2020-21		
This course is designed to prepare scholars for future success in chemistry and physics. Scholars explore the relationships between matter and energy by investigating force and motion, the structure of atoms, the structure and properties of matter, chemical reactions, and the interactions of energy and matter using scientific practices. Scholars will develop and use models, plan and conduct investigations, analyze and interpret data, use mathematical and computational thinking, and construct explanations and critiques.		

Materials Science		
1 year	1 credit	
Physical Science / Lab Science		
What goes into making a sneaker? What makes metal so strong? Why does clay become stronger when we heat it? This project-based lab-intensive course will help students understand the importance of materials in our daily lives and why we choose different materials for different purposes. Students will develop a deeper understanding of the connections between the science of materials and their ultimate use by constructing relevant products using manufacturing technologies.		
Open to scholars in grades 11, 12 or 10 with teacher recommendation		

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 credit	
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 scholars in grade 10,11, 12		

Agriculture, Aquaculture, and Animals 2		
1 semester	0.5 credit	
Life Science		
This course will build upon basic animal, agriculture, and aquaculture concepts completed in AAA 1 to immerse scholars in a student-designed leadership experience. The components of this course will include serving as a Lab Manager in the AAA 1 course, advancing to complete an equine program and utilizing the greenhouse for an independent study project that will benefit CTRA's habitat center. Emphasis will be placed on real-life training and the application of industry skills and technologies.		
Open to 4 scholars per section in grades 11 or 12; prerequisite: B or higher in AAA and teacher recommendation.		

Climate and Society		
1 semester	0.5 credit	
Physical Science		
Not offered in 2020-21 In this course, scholars will explore the concept of climate change, its effect on society, and how society contributes to climate change. Scholars will work with information from national and regional organizations to get the facts on climate change as well as explore current climate issues. As informed citizens, they will spread the news and educate others on how to slow down carbon emissions by taking actions in conserving our resources locally and throughout the world.		

Engineering		
1 semester	0.5 credit	
Physical Science		
This course gives scholars an introduction to engineering through a series of assignments, hands-on design projects, and guest presenters. Scholars will learn about and use the design process to design, build, test, and redesign a variety of products. Scholars will explore the areas of civil, mechanical, chemical, biomedical, and computer/electrical engineering. They will also consider how engineering can improve the quality of our lives and of the environment in which we live.		

Food Systems		
1 semester	0.5 credit	
Life Science		
Not offered in 2020-21 Food systems are one of the hottest social science issues facing the world today. Scholars will explore genetically modified organisms (GMO's), sustainable farming and economics of food. In addition, the scholars will examine issues related to food quality and access. Scholars will engage in projects related to industrial food production and compare them to alternative approaches. They will experience hands-on activities that produce nutritious food using technologies such as aquaculture, hydroponics, greenhouses, and green-roof gardens. This classroom and laboratory course will take an interdisciplinary approach to examine how food is connected to health, justice and the environment.		

Forensics		
1 semester	0.5 credit	
Physical Science / Lab Science		
Not offered in 2020-21 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.		

Human Body Systems 1		
1 semester	0.5 credit	
Life Science		
Not offered in 2020-21 Scholars will learn basic human anatomy and disorders for selected body systems (Nervous system, Cardiovascular system, and Respiratory system) in the context of potential medical careers and their educational requirements. Scholars will also be introduced to medical terminology with an emphasis on specific diseases and disorders. Scholars will investigate the environmental factors that impact health. This course offers CPR certification in an effort to increase trained responders within multiple communities.		
Open to scholars in grades 10, 11, 12		
Prerequisite: Grade of C or higher in Biology		

Human Body Systems 2		
1 semester	0.5 credit	
Life Science		
Scholars will learn basic human anatomy and disorders for selected body systems (Skeletal system, Muscular system, and Reproductive system) in the context of potential medical careers and their educational requirements. Scholars will also be introduced to medical terminology with an emphasis on specific diseases and disorders. Scholars will also investigate the environmental factors that impact health. This course offers First Aid Certification in an effort to increase trained responders within multiple communities.		
Open to scholars in grades 11 and 12		
Prerequisite: Grade of C or higher in Biology		

Introduction to Field Studies of the CT River		
1 semester	0.5 credit	
Life Science		
Not offered in 2020-21 This course will introduce scholars to the basics of field studies. Basic scientific naming and identification of common plant, insect and bird species of the Connecticut River will be explored along with their impacts on the sustainability of the environment. Some fundamental procedures of data collection for use in citizen science based data collection will also be studied. This course requires regular participation in outdoor activities involving sample collection and analysis of various species surrounding the CTRA campus.		

Marine Science		
1 semester	0.5 credit	
Life Science		
Not offered in 2020-21 This course focuses on specific marine ecosystems, including coastlines, estuaries, marshes, coral reefs, and the open ocean, culminating in a study of current events and the human footprint on our oceans. It combines a study of the biological, physical, and chemical aspects of the marine environments as well as the social forces that impact this shared resource.		
River Ecology		
1 semester	0.5 credit	
Life Science		
What lives in the river, and how are these plants and animals sustained? This outdoor learning course will explore the relationships among the microbes, plants, and animals in freshwater habitats. Students will gain an appreciation of rivers as dynamic and constantly evolving ecosystems as well as acquiring skills to conduct scientific observations and analyze data related to river ecosystems and management issues. This course will focus on field-based investigations by using our school's boat, canoes, and underwater technologies such as robotics to explore the CT River and its tributaries.		
Prerequisite: Passing Grade in Environmental Science or Educator Recommendation		
Water Resources Stewardship		
1 semester	0.5 credit	
Physical Science		
Not offered in 2020-21 Scholars will explore how humans interact with water on a daily basis, including personal consumption, manufacturing, and especially transportation and recreation. Scholars will learn the basics of boating safety, navigation, and water resources stewardship.		

Wildlife Ecology		
1 semester	0.5 credit	
Life Science		
This course features lessons and laboratory activities that explore the diversity and ecology of wildlife. Topics include population and community ecology, wildlife biology, wildlife capture and monitoring, track identification, local wildlife identification and taxonomy, human conflicts, sustainable harvest, the effectiveness and purpose of national parks and national forest, invasive species and conservation biology. Scholars will define problems and create an action plan to make a difference in future wildlife preservation issues.		
Open to scholars in grades 10, 11, 12		

SOCIAL STUDIES

Grade 9	Geography & Global Development
Grade 10	Civics & Community Development in the CT River Region
Grade 11	US History
Grade 12	

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 10 Scholars

Community Development in the Connecticut River Region

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 10 Scholars

Geography and Global Development		
1 year	1 credit	
The Geography and Global Development Curriculum has scholars use the Five Themes of Geography as a framework for regional case studies (i.e. CT River Region, Latin America, Europe, Middle East, Africa, and Asia). Scholars examine the history of each region studied as well as contemporary issues associated with the development of more sustainable societies. Throughout the course, scholars improve their spatial awareness, organization, writing, researching, and higher-order thinking skills while developing the habits of mind necessary for successful participation as a global citizen.		
Required for Grade 9 Scholars		

Intro to Psychology		
1 semester	0.5 credit	
This course offers scholars at the Connecticut River Academy a unique opportunity to think flexibly about the workings of the mind and the behavior of people. Scholars will investigate brain functions and the evolution of their personalities and apply their findings to coping with the numerous changes in their lives. Seniors at CTRA will walk away with an action plan of lifelong learning strategies that will help them achieve their diverse goals. Furthermore, scholars will utilize their knowledge of altered states of consciousness and mental health to increase awareness of important psychological issues.		
Open to grade 12 scholars		

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 Scholars		

Urban Studies		
1 semester	0.5 credit	
By 2050, more than two-thirds of all people will live in nearly 400 urban areas. This massive movement of people is pushing our civilization to the limits. It is also said that by the year 2043 whites will no longer make up the majority of society. This may be new on the national level, but in many ways this has been true in urban areas for decades. This reality makes people ask, "Does the current urban America represent the "new normal" in our society?" In this course we will apply Habits of Mind to study urban places, centers of power, oral histories, and social action - all of this while planning for life in the future. This course will focus heavily on field experience.		
Open to grade 12 scholars		

Social Studies Electives

American Ideals Through Film

1 semester

0.5 credit

Not offered in 2020-21

American Ideals through Film is a social studies course where students will develop the skills necessary to become lifelong learners from what they see on the silver screen. . People from all over the world flock to theaters for entertainment purposes, but this course will help students leave with more than just popcorn kernels on their shirt. How do films show multiple perspectives in America? Why is empathy, both historical and current, such an important skill to possess and how can watching a movie help develop it? How can we use film as the vehicle for discussing controversial issues? The class will look at movies created throughout American history in order to become experts these important skills. This course will be much more than just watching movies with our feet up but instead we will begin to understand the power of film.

Deliberation

1 semester

0.5 credit

Not offered in 2020-21

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.

Food Systems 1

1 semester

0.5 credit

Not offered in 2020-21

Food systems are one of the hottest social science issues facing the world today. Scholars will explore genetically modified organisms (GMO's), sustainable farming and economics of food. In addition, the scholars will examine issues related to food quality and access. Scholars will engage in projects related to industrial food production and compare them to alternative approaches. They will experience hands-on activities that produce nutritious food using technologies such as aquaculture, hydroponics, greenhouses, and green-roof gardens. This classroom and laboratory course will take an interdisciplinary approach to examine how food is connected to health, justice and the environment.

Gender Studies		
1 semester	0.5 credit	
We interact with men and women everyday but we typically do not discuss what these labels really mean. This course will delve deeply into how culture influences gender roles. We will study where and why discrimination against women still exists today while tackling stereotypes of today's men. Topics to be discussed include but are not limited to double standards between men and women, sexist language in the entertainment industry, and the roots of body image issues. We will research the history of individuals, events, and movements that seek to improve gender equality.		

Global Perspectives		
1 semester	0.5 credit	
Not offered in 2020-21		
Global Perspectives will inform students of the various perspectives associated with current international issues while fostering empathy and tolerance. Students will use technology to evaluate a variety of academic, popular, and personal media. Students will research and organize information that pertains to significant economic, political, social, and environmental issues facing the international community. This course will actively engage students in opportunities that promote democratic dialogue.		

HIS 112 Tracing the African American Experience		
1 semester	0.5 credit	3 college credits
The course is an overview of the field of African American Studies. Interdisciplinary in nature, African American Studies embraces history and literature, the arts and material culture, as well as sociological, political, economic, public policy, and philosophical perspectives on the experience of people of African descent in the United States		
Open to scholars in grade 12		

Introduction to Economics		
1 semester	0.5 credit	
Not offered in 2020-21		
This course will give scholars a greater understanding of microeconomics by allowing them to develop and manufacture a product that they will market. The course relates manufacturing and business to the study of economics and then combines sustainable real life skills such as completing tax paperwork for your job, applying for loans for college, filing your own taxes, opening a bank account and applying for a credit card. Scholars will study topics that include supply and demand, scarcity, profit and loss, labor costs, price fixing, credit, money and banking and debt.		
Open to scholars in grades 11, 12		

Identity, Culture, and Community		
1 semester	0.5 credit	
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 scholars		

PSY 112 Introduction to Psychology at Goodwin University		
1 semester	0.5 credit	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		

Social Justice		
1 semester	0.5 credit	
Not offered in 2020-21 Scholars will identify injustice in society at the local, national, and international level. Through research, course readings, and project completion, scholars will understand, recognize, and describe general characteristics of injustice and how unjust systems, including environmental and social injustices, are self-perpetuating. Participating scholars will develop solutions to injustices in society and discover how to implement those solutions in a productive manner. In addition to research, scholars will volunteer for local organizations whose missions are to level the playing field and/or support community building.		
Open to scholars in grades 10, 11, 12		

Sociology		
1 semester	0.5 credit	
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 gets 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 scholars in grades 10, 11, 12		

SUPPORT

College Study Group

1 semester

0.0 credit

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.

Required for Goodwin Year 1 scholars

Learning Center

1 semester

0.5 credit

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.

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 credit

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.

Extended Learning		
1 semester	0.5 credit	
This course helps students in achieving academic success through the development and reinforcement of necessary academic skills. Scholars work to improve their learning effectiveness through daily academic and habits of mind goal setting. Scholars have the opportunity to receive assistance with their coursework assignments.		

Math Lab		
1 semester	0.5 credit	
Scholars are identified and placed in this course based on standardized test scores and/or performance in previous math courses. The class is intended to prepare scholars for success by reinforcing concepts and skills needed in high school mathematics. Instruction will include pre-assessing, pre-teaching, re-teaching, and reinforcing math skills and concepts. Scholars will also develop and self-regulate personal study and organizational skills imperative for academic success.		

Strategic Reading		
1 semester	0.5 credit	
Scholars are identified for this course through a review of academic history, standardized test performance, and teacher recommendations. This course uses whole language to develop college readiness in the areas of reading and writing. Emphasis will be placed on increasing vocabulary, developing comprehension skills, utilizing critical reading strategies, improving grammar, and applying outlining and note-taking skills while reading.		

Study Hall		
1 semester	0.0 credit	
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.		

Writing Lab 1 and 2		
1 semester	0.5 credit	
Scholars are selected by a review of academic history, standardized test performance, and teacher recommendation. This course focuses on the foundational writing skills required for college readiness and success in ENG 088. Scholars will improve their writing ability by developing proficiency in essay structure, formatting, and style; as well as grammar, vocabulary, annotation, and reading stamina.		

TECHNOLOGY

Computer Science and Robotics Principles

1 semester

0.5 credit

This course is an introduction to computer science, programming, and robotics as it teaches science, technology, engineering, and mathematics (STEM). In this half-year course, students will learn the basic concepts of writing code by working with a variety of programs to create interactive games and simulations and control robotic devices. Students will learn how to use feedback from sensors, applied mathematics and measurement to program their robot to navigate in its environment. Students will have the opportunity to complete multiple challenges involving guided research, problem-solving, working in teams, computer-aided design (CAD) and design documentation by means of an Engineer's Notebook. Many of the activities facilitate the hands-on presentation of design practices used by engineers and technicians.

Introduction to Electronics

1 semester

0.5 credit

Not offered in 2020-21

Would you like to know more about the “digital world”? This introductory course is designed to teach scholars the basics of electronic devices and methods used in circuit design. Scholars will learn foundational concepts and skills and progress to working with simple controller units like the Arduino and Raspberry Pi platforms to design and create projects.

Introduction to Engineering Graphics

1 semester

0.5 credit

Not offered in 2020-21

Ever wondered what goes into designing something? How does an idea become reality? In Engineering Graphics scholars explore the world of Computer-Aided Drawing and Design (CADD) to see how a product goes from a concept to a reality. No artistic skill needed to learn industry standard software (AutoCAD Suite and Solidworks) to create 2-dimensional and 3-dimensional designs and models that can be turned into real world products using 3D printers, laser cutters, vinyl cutters and CNC machinery.

Introduction to Manufacturing Technology		
1 semester	0.5 credit	
Not offered in 2020-21 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.		

Foundations of Technology		
1 semester	0.5 credit	
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 scholars		

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 take this course anytime during their career at CTRA and are able to enroll into the course more than once for credit.		