



**Early College  
High School**

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Course Description Book**

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**2018-2019 Academic Year**

Updated: January (1/5/18)

## Marysville STEM Early College High School

*The world no longer cares about what you know; the world cares about what you can do with what you know. —Tony Wagner*

This is a new high school for Marysville students that was created through a partnership with the Marysville Schools, Honda, Ohio Hi Point, Union County Chamber of Commerce and Columbus State. It is funded through a Straight A grant from the state with the intention of providing students with an integrated curriculum based on real world experiences.

**What is STEM?** The acronym is Science, Technology Engineering and Math but it is much more than those four subjects. STEM is a unique approach to teaching and learning that fosters creativity and innovative thinking in all students. STEM schools are centers of creativity and innovation that provide challenging, student centered, inquiry based educational experiences that are cross-disciplinary in nature and relevant to the real world.

**What is Early College?** Early college high school is a bold approach, based on the principle that academic rigor, combined with the opportunity to save time and money, is a powerful motivator for students to work hard and meet serious intellectual challenges. Early college high schools blend high school and college in a rigorous yet supportive program, compressing the time it takes to complete a high school diploma and the first two years of college. Students completing early college high schools graduate with a high school diploma and up to two years of college credit.

**WHO?** Any 8<sup>th</sup> grade student from Marysville that is eligible for promotion to the ninth Grade and is interested and excited about the opportunity to attend a STEM Early College High School. While this school will certainly appeal to students who want to explore careers in the STEM fields, all students regardless of their interests can benefit from the personalized learning experiences, problem-based learning and assessments, high expectations and the smaller size of the school.

**WHY?** Our goal is to create a challenging, vibrant learning community for students to become career and college ready through an inquiry-based, student centered curriculum. 80% of the fastest growing occupations in the United States depend upon mastery of mathematics and scientific knowledge and skills, but students are not currently equipped to satisfy this growing need. Early College high schools establish supportive conditions to prepare students for success in a rigorous, well- structured academic program leading to high school graduation and up to two years of college credit.

## OVERVIEW OF SCHEDULING

	<b>Timeline</b>	<b>Action</b>	<b>Responsibility</b>
<b>1. Gather Data</b>	Jan./Feb.	Courses selected by each student.	Student & Parent
<b>Verification of student requests</b>	Feb.	Each student will receive a printout of courses requested to check for accuracy.	Student & Parent
<b>2. Sections created</b>	Mar.	Numbers of student requests totaled and sections created.	Administration/Dept. Chairs
<b>Master schedule created</b>	Apr.	Number of sections for each course & teacher availability.	Administration/Counselors/Staff
<b>3. Computer generates students' schedules</b>	Apr.-Aug.	Schedules created randomly by computer – Counselors fix schedule conflicts.	Tech Department and Guidance
<b>Student schedules complete</b>	Aug.	Students will pick up their schedule at ECHS prior to the 1st day of school.	Student & Parent

## POWERSCHOOL & SCHOOLGY

Access to student grades, assignments, attendance, contact information, etc. is available by using PowerSchool. Access to assignments is also available by using Schoology. Parents and students can create or modify an account by contacting the MECHS Main Office. It is very important to keep your email address up-to-date as we send newsletters, grades, notifications, and other various information via email.

## POWERSCHOOL COURSE REQUEST

*How to Enter Course Requests in the Student Portal:*

The web browser will be open for scheduling beginning February 2018 to schedule classes for the 2018-2019 school year. Open PowerSchool in your web browser and enter your username and password, and click enter. Click Class Registration and select your course requests from each department (to see the courses click on the pencil on the right side of the screen). Once you have selected all the courses you want to take—click Submit.

## CREDIT FLEXIBILITY

The Marysville Board of Education recognizes that an effective educational program is one that provides opportunities for students to customize aspects of their learning around their respective needs and interests. Credit Flexibility is one method to motivate and increase student learning by allowing access to more resources, customization around individual student needs and the use of multiple measures of learning.

Credit Flexibility shifts the focus from “seat time” to performance. Students can earn units of high school credit based on an individually approved Credit Flexibility plan. The intent of Credit Flexibility is to meet increased expectations for high school graduation in response to globalization, technology and demographics, and to meet the demand for college and career readiness skills.

Marysville Early College High School offers Credit Flexibility opportunities to students in grades 8-12 in all classes. To successfully earn credit, mastery of content and certain abilities and skills must be demonstrated through a formal examination, a culminating project, and/or a presentation.

There are three modes of credit flexibility (not for repeat credit):

1. Test Out

2. Virtual Learning

3. Independent Study

### *Credit Flex Results*

Results (grade and credit/no credit) will be made available to the parent and student within a week after the test date. All Credit Flexibility grades will be posted on a student’s transcript and be figured in a student’s GPA.

### *Credit Flex & AP Examinations*

Students may use Credit Flexibility by taking any Advance Placement Exam (even when not enrolled in an AP class) in May by properly registering with the Guidance Office by February 11th. Fee for 2017 tests is \$93.00 per test (current fee). Students must earn a score of “3 - well qualified” or higher on the AP exam to successfully receive credit for the AP course. Grades will be assigned as 3 = C, 4 = B, and 5 = A.

### *Athletic Eligibility*

Courses attempted or grades received through Credit Flexibility may count toward athletic eligibility under the rules of the Ohio High School Athletic Association. Students will be required to show progress at the end of each quarter to ensure eligibility. Failure to do so would result in the credit NOT to be counted towards OHSAA athletic eligibility. Credit Flexibility credits earned in the summer will not count towards eligibility. However, courses attempted through credit flex may not count at the NCAA Clearinghouse. Please work closely with the athletic director and your counselor if you are thinking about playing sports in college.

## TEST OUT

*Test Out is designed for students who feel that they already know the material and do not need to receive instruction. Test Out is not for repeat credit and will not count towards athletic eligibility. After meeting with your counselor you should follow these steps:*

1. Submit a completed Credit Flex application to a guidance counselor. Applications can be found in the Guidance Office.
2. A confirmation of the request will be emailed to the parent or guardian, which will include the location, date and time for the examination or the due date of the project or presentation. Requests for date and time change must be approved by an administrator.
3. Students attempting to earn credit in courses requiring an examination will be given a textbook and syllabus detailing the course objective. Textbooks are required to be returned on or before the examination date. Students will be assessed the cost (retail for new) of replacing lost textbooks.

## VIRTUAL LEARNING

*At Marysville Early College High School, students have the opportunity to take coursework virtually as part of credit flexibility. The student is responsible for any costs related to Virtual Learning. The procedure for completion of virtual learning coursework are outlined below.*

1. In order to take advantage of this option, please complete the Application for Virtual Learning. Students may apply to use virtual coursework vendors and institutions such as iLearnOhio by completing the application for Virtual Learning. Coursework through vendors must be pre-approved by the Credit Flexibility Panel (Principal, Guidance Counselor, and Department Chair of the designated department). All course vendors must be accredited institutions.
2. Students will be assigned a grade based upon the institution's scale.
  - Students have the option of accepting the grade for high school credit. These grades are reflected on high school transcripts and impact class rank.
  - Weights, grading, and Carnegie Unit scales will be the same as if the student attended the course. Course credits and weights are listed annually in the Course Description Handbook. Students can also receive credits for AP course tests in this manner.
  - The grading scale of AP tests shall be as follows: A score of 5 on the AP test will receive a weighted "A." A score of 4 on the AP test will receive a weighted "B." A score of 3 on the AP test will receive a weighted "C".

\*\*Please see valedictorian policies.

## NCAA/NAIA CLEARINGHOUSE INFORMATION

### *NCAA*

Any athlete considering participating in the NCAA should register online and read eligibility information at the NCAA Eligibility Center website. It is the student's responsibility to register for and complete required courses per NCAA requirements. Please see the athletic office for additional information.

### *NAIA*

Please refer to the NAIA website for eligibility requirements: <http://www.playnaia.org>.

## INTERNSHIPS/JOB SHADOWING

Our goal is to prepare all students for their future by getting them college and career ready. Marysville Early College High School is offering internship opportunities for all senior students that are interested in their respective pathways. Once these students begin scheduling, they can access an application form to apply for the internship either during first semester or second semester. The Internship Coordinator will meet with the student for a brief interview. A writing prompt about why the student wants to participate and plans after high school will be due, along with a sample resume. For the first few weeks, students will spend time in class completing business correspondence, learning about professionalism, career interests, and other career related topics. More information is outlined on the application.

### BENEFITS FOR THE STUDENTS

1. Fosters an understanding about in demand careers in which students might be passionate about.
2. Highlights employer and workplace expectations.
3. Develop job skills as well as soft skills (collaboration, creativity/innovation; communication, critical thinking and problem solving.)

## STEM TALKS

S.T.E.M. (Students Teacher Experts Mentors) Talks focuses on professionals sharing their stories and real life experiences. They share the challenges and responsibilities of their jobs on a daily basis. They also discuss the difficulties they face in their careers and the paths they took to get to where they are now. The goals of these talks are to introduce students to careers in a specific field, explore pathways to reach their career goal and expose the students to the solutions of problems that are occurring in that pathway. This is available to all grade levels. Students must sign up for participation.

## GRADUATION REQUIREMENTS CLASS OF 2018 AND BEYOND

*Completing these requirements makes you eligible to apply to a 4-year public college in Ohio.*

Credits	Subject	Requirements
4	<b>English</b>	
4	<b>Mathematics</b>	Must include Algebra 2 or equivalent
3	<b>Social Studies</b>	Must include 1 credit each of US Government, US History, & World Studies
3	<b>Science</b>	Must include Physical Science (formerly Science 1 & 2), Biology, 1 credit of Advanced Science
0.5	<b>Health</b>	
0.5	<b>Physical Education</b>	Or exemption
1	<b>Fine Arts</b>	Must be taken at high school level (or exemption)
<b>Other Requirements</b>		
<b>Financial Literacy &amp; Economics</b> (U.S. Government, CSCC Economics, Health Science & Technology)		
<b>Elective Credits:</b> Any credits taken in the above Core areas beyond the graduation requirements or taken in any other departments - Agriculture, Business & Technology, Fine Arts, Foreign Language (4 year colleges require at least 2 years in the same world language), Wellness, and Ohio Hi-Point Career Technology.		
5	<b>Elective Credits</b>	If no exemptions used
5.5	<b>Elective Credits</b>	If PE exemption used
5.5	<b>Elective Credits</b>	If ½ credit Art exemption used
6	<b>Elective Credits</b>	If 1 credit Art exemption used
6	<b>Elective Credits</b>	If ½ credit Art and PE exemption used
6.5	<b>Elective Credits</b>	If 1 credit Art and PE exemption used
21	<b>Total credits required to graduate</b>	

## GRADUATION REQUIREMENTS

### AND MUST MEET ONE OF THE FOLLOWING:

#### Ohio's State Tests

1. Students **earn a cumulative passing score of 18 points**, using seven end-of-course state tests. To ensure students are well rounded, they must earn a minimum of four points in math, four points in English and six points across science and social studies.

PERFORMANCE LEVEL	GRADUATION POINTS
<b>Advanced</b>	5
<b>Accelerated</b>	4
<b>Proficient</b>	3
<b>Basic</b>	2
<b>Limited</b>	1

#### End-of-course exams are:

- Algebra I and geometry or integrated math I and II
- Biology
- American history and American government
- English I and English II

Students studying Advanced Placement (AP) or International Baccalaureate (IB) courses in biology, American history or American government may take and substitute test scores for end-of-course state exams to avoid double testing. Students also may substitute grades from College Credit Plus courses in these subjects for end-of-course state exams.

#### 2. Industry credential and workforce readiness

Students earn 12 points through a State Board of Education-approved, **industry-recognized credential or group of credentials** in a single career field and achieve a **workforce readiness score** on the **WorkKeys** assessment. The state of Ohio will pay one time for those who take the WorkKeys assessment.

#### 3. College admission test

Students earn “remediation-free” scores in English language arts and mathematics on a nationally recognized college admission exam. The state of Ohio will pay one time for all 11th grade students in the classes of 2018 and beyond to take the exam free of charge.



## PHYSICAL EDUCATION & FINE ART EXEMPTIONS

*Physical Education Exemption* – The Marysville Board of Education adopted a policy to excuse a student for the high school Physical Education Requirement if, during high school, the student has participated in interscholastic athletics, marching band, or cheerleading for at least two full seasons. However, the student shall be required to complete one-half unit (.50 credits), consisting of at least 60 hours of instruction, in another course of study. This policy is governed by rulings from the Ohio Department of Education. Any student interested in exempting PE should see the Athletic Director to get the Physical Education Exemption once they have completed the two seasons that qualify for the exemption.

*Fine Arts Exemption* – The Ohio Department of Education allows students to use fine arts coursework completed at the 7th and 8th grade level to satisfy all or part of the high school fine arts requirement. No actual credit is awarded on the high school transcript but the requirement to take Fine Art for graduation is waived (in part or in full). The student however, is required to complete either one unit (1 credit) or one-half unit (.50 credits), in another course of study to meet the 21 credits required for graduation. Any student wishing to enter a four year college must follow the “college core” by completing 1 full credit of Fine Art at the high school.

*Design thinking* is a fine arts credit students will earn at the end of their sophomore year. This credit is given as evidence of the design challenges and design critical thinking skills embedded into the courses.

*How is credit exempted?* One-half credit (.50) is waived if the student has completed a fine arts course(s) for the equivalent of one semester during the student’s 7th and/or 8th grade year. One full credit (1.0) is waived if the student completed at least two full semesters of fine arts during the student’s 7th and/or 8th grade year. Credit will be waived from the student’s transcript automatically upon promotion from 8th grade to 9th grade.

## HONORS DIPLOMA FOR COLLEGE PREP & CAREER TECHNICAL CURRICULUM

Students need to fulfill all but **one** criterion for any of the following diploma with honors:

Subject	Academic Honors Diploma	Career-Technical Honors Diploma	Stem Honors Diploma
<b>English</b>	4 units	4 units	4 units
<b>Mathematics</b>	4 units, Algebra I, Geometry, Algebra II (or equivalent), and one other higher level course or 4 course sequence that contains equivalent or higher content	4 units, Algebra I, Geometry, Algebra II (or equivalent), and one other higher level course or 4 course sequence that contains equivalent or higher content	5 units, Algebra I, Geometry, Algebra II (or equivalent), and one other higher level course or 4 course sequence that contains equivalent or higher content
<b>Science</b>	4 units, including two units of advanced science	4 units, including two units of advanced science	5 units, including two units of advanced science
<b>Social Studies</b>	4 units	4 units	3 units
<b>World Language</b>	3 units of one world language, or no less than 2 units of two world languages studied	2 units of one world language studied	3 units of one world language, or no less than 2 units of two world languages studied
<b>Fine Arts</b>	1 unit	N/A	1 unit
<b>Electives</b>	N/A	4 units of Career-Technical minimum. Program must lead to an industry recognized credential, apprenticeship, or be part of an articulated career pathway which can lead to postsecondary credit.	2 units with a focus in STEM courses
<b>Grade Point Average</b>	3.5 on a 4.0 scale	3.5 on a 4.0 scale	3.5 on a 4.0 scale
<b>ACT/SAT Score</b>	27 ACT / 1280 SAT	27 ACT / 1280 SAT	27 ACT / 1280 SAT
<b>Additional Assessment</b>	N/A	Earn an industry-recognized credential or achieve proficiency benchmark for appropriate Ohio Career-Technical Competency Assessment or equivalent.	N/A
<b>Field</b>		Develop a comprehensive	Complete a field experience and

<b>Experience/ Portfolio</b>		portfolio of work based on the student's field experience or a topic related to the student's area of focus that is reviewed and validated by external experts.	document the experience in a portfolio specific to the student's area of focus Develop a comprehensive portfolio of work based on the student's field experience or a topic that is related to the student's area of focus that is reviewed and validated by external experts.
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Field Experience refers to experiential learning in either an internship or apprenticeship. Students will document their experiences by describing their understanding in a portfolio.

The student portfolio is a collection of experiential learning and competencies based on the student's field experiences. Students will engage with professionals or scholars in the field while developing their own portfolio or ePortfolio of original work that documents their technical, critical and creative skills representative of their honors focus; students' work must be reviewed and evaluated by scholars or professionals within the field/area of study in which the students' work is focused, and the scholars or professionals must be external to the district staff; students will give a presentation to showcase the work and provide an analysis of it to the school and local community. If the student does not complete a field experience, the portfolio can be based on a collection of work related to the student's honors diploma area of focus.

## ACADEMIC RECOGNITION AT COMMENCEMENT

We believe it is important for universities to look carefully at the individual applicant to see beyond class designations, which can sometimes be skewed in a competitive high school like ECHS. Seniors will be honored at commencement based upon the following standards of academic achievement:

- Valedictorians: (Class of 2018 and beyond): 4.1 GPA (seven semesters) Transcripts will reflect 5%, 10%, 20% and 50% of each graduating class.
- Summa Cum Laude: 4.000+ (seven semesters)
- Magna Cum Laude: 3.750 to 3.999 (seven semesters)
- Cum Laude: 3.500 to 3.749 (seven semesters)

Two Valedictorians will be selected to speak at commencements. Candidates will submit an application and speech to a panel of teachers who will make the selections.

**COLLEGE CREDIT PLUS**

**COLUMBUS STATE**  
COMMUNITY COLLEGE

At Marysville Early College High School, we have partnership with Columbus State Community College. Our Freshman start the application process and apply to Columbus State by December of their Freshman year. Students take an Accuplacer test to evaluate what courses they are prepared to take. Spring semester students take the introductory course College Success Skills to prepare them for the rigor ahead.

<b>MECHS Columbus State Course Offerings</b>			
<b>College Course Name &amp; Number</b>	<b>Credit</b>	<b>Graduation Requirement Equivalence</b>	<b>HS Credit</b>
College Success Skills 1101	1	Introduction course for sophomores	.33
English Composition 1 1100	3	English Requirement	1
English Composition II 2367	3	English Requirement	1
Oral Communication	3	English Requirement	1
Biology 1111 Introduction to Biology	4	Advanced Science	1
Biology 1112 Human Biology	4	Advanced Science	1
Algebra Based Physics 1200	5	Advanced Science	1
General Chemistry 1171	5	Advanced Science	1
General Chemistry 1172	5	Advanced Science	1
American History since 1877 1152	3	American History	1
Introduction to Psychology 1100	3	Social Studies Elective	1
Introduction to Sociology 1101	3	Social Studies Elective	1
Ethics 1130	3	Social Studies Elective	1
Economics	3	4th Social Studies	1
Introduction to American Government 1100	3	Government	1
College Algebra 1148	4	4th Math	1
Trigonometry 1149	4	4th Math	1
Calculus 1151 & Calculus 1152	5	4th Math	1
Statistics 1450	4	Math Elective	1
Total Body Conditioning 1112	1	PE credit (with 1105)	.33
Intro Strength & Conditioning 1105	1	PE credit (with 1112)	.33
Advanced Strength & Resistance Training 2415	4	Elective	1
Basic Mechanisms & Drives	4	Elective	1
Welding: Introduction to Stick 1180	2	Elective	.66
Parametric CAD	3	Elective	1
MECH 2253	3	Elective	1
Robotics 2243	2	Elective	.66

Introduction to Programming Logic 1103	3	Elective	1
CSCI 1101 Computer Concepts & Applications	2	Elective	.66
CSCI 1145 HTML	3	Elective	1
CSCI 1660 Programming Fundamentals for And	3	Elective	1
**MECHS College Credit Plus courses are on a weighted scale.			
Columbus State require students to show college readiness through cut-off scores on the Accuplacer, ACT, or SAT.			

### Websites for Students & Parents

<b>Dual Enrollment</b>	<a href="http://www.cscce.edu/community/dual-credit/">http://www.cscce.edu/community/dual-credit/</a>
<b>Home Page</b>	<a href="http://www.cscce.edu/">http://www.cscce.edu/</a>
<b>Academic Calendar</b>	<a href="http://www.cscce.edu/academics/calendar/">http://www.cscce.edu/academics/calendar/</a>
<b>Course Catalog</b>	<a href="http://www.cscce.edu/academics/catalog/">http://www.cscce.edu/academics/catalog/</a>
<b>Web-based Course Offerings</b>	<a href="http://global.cscce.edu/courses/web.asp">http://global.cscce.edu/courses/web.asp</a>
<b>Student Forms (Add/Drop)</b>	<a href="http://www.cscce.edu/services/student-forms.shtml">http://www.cscce.edu/services/student-forms.shtml</a>

### TRANSFEROLOGY

Will my courses transfer? [Click here](#) Transferology (Transferology.com) is a nationwide network designed to help students explore their college transfer options. The goal is to save students time and money by providing a quick, intuitive way of getting their college transfer credit questions answered. Students can answer the question "Will my courses transfer?" by adding coursework, exams, and/or military learning experiences to see how many schools in the Transferology network have matching courses that may be awarded when they transfer.

<b>ENGLISH</b>
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9th	10th	11th	12th
English 9	English 10 Advanced American Studies	English 11	English 12 English 12 Independent Exploration

***Columbus State Community College***

9th	10th	11th	12th
		English 1100 Composition I AP Language & Composition	English 2367 Composition II 1105 Oral Communications

**ENGLISH 9 (HUMANITIES) (NCAA)**

Course #: ENG100

Fee: Novels (approx. \$25.00) Students will develop composition and communication skills by responding orally and in writing to a variety of literary fiction, drama, and nonfiction genres. Texts will be read and taught as they relate to World Studies. Students will develop their knowledge of Standard English usage and vocabulary through reading, writing and research.

**ENGLISH 10 (HUMANITIES)(NCAA)**

Course #: ENG200

Prerequisite: English 9; OR Analysis and Composition; Credit: 1

Fee: Novels (approx. \$25.00).

Students will read selected novels, plays, stories, and poems from various historical periods and examine major themes in American literature. Texts will be read and taught as they relate to U.S. History. Skills to be developed include critical reading, vocabulary, discussion, literary essay, argumentative essay, and research writing.

**ADVANCED AMERICAN STUDIES (Fulfills English 9/English 10 requirements) (NCAA)**

Course #: ENG230

Prerequisite: Mastery in English 9 and an Advanced score (5) on the 8th grade AIR; OR completion of World Studies in 8th grade; Credit: 1

Fee: Novels (approx. \$25.00)

Students are introduced to a college level English course in conjunction with a US History course. There is a focus on composition and the analysis of nonfiction literature. Students will read a variety of complex texts thematically and will comprehend the fundamental elements of rhetoric: writing rich and complex prose for a variety of purposes, addressing and appealing to an audience in a stylistic manner, and citing secondary source material to support a claim, while implementing the stages of the writing process.

**ENGLISH 11(NCAA)**

Course #: ENG300

Prerequisite: English 10; Credit: 1

Fee: Novels (approx. \$50.00)

Students will read selected novels, plays, and stories from various historical periods, with a focus on how they relate to 20th and 21st century literature and nonfiction. Skills to be developed include critical reading of both fiction and nonfiction, argumentative essay, and research presentation, discussion, and connections to rhetorical and evidence supported writing.

**ENGLISH 12 (NCAA)**

Course #: ENG400RE

Prerequisite: Senior Year; Credit: 1

Fee: Novels (approx. \$50.00) may be purchased in the school store.

Students will read selected novels, plays, stories, and poems from various historical periods, with a focus on how they relate to 20th and 21st century literature and nonfiction. Skills to be developed include critical reading of both fiction and nonfiction, vocabulary development, literary essay, argumentative essay, and research writing.

**ENGLISH 12 INDEPENDENT EXPLORATION**

Course #: ENG440

Prerequisite: Senior Year; Credit: 1

Fee: Will Vary.

Students will be coached by the teacher to create an independent plan of study that focuses on the development and application of English skills with a focus of the student's choice. The class will allow students the opportunity to engage and explore topics and projects that interest them. Students will be required to work independently to complete reading and writing within their chosen project.

**AP LANGUAGE & COMPOSITION (Offered 2nd Semester only)**

Course #: ENG501AP

Prerequisite: Teacher Evaluation

Honors Credit: 1

Fee: Students will purchase own winter reading books - approx. \$66.00. Students are introduced to a college English course with a focus on nonfiction literature. Students will read a variety of complex texts thematically and will comprehend the fundamental elements of rhetoric: writing rich and complex prose for a variety of purposes, addressing and appealing to an audience in a stylistic manner, and citing secondary source material to support a claim, while implementing the stages of the writing process. Students will be required to do winter reading.



### **ENGLISH COMPOSITION 1100 (Columbus State Community College) (NCAA)**

Course #: Engl1100

Prerequisite: Accuplacer score

High School Credit: 1; College Credit: 3

English 1100 is a beginning composition course which develops processes for critically reading, writing, and responding to a variety of texts in order to compose clear, concise, expository essays. The course facilitates an awareness of purpose, audience, content, structure and style, while also introducing research and documentation methods. Course reading and writing assignments may be thematically organized. Sections of this course are S-designated Service-Learning classes.

### **ORAL COMMUNICATION (Columbus State Community College)**

Course #: COMM1105

Prerequisite: ENGL 1100

This course studies nonverbal and verbal communication in public contexts.

### **ENGLISH COMPOSITION II (Columbus State Community College)(NCAA)**

Course #: Engl2367

Prerequisite: ENGL 1100; minimum grade of "C" Lab fee: \$5.00

High School Credit: 1; College Credit: 3

ENGL 2367 is an intermediate composition course that extends and refines skills in expository and argumentative writing, critical reading, and critical thinking. This course also refines skills in researching a topic, documenting sources, and working collaboratively. Course reading and writing assignments are organized around the diversity of those who comprise the identities. Sections of this course are S designated Service-Learning classes. Sections of this course are H-designated Honors classes.



<b>MATHEMATICS</b>
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9th	10th	11th	12th
Geometry	Algebra Algebra II with trig	Advanced Stem Math Precalculus	Calculus


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9th	10th	11th	12th
		Math 1148 College Algebra Math 1149 Trigonometry Math 1151 Calculus	Math 1151 Calculus Math 1152 Calculus

**GEOMETRY (NCAA)**

Course #: MTH200

Credit: 1

This course is a graduation requirement. This class focuses on geometric relationships of lines, points, planes, circles, and polygons as they apply in both two and three dimensions. Students will grow in their ability to think critically and logically as they start to develop formal proofs. Students will be required to apply their understanding of geometric concepts to other courses. Geometry is paired with Engineering Principles during the first semester and paired with IT during the second semester.

**ALGEBRA I (NCAA)**

Course #: MTH100

Credit: 1

This course is a first year Algebra class and is a graduation requirement. The class focuses on linear, quadratic, and exponential functions. Students will work with linear functions through graphing, solving, scatter plots, inequalities, and systems. Work will continue with quadratics where students will work to understand the graph along with how to represent and solving quadratics using multiple methods. Lastly, students will begin work with exponential functions through graphing. **Course must be passed with Mastery.**

**ALGEBRA II WITH TRIGONOMETRY (NCAA)**

Course #: MTH310

Prerequisite: Algebra I and Geometry

Credit: 1

This course is a second year Algebra class and is a graduation requirement. The class focuses on solving and graphing numerous types of functions. Students will work in depth with polynomial, rational, quadratic, exponential, and logarithmic functions and their transformations while also learning how to solve each of these types of functions. Students will also begin work with trigonometry with a focus not only on right triangle trigonometry but also the unit circle, radians, angles, and functions.

**ADVANCED STEM MATHEMATICS (4th Math Requirement) (NCAA)**

Course #: MTO401

Prerequisite: Algebra, Geometry

Credit: 1

This is an elective math class that focuses on application of math outside of a school setting. Advanced STEM math has students understanding and making connections between math and topics like finance, construction, statistics, sports, and many others.

**PRECALCULUS (4th Math Requirement) (NCAA)**

Course #: MTH400

Prerequisite: Algebra II with Trigonometry

Credit: 1

This course is designed for students who plan to take Calculus and obtained a B or higher in Algebra II with Trigonometry. This course includes a study of various functions expressed either numerically, graphically, analytically, and/or verbally. A TI-Nspire CX graphing calculator is required.

**CALCULUS (4th Math Requirement)**

Course #: MTH500

Prerequisite: Precalculus

Credit: 1

Students continue the work with functions as they study the fundamental concepts of calculus: limiting behaviors, derivatives, integrals, continuity, and the Fundamental Theorem of Calculus. Students review and extend their knowledge of trigonometry and basic analytic geometry.

**COLLEGE ALGEBRA 1148 (COLUMBUS STATE COMMUNITY COLLEGE) (NCAA)**

Course #: MATH 1148

Prerequisite: Alek Math Placement Test

High School Credit: 1; College Credit: 4

This course is a continuation of the study of functions. The concept of transformations is used to graph and analyze functions including quadratic, higher degree polynomial, power, piecewise, rational, exponential, and logarithmic functions. The function concept is applied to solving equation inequalities, and applications regarding these types of functions. Factor and remainder theorems and roots of polynomial functions are included. The concept of functions is extended to include composition of functions and inverse functions. Systems of linear and nonlinear equations are solved using algebraic and graphical methods. Trigonometric functions of right angles are defined and used in problem solving. This course meets the general education requirement for the AA degree.

**TRIGONOMETRY 1149 (COLUMBUS STATE COMMUNITY COLLEGE) (NCAA)**

Course #: MATH 1149

Prerequisite: MATH 1148; minimum grade of "C"

High School Credit: 1; College Credit: 4

This course is a study of the trigonometric functions, vectors, and related applications. Topics include right triangle trigonometry; trigonometry of general angles; the unit circle; the graphs of the trigonometric functions; analytic trigonometry; inverse trigonometric functions; verifying identities; solving trigonometric equations; the Law of Sines; the Law of Cosines; applications of trigonometry; polar coordinates and the graphs of polar equations; geometric and algebraic vectors; vector applications; plane curves and parametric equations; trigonometric form of complex numbers; DeMoivre's Theorem. The conic sections are defined and analyzed algebraically and graphically. Not open to students with credit for MATH 1150 and above.

**CALCULUS I 1151 (COLUMBUS STATE COMMUNITY COLLEGE) (NCAA)**

Course #: MATH1151

Prerequisite: MATH 1149 or MATH 1150; minimum grade of "C", or placement equivalent

High School Credit: 1; College Credit: 5

This course provides an introduction to differential calculus. Topics presented include functions, limits, continuity, derivatives, differentiation rules, derivatives of the trigonometric, exponential, and logarithmic functions, related rates, extrema, curve sketching, and optimization. Course also introduces integral calculus: antiderivatives, definite integral, Riemann sums, area under a curve, Fundamental Theorem of Calculus, numerical integration, integration by substitution, and derivatives and integrals of inverse trigonometric, hyperbolic, and inverse hyperbolic functions. Applications to problems in science and engineering are highlighted.

**CALCULUS II 1152 (COLUMBUS STATE COMMUNITY COLLEGE) (NCAA)**

Course #: MATH1152

Prerequisite: Prerequisite: MATH 1151, minimum grade of "C"

School Credit: 1; College Credit: 5

This course continues the introduction to integral calculus. Topics covered include integration of exponential, logarithmic, trigonometric, inverse trigonometric functions, volume and surface area of solids of revolution, arc length, and methods of integration. Course also presents L'Hopital's Rule and Improper Integrals. Students will learn to analyze plane curves given parametrically or in polar coordinates, and their differential and integral calculus. Students will learn about infinite sequences and series, their sum and/or convergence, conic sections, vectors in the plane and in space. Applications to problems in science and engineering are noted. Not open to students with credit for MATH 1157 and above.

**STATISTICS 1450 THE PRACTICE OF STATISTICS (COLUMBUS STATE COMMUNITY COLLEGE)**

Course #: STAT1450

Prerequisite: Math 1116 or Math 1130

School Credit: 1; College Credit: 4 (2 hour lab)

This course is designed to acquaint students with statistical methods used in gathering and analyzing data. The course includes sampling methods and data classification; descriptive statistics; percentiles and z-scores; basic concepts in probability; binomial and normal probability distributions; the Central Limit Theorem; estimating population parameters; hypothesis testing; linear correlation and regression; interval estimation and hypothesis testing with two samples; and chi-square tests of independence. STAT-1450 is intended primarily for students needing a college level, non-calculus based course in probability and statistics.

<b>SCIENCE</b>
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9th	10th	11th	12th
<b>Biology</b>	<b>Physical Science Chemistry</b>	<b>Advanced Stem Science Anatomy &amp; Physiology</b>	<b>Physics</b>

CollegeCredit  
PLUS

9th	10th	11th	12th
		Biology 1111 Intro to Biology Chemistry 1200	Chemistry 1171 & 1172 Algebra Based Physics I

**BIOLOGY I (NCAA)**

Course #: SCI200

Credit: 1

An introduction to the fundamental principles of Biology with emphasis on ecology, cells, evolution, and Genetics. This course is taught through project based learning and blending learning. It will prepare students for physical science and chemistry. This course is required.

**PHYSICAL SCIENCE (NCAA)**

Course #: SCI100

Credit: 1

This course emphasizes physical and chemical processes and how they relate to everyday applications. Topics include: Scientific Method, measurements, atom and elements, ions and forces, bonding, radioactive substances and nuclear reactions, types of energy, energy change, Newton's laws, friction, states of matter and gravity, electricity and waves, history of universe, galaxy formation and stars. This class can be taken concurrently with Biology. This course is required.

**CHEMISTRY (NCAA)**

Course #: SCI300

Prerequisite: Algebra I

Credit: 1

This course focuses on the science of matter and its properties. Topics include: the atomic theory of matter and its significance, families of elements, how compounds are formed, states of matter and their properties, solution chemistry, acid base chemistry, organic chemistry, and other topics.

**ANATOMY & PHYSIOLOGY (NCAA)**

Course #: SCI230

Prerequisite: Biology I

Credit: 1

This course is an introduction to the fundamental principles of human anatomy and physiology. Major systems of the human body will be covered. The course will consist of lecture, laboratory, dissection and demonstrations. Purchase of a lab manual is required from the school store for approximately \$25.00.

**ADVANCED STEM SCIENCE (Advanced Science Credit) (NCAA)**

Course #: SCI330

Credit: 1

This course is project/lab based and focuses on the physical world around us. Topics include: Earth science, sustainability and the environment, freshwater resources with a focus on The Great Lakes, space science and service learning projects.

**PHYSICS**

Course #: SCI410

Prerequisite:

Credit: 1

This course is a study of applied mathematics in theoretical and practical application of physical laws. Acceleration, forces, vectors, momentum, energy, power, heat and its applications, electrical circuits and the laws concerning them, and relativity are among the topics that will be studied.

**INTRODUCTION TO BIOLOGY (COLUMBUS STATE COMMUNITY COLLEGE) (NCAA)**

Course #: BIO1111

Prerequisite: High school biology and placement into ENGL 1100

High School Credit: 1; College Credit: 4

This is an introductory course in general biology for the nonmajor. Topics include cell structure and function, bioenergetics, DNA structure and function, biodiversity, ecology and evolution. Sections of this course are H-designated Honors classes.

**HUMAN BIOLOGY (COLUMBUS STATE COMMUNITY COLLEGE) (NCAA) (Not offered 18-19)**

Course #: BIO1112

Prerequisite: High school biology and placement into ENGL 1100

High School Credit: 1; College Credit: 4

This course introduces the study of human biology for the non-major student. Lessons include a detailed and topical study of the human body systems for skeletal, muscular and endocrine to learning about the brain, heart, lung, kidney, reproduction and the digestive system. Development, genetics, human populations and evolution, immunology and cancer as each impacts on humans will also be covered. This course includes a hands-on laboratory experience which emphasizes select lecture topics.

**CHEMISTRY 1200 INTRODUCTION TO GENERAL AND ORGANIC CHEMISTRY**

Course #: CHEM1200

Prerequisite: Placement into Engl 1100; High School Chemistry

High School Credit: 1; College Credit: 5

This is an introductory course in general chemistry, organic chemistry, biochemistry, and laboratory techniques. Topics include atomic structure, periodic classification of elements, stoichiometry, solutions, acids and bases, pH and buffers, the study of carbon compounds organized according to functional groups, carbohydrates, lipids, proteins, and enzymes.

**GENERAL CHEMISTRY I 1171 (COLUMBUS STATE COMMUNITY COLLEGE)**

Course #: CHEM1171

Prerequisite: Placement into ENGL 1100; Math 1148; High School Chemistry completed

High School Credit: 1; College Credit: 5

This is a course in fundamental chemical principles. Topics include measurement, atomic structure, periodic classification, the mole concept, mass relationships in chemical reactions, the behavior of gases, the behavior of liquids, the behavior of solids, thermochemistry, quantum theory and electron configurations, chemical bonding, and molecular geometry.

**GENERAL CHEMISTRY II 1172 (COLUMBUS STATE COMMUNITY COLLEGE)**

Course #: CHEM1172

Prerequisite: Chem1171

High School Credit: 1; College Credit: 5

This is a course in fundamental chemical principles. Topics include intermolecular forces, phase changes, the properties of solutions kinetics, equilibrium, acid-base chemistry and buffers, solubility equilibria, atmospheric chemistry, entropy and free energy, electrochemistry, the chemistry of metals and nonmetals, coordination complexes, and nuclear chemistry. Students enrolled in distance versions of this course will be required to come to campus for an orientation meeting and completion of certain exams and laboratories. This is the second of a two-semester sequence designed for students entering a scientific field. A mandatory safety lesson must be completed before the student is admitted to any chemistry laboratory sessions.

**ALGEBRA BASED PHYSICS I (COLUMBUS STATE COMMUNITY COLLEGE) (NCAA)**

Course #: Phys1200

Prerequisite: MATH 1148 and placement into ENGL 1100

High School Credit: 1; College Credit: 5

This is a laboratory course in classical mechanics (kinematics, Newton's laws, gravitation, energy, momentum, rotational motion, and angular momentum) as well as fluids, harmonic motion, waves, and sound.

**RECOMMENDED COURSES AT CSCC****BIOLOGICAL SCIENCES 1113**

This is the first half of a two-course sequence designed to give students majoring in the sciences an intensive introduction to the biological sciences. Subjects covered in the course include biochemistry, cell biology, cell metabolism, genetics, gene technology, animal development and defense mechanisms of the body.

## SOCIAL STUDIES

9th	10th	11th	12th
World Studies	U.S. History	U.S. Government	

CollegeCredit  
PLUS

9th	10th	11th	12th
	CSCC American History 1877	CSCC Pols 1100 Intro to American Gov	CSCC Intro to Sociology CSCC Intro to Psychology CSCC Economics

### WORLD STUDIES (NCAA)

Course #: SOC100

Prerequisite None

Credit: 1

Required of all 1st year students. As students study World History from 1750 to present, they will consider the influence of geographic settings, cultural perspectives, economic systems, and various forms of government. Students will gain a deeper understanding of the role of citizens and continue to develop their research skills. This course must be passed to graduate.

### U.S. HISTORY (NCAA)

Course #: SOC200

Prerequisite: None

Credit: 1

Required of all 2nd year students who are not enrolled in Honors Economics. As students study United States History from 1877 to present, they will consider geographic, cultural, economic, and governmental changes that have occurred. Students will develop a deeper understanding of their role as a citizen and continue to expand their command of social studies skills and methods. US History or AP US History are required by all students to graduate.

### U.S. GOVERNMENT (NCAA)

Course #: SOC300

Prerequisite: None

Credit: 1

Required of all 3rd year students except those enrolled in AP Government. This course studies the United States Government, including the Constitution, civil rights, political parties, Congress, the presidency, and the Supreme Court. This course will also cover economic issues such as investment and banking. **This course meets the Economics & Financial Literacy graduation requirement.**



### **INTRODUCTION TO SOCIOLOGY 1101 (COLUMBUS STATE COMMUNITY COLLEGE) (NCAA)**

Course #: SOC1101

Prerequisite: Placement into ENGL 1100 Lab fee

High School Credit: 1; College Credit: 3

This course introduces the basic concepts, methods and findings of sociology as a scientific discipline. The sociological perspective, emphasizing social interaction and structure, is used to explore the following topics: culture; socialization; social groups, including organizations; deviance; various types of social inequality; major social institutions; collective behavior, social movement and social change. Sections of this course are H-designated Honors classes.

### **INTRODUCTION TO PSYCHOLOGY 1100 (COLUMBUS STATE COMMUNITY COLLEGE) (NCAA)**

Course #: Psy1100

Prerequisite: Placement into ENGL 1100

High School Credit: 1; College Credit: 3

This introductory course provides an overview of the origins, growth, content and applications of psychology, including the application of the scientific method to the following topics: research methodology; beginning statistics; theories of physical, cognitive, moral and emotional development; sensation; perception; learning; motivation; intelligence; memory; personality; coping processes; abnormality; adjustment; and the individual in small groups and a pluralistic society. Sections of this course are H-designated Honors classes.

### **HIST 1152 AMERICAN HISTORY SINCE 1877 (COLUMBUS STATE COMMUNITY COLLEGE) (NCAA)**

Course #: Hist1152

Prerequisite: Placement into ENGL 1100

High School Credit: 1; College Credit: 3

This course covers a wide range of topics in modern American history from Reconstruction to the present time. It is an introduction to the study of history and to the political, economic, intellectual, and social themes that have shaped our present society. Sections of this course are H-designated Honors classes.

### **INTRODUCTION TO AMERICAN GOVERNMENT (COLUMBUS STATE COMMUNITY COLLEGE) (NCAA)**

Course #: Pols1100

Prerequisite: Placement into ENGL 1100

High School Credit: 1; College Credit: 3

This course introduces students to the nature, purpose and structure of the American political system. Attention is given to the institutions and processes that create public policy. The strengths and weaknesses of the American political system are discussed, along with the role of citizens in a democracy.

### **ETHICS 1130 (COLUMBUS STATE COMMUNITY COLLEGE)**

Course #: Phil1130

Prerequisite: Placement into ENGL 1100

High School Credit: 1; College Credit: 3

This course introduces students to moral reasoning, examining theories of right and wrong, good and bad, justice and injustice as they have been viewed in the past and as they shed light on contemporary ethical issues. PHIL 1130 meets elective requirements in the Associate of Arts and Associate of Science Degree programs and distributive transfer requirements in philosophy and humanities.



**ECONOMICS 2200 PRINCIPLES OF MICROECONOMICS (COLUMBUS STATE COMMUNITY COLLEGE)**

Course #: ECON2200

Prerequisite: Placement into ENGL 1100; Tested in Math 1075 or higher via Aleks (Group C/D)

High School Credit: 1; College Credit: 3

This course introduces students to the economic decision-making of individuals and firms. Topics include scarcity, opportunity cost, supply and demand, consumer choice, elasticity, market structure, profit maximization, resource markets and international trade. Students who enroll in Economics courses must have placed into ENGL-1100 and are encouraged either to have completed ENGL-1100 or to be enrolled in that course when scheduling an Economics course.

**WORLD LANGUAGES****Things to keep in mind when scheduling world languages:**

As you consider a language, it is important to consider that different colleges and different majors have different requirements and expectations in terms of number of years taken in high school, placement exam score, and how many courses you will need to take in college if any. For students interested in college, students should take at least two years minimum of one language. Also, three years of the same world language or two years each of two world languages are required for an honors diploma. While world language is not a requirement for high school graduation, the credits earned count toward the elective credits needed for graduation.

**SPANISH I (NCAA)**

Course #: FL110

Credit: 1

Fee: \$20 (covers class novel, graphic novel, and magazine subscription)

This is a proficiency-based course taught almost entirely in the target language, however it is intended for students with little or no previous study of Spanish. The beginning level of Spanish focuses on the acquisition of high frequency vocabulary and grammatical structures about familiar topics through class created stories, adapted readings, and personalized questioning. Students will develop cultural knowledge of the Spanish-speaking world. Repetition and comprehensible input are critical components of this course. The emphasis is on developing listening and reading skills so that students build a solid mental representation of the language as they become ready to confidently write and speak more in higher levels of Spanish in the future.

**SPANISH II (NCAA)**

Course #: FL120

Prerequisite: Spanish I

Credit: 1

Fee: \$20 (covers class novels and magazine subscription)

This is a proficiency-based course taught almost entirely in the target language. Students continue to acquire more vocabulary and in-context grammatical structures from class-created stories, adapted readings, free voluntary reading, personalized questioning, class discussions about the novel, authentic sources, and cultural studies. There is a stronger emphasis on speaking and writing to build on the basics acquired in Spanish 1. Students read a level-two novel as a class throughout the semester.

**SPANISH III (NCAA)**

Course #: FL130

Prerequisite: Spanish II

Credit: 1

Fee: \$20 (covers class novels and magazine subscription)

This is a proficiency-based course taught almost entirely in the target language. Spanish III provides students the opportunity to further develop, improve, and refine their listening, speaking, reading and writing skills. Students continue to expand their vocabulary and acquire more grammatical structures in the context of stories, free voluntary reading, personalized questioning, class discussions about the novel, authentic sources, and cultural studies. Students will do original presentations on various topics. Students read a level-three novel as a class throughout the semester. Speaking and writing skills are emphasized in this third year of study. Active speaking participation is required.

**SPANISH IV**

Course #: FL 150

Prerequisite: Spanish III

Credit: 1

Fee: \$20 (covers class novels and magazine subscription)

This is a proficiency-based course taught almost entirely in the target language. Students continue to acquire further vocabulary and grammatical structures in the context of stories, free voluntary reading, personalized questioning, class discussions about the novel, and cultural studies. There is a greater emphasis on comprehending and interacting with authentic resources as well as making cultural comparisons. Aspects of contemporary Spanish and Hispanic cultures are emphasized in this class. Students read a level-four novel throughout the semester. Active speaking participation is required.

**JAPANESE I (NCAA)**

Course #: FL200

Credit: 1

Japanese 1 provides an introduction to the basic communication skills in Japanese. Students will learn how to communicate with Japanese speakers both in spoken and written forms. Hiragana, Katakana and Kanji will be taught and students will begin to explore communication through the written media. The interrelationships between Japanese culture and language will be studied. Students will also learn how to gain meaning from authentic sources. No prior language knowledge or experience is required.

**JAPANESE II (NCAA)**

Course #: FL210

Prerequisite: Japanese 1 &amp; teacher recommendation

Credit: 1

Japanese 2 requires fluency in Hiragana and Katakana usage as well as mastery of the Kanji introduced in year one. Students will grow more fluent in speaking while further developing vocabulary and intermediate level grammar skills. Students will also work on language production and comprehension through reading and writing using Kanji. Classes will mainly focus on interpersonal communication and analysis of authentic sources. The interrelationships between Japanese culture and language will be further explored, while learning about the country's products and practices.

**JAPANESE III (NCAA)**

Course #: FL220

Prerequisites: Japanese 2

Credit: 1

Fee: \$10.00 (National Japanese Exam)

Japanese 3 requires fluency in Hiragana and Katakana usage as well as mastery of the Kanji introduced in year one and two. Students will focus on interpersonal speaking skills while further building vocabulary and ease of communication. Students will get more comfortable with identifying unknown kanji based on context clues and radicals. The interrelationships between Japanese culture and language will be further explored through the analysis of existing politeness levels in society. Students will also be exposed to various traditional Japanese arts.

**JAPANESE IV**

Course #: FL230

Prerequisites: Japanese 3

Credit: 1

Japanese 4 requires fluency in Hiragana and Katakana usage as well as mastery of the Kanji introduced in year one, two, and three. Students will focus on interpersonal speaking skills while further building vocabulary and ease of communication based on the AP themes, while focusing on the three modes of communication. Students will be analyzing authentic sources while acquiring the kanji in this course. Students will also often engage in debates, argue different points of view, and create persuasive presentations.

**ELECTIVES****COLLEGE SKILLS SUCCESS (COLUMBUS STATE COMMUNITY COLLEGE)**

Course #: Cols1101A

High School Credit: .33; College Credit: 1 Prerequisite: Accuplacer Placement Test

College Success Skills' students will develop the skills and resources necessary to be successful in personal, academic and career-related pursuits. The course expands upon the orientation to college resources, policies, and processes.

**TRANSITIONS/STUDY SKILLS**

Course #: TR100

High School Credit: 1

Prerequisite: Juniors and Seniors with IEPs

During this one block course, students will receive specific intervention based on their IEP goals and services. In addition, students will complete transition activities as outlined in sections 4 & 5 of their IEPs. Lastly, students with a job may have early release some of the days to start work early. Students will be required to turn in pay stubs in order to earn elective credit.

## ENGINEERING MANUFACTURING

### Engineering/Manufacturing (Select 4 courses to complete pathway)

The Engineering and Science Technologies and Manufacturing Technologies Career Field prepares students for careers in design, operations, manufacturing and STEM (Science, Technology, Engineering and Math).

Design program areas will provide students with the necessary technical and academic skills to research and create product models with features/functions that meet the needs of the customer, manufacturing, quality and the overall business. Careers for which this pathway prepares students include: Computer Aided Drafting Technician (CAD), Engineer Engineering Technician, Line Operator Maintenance Technician, Quality Technician  
**Postsecondary majors** for which this pathway prepares students include: Drafting and Design Technology Engineering – Aeronautical/Aerospace, Electrical, Industrial, Manufacturing, Materials Quality Control, and Safety Technology Robotics Technology.

Operations program areas will provide students with the necessary technical and academic skills to administer the manufacturing process, including equipment, installation, tools and dies, logistics, inventory control, assembly, repair, quality and safety. Careers for which this pathway prepares students include: Computer Numeric Control Technician (CNC), Forming Machine Setter, Machine Tool Cutting Setter, Machinist Welder,  
**Postsecondary majors** for which this pathway prepares students include: Computer Numerically Controlled (CNC), Machinist Technology, Metallurgical Technology, Precision Metal Working Tool, and Die Technology Welding Technology.

CSCC offers a Mechanical Engineering Technology Plan of study ([Click here](#)).

9	10	11	12
Manufacturing Operations  Computer Integrated Manufacturing	Welding Technologies  Engineering Design	Mechanisms & Drive  Robotics  CNC with Lathes & Mills	Internship/Capstone

### ENGINEERING/MANUFACTURING OPERATIONS (MANOP)

Course #: ET110 All Freshman take this course.

Credit: .50

Subject Code: 175003

Students will learn the production processes applied across manufacturing operations. Students will be able to demonstrate a broad array of technical skills with an emphasis given to quality practices, measurement, maintenance and safety.

## COMPUTER INTEGRATED MANUFACTURING

Course #: ET220

Prerequisite: Engineering/Manufacturing Operations, Class Size Limit 32

Credit: 1.00

Subject Code: 175006

In this course, students will be introduced to all aspects of computer-integrated manufacturing. They will learn about robotics and automation, manufacturing processes, computer modeling, manufacturing equipment, and flexible manufacturing systems.

## WELDING TECHNOLOGIES

Course #: ET310

Prerequisite: Engineering/Manufacturing Operations and Computer Integrated Manufacturing

Credit: 1.00 Class size: 8

Subject Code: 176009

Students will use fundamental welding principles involving shielded metal arc, oxyacetylene, gas tungsten, and gas metal arc welding in the flat, horizontal, and vertical positions. An emphasis is given to electrode selection, equipment setup, operating procedures, welding inspection, and testing. Students will learn joint designs and layout and will be introduced to welding codes and standards. Additional topics include employability skills and an emphasis will be given to personal safety.

### Welding: Introduction to Stick

Course #: SKTR 1180 College Credit: 2

Prerequisite: Placement into MATH 1010 or higher (Alek test)

This course introduces the learner to the welding profession, welding tools, welding safety, OxyFuel setup, cutting, and heating, base metal preparation, weld quality, and several aspects of Shielded Metal Arc Welding (SMAW) (known as "Stick Welding") including equipment setup, and basic electrode selection. Through this course the learner will be able to assess what other welding skills and knowledge they desire and/or need for the workplace.

### Welding: Introduction to MIG (tentative 18-19)

Course #: SKTR 1380 College Credit: 2

Prerequisites: Math 1010

This course introduces the learner to additional welding symbols and drawings, all aspects of Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW), including equipment set-up, gas selection, usage of both solid core and flux core welding wire, using both fillet and multiple-pass welds. Through this course the learner will be able to assess what other welding skills and knowledge they desire and need for the various trades in the work force. The learner will engage in lab projects joining metals in Lap, Butt, and V-groove configurations using gas-shielded (GMAW) and flux core (FCAW) methods and materials.

**ENGINEERING DESIGN (ED)**

Course #: ET350

Prerequisite: Engineering/Manufacturing Operations

Credit: 1.0 Class size: 32

Subject Code: 175001

This focus of Engineering Design is the application of the engineering design process. Topics include work-processes, optimization methods, design optimization, and risk management tools. Students will use 2D and 3D modeling software to help them design solutions to solve proposed problems, document their work, and communicate solutions. Additionally, students will interpret industry prints, and create working drawings from functional models. Emphasis is given to experimental problem solving in real systems.

**PARAMETRIC CAD** 

Course #: MECH 2215      College Credit: 3

Prerequisite: ENGT 1115 (waived for Engineering students)

This course will cover Multiple Parametric CAD platforms used in the production of complete drawing sets for the manufacturing field. Students will create production drawings and documentation required to take a product from concept to design, sales, prototyping, production, and final assembly.

**MECHANISMS AND DRIVES**

Course #: ET320

Prerequisite: Prerequisite: Engineering/Manufacturing Operations, Computer Integrated Manufacturing, ED

Credit: 1.00 Class size limit: 16

Subject Code: 175008

Students will learn the principles and practices of machine operation and machine applications. They will learn how machine components such as gears, belts, sprockets, bearings, clutches, couplings, springs, etc. contribute to the application for which the machine is designed. They will also examine the basic drives of such mechanisms as electric motors and hydraulic & pneumatic actuators.

**BASIC MECHANISMS & DRIVES** 

Course #: ENGT 2260      College Credit: 4

Prerequisite: ENGT 1115

This course covers the kinematic motion of machines as well as basic machine components such as gears, belts, chains, sprockets, bearings, clutches, and couplings. In addition it examines the basic drive systems (electric motors and hydraulic & pneumatic actuators) used to power these components.

## COMPUTER NUMERICAL CONTROL (CNC) TECHNOLOGY WITH LATHES & MILLS

Course #: ET300

Prerequisite: Engineering/Manufacturing Operations, Computer Integrated Manufacturing, Engineering Design

Credit: 1.00

Subject Code: 176007 (class limit of 16)

In this course, students will use computer numerical control (CNC) programming to mill products comprised of various materials. Students will prepare numerical control programs in positioning systems using standard industrial G and M codes. They will program computerized numerical control mills and lathes.

## ROBOTICS

Course #: ET330

Prerequisite: Engineering/Manufacturing Operations, Computer Integrated Manufacturing, ED

Credit: 1.00

Subject Code: 175004 (Class limit of 16)

Students will apply the knowledge and skills necessary to program and operate Robots, using the teach pendant as the main interface point. The Students will learn robotic operations and system configurations. Students will code, compile, and debug programs using the robotic programming language.

### ROBOTICS

Course #: MECH 2243      College Credit: 2

Prerequisite: None

This course presents robotic operations and system configurations. Students are required to flowchart, code, compile, and debug programs using the Fanuc Karel programming language.

Hands-on experience with robotic systems is gained through teaching and executing the programs on an articulated 6-axis Fanuc robot.

## ENGINEERING INTERNSHIP/CAPSTONE (SENIORS only)

Course #: ET400

Credit: 1.0 Subject Code: 175009

The capstone course provides opportunities for students to apply knowledge, attitudes and skills that were learned in Engineering program in a more comprehensive and authentic way. Capstones often include project/problem based learning opportunities that occur both in and away from school. Under supervision of the school and through community partnerships, students may combine classroom learning with work experience. This course can be delivered through a variety of delivery methods including cooperative education or apprenticeship.

### PERSONALIZED LEARNING/CAPSTONE PROJECTS:

Industry Credential: [OSHA 10-Hour General Industry](#)

Class size, 25 @\$25 per student, must be in Engineering Pathway

Certificates: [Machining Center Programming, Setup, & Operation](#), [Turning Center Programming, Setup, & Operation](#)

Certifications: [Fanuc Certification](#) and [Motoman Certification](#)

Certificates: Autocad ([Program overview](#)), Inventor

**WebXam is the Career Technical Education End of Course Exam.**

**FAB LAB**

The Fab Lab teaches principles and applications of digital fabrication. It will teach hands-on skills while creating, learning, and/or inventing.

**FAB LAB I**

Course #:

High School Credit: 1 Fine Arts Credit

Prerequisite: None, open to 9-12 Grades

This course is geared towards problem solving and design challenges utilizing the fab lab. The course will embrace several of traditional areas of design explored in the Arts as well as the design process itself. Students will become well-versed in hand assembly application as well as equipment such as the 3d Printer, CNC router, and vinyl cutter, and Laser engraver. Student designs will incorporate both hand drawn and software based compositions.

**FAB LAB II**

Course #:

High School Credit: 1 Fine Arts Credit

Prerequisite: FAB LAB I

This course will be an advanced Fab Lab for students who already have experience in FAB LAB I. Students will have the opportunity to further develop their skills utilizing the Fab Lab equipment. Students will work on building and district improvement projects, both in interior and exterior spaces.



## INFORMATION TECHNOLOGY

### Information Technology (Select 4 courses to complete pathway)

The Information Technology Career Field prepares students for careers in Information Support and Services (ISS), Interactive Media (IM), Network Systems (NS) and Programming and Software Development (PSD).

**Interactive Media program** areas will prepare students for careers using multimedia technology to develop online products for business, training, entertainment, communications and marketing. Students will gain the necessary technical and academic skills to create, design and produce interactive media products and services. Careers for which this pathway prepares students include: Desktop Publisher, Multimedia Specialist, Webmaster, Website Developer. **Postsecondary majors** for which this pathway prepares students include: Digital Communication and Media/Multimedia Digital/Multimedia and Information Resources Design Prepress/Desktop Publishing and Digital Imaging Design Web/Multimedia Management and Webmaster. See Plan of Study from CSCC: [Interactive Media](#).

**Programming and Software Development program** areas will prepare students for careers using technical and academic skills to design, develop, test, document, implement and maintain computer software and database systems. Careers for which this pathway prepares students include: Application Developer, Application Support Specialist, Database Administrator, Database Designer. **Postsecondary majors** for which this pathway prepares students include: Computer Science Information Science/Studies and Software Engineering Video Game Development. See Plan of Study from CSCC: [Software Developer](#)

9	10	11	12
Information Technology	Programming Database Administration	Web Design Video & Sound Mobile Apps	Internship/Capstone

### INFORMATION TECHNOLOGY

Course #: HS402100

Credit: .50

Subject Code: 145005

All freshmen take this course. This first course in the IT career field is designed to provide students with a working knowledge of computer concepts and essential skills necessary for work and communication in today's society. Students will learn safety, security, and ethical issues in computing and social networking. Students will also learn about input/output systems, computer hardware and operating systems, and office applications.

## PROGRAMMING

Course #: IT300

Credit: 1.0 Course limit: 28 students

Subject Code: 145060

In this course, students will learn the basics of building simple interactive applications. Students will learn the basic units of logic: sequence, selection, and loop. Students will apply algorithmic solutions to problem-domain scenarios. Students will gain experience in using commercial and open source languages, programs, and applications.

### CSCI 1103 Introduction to Programming Logic

Course #: CSCI 1103 College Credit: 3

Prerequisite: Placement into MATH 1010 (NEED TO TAKE ALEK TEST)

CSCI 1103 introduces concepts of programming logic through algorithmic solutions applied to problem-domain scenarios. Examples of these scenarios are Computer Science disciplines such as programming languages, networking, operating systems, databases, and others. The course covers the basic units of logic: sequence, selection, and loop. Students repair faulty algorithmic solutions. The course also uses basic UML (Unified Modeling Language) notation to model problem-domain objects, via classes. **GATEKEEPER COURSE - many courses use this as a prerequisite!**

## DATABASE ADMINISTRATION

Course #: IT200

Credit: 1.0

Subject Code: 145080

Students will learn about user rights and responsibilities, concurrency security, reliability, backup and recovery to perform tasks involved in the administration and management of a database system. Students will design, extract and transform data ensuring data quality. Knowledge and skills relating to reporting systems, data warehouses, and data mining will be developed.

### CSCI 1101 Computer Concepts & Applications

Course #: CSCI 1101 College Credit: 2

Prerequisite: Placement into English 1100

CSCI 1101 is designed to provide students with a working knowledge of computer concepts and the essential skills necessary for work and communication in today's society. Topics include social networking, computer security, safety, ethics, privacy, operating systems and utility programs, communications and networks, input, output, system units, storage, word processing, spreadsheets, databases and presentation software.

**WEB DESIGN**

Course #: IT210

Credit: 1.0 Prerequisite: Programming

Subject Code: 145010

Students will learn the dynamics of the Web environment while pursuing an in-depth study of both Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS). Web based protocols such as FTP, TCP/IP, and HTTP will be addressed. Students will create a website with tag text elements, special characters, lines, graphics, hypertext links, and graphical tables. **CTAG CTIM004 Internet & Web Language**

**CSCI 1145 HTML  Tentative**

Course #: College Credit: 3

Prerequisite: CSCI 1103

CCSCI-1145 will teach students the dynamics of the Web environment while pursuing an in-depth study of the most recent version of both Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS). Throughout the course, students will create a real website using HTML and CSS on a live server environment. Students will learn other important topics such as FTP, TCP/IP, and HTTP.

**VIDEO & SOUND**

Course #: IT320

Credit: 1.0 Prerequisite: Programming

Subject Code: 145110

Students will create professional video and audio productions for distribution in traditional and new media channels. Students will plan, produce, edit, and launch media products. Students will develop scripts and storyboards, compose shots and operate cameras, capture sounds using microphone hardware, apply special effect techniques, and edit to achieve the final product. Students will be able to use animation and graphic design for video. **CTAG CTIM006 Digital Video Production**

**Suggested CSCC Courses: IMM1500 Basics of Video and Sound**

**MOBILE APPS**

Course #: IT330

Credit: 1.0

Subject Code: 145020

Students will learn to create applications for mobile devices using a variety of commercial and open source software. They will install these applications, modify them, and develop customer service skills to handle user issues. Knowledge and skills related to customer service in professional offices, small businesses, departments, work groups, and corporate information services will be addressed.

**CSCI 1660 PROGRAMMING FUNDAMENTALS FOR ANDROIDS**  **TENTATIVE**

Course #: College Credit: 3

Prerequisite: CSCI 1103

This introductory, instructor-led course is the first of a two-course series for students who want to learn mobile app development for the Android platform. Students will learn the Java programming language, with focus on concepts from object-oriented programming, with the goal of applying it to mobile apps. Hands-on code exercises and projects lead to the consumption of cloud RESTful networking services and parsing of JSON payloads – functions typically performed by a mobile app. The course also introduces fundamental concepts of concurrency and threading.

On the Java computing platform, students will use the IntelliJ IDEA CE IDE to create exercises and experiment with the Java programming language. Code solutions to in-class exercises and projects are maintained on a cloud source-code control repository.

**IT INTERNSHIP/CAPSTONE**

Course #: IT400

Credit: 1.0

Subject Code: 145015

The capstone course provides opportunities for students to apply knowledge, attitudes and skills that were learned in Information Technology program in a more comprehensive and authentic way. Capstones often include project/problem based learning opportunities that occur both in and away from school. Under supervision of the school and through community partnerships, students may combine classroom learning with work experience. This course can be delivered through a variety of delivery methods including cooperative education or apprenticeship.

**WebXam is the Career Technical Education End of Course Exam.**

## HEALTH SCIENCES

### Health Sciences (Select 4 courses to complete pathway)

The Health Science Career Field prepares students for careers in Allied Health and Nursing, Exercise Science and Sports Medicine, Health Information Management and Medical Bioscience.

**Allied Health and Nursing program** areas will prepare students with the mathematics, science and technical skills to provide clinical assistance in patient care, emergency interventions (CPR, first-aid, AED), nutrition, dentistry and surgery. Careers for which this pathway prepares students include: Dental Assistant, Licensed Practical Nurse (LPN), Medical Assistant Nurse Aide (including STNA), Phlebotomist, Patient Care Assistant, Pharmacy Aide/Technician Surgical Technician, Respiratory Technician Optometry. **Postsecondary majors** for which this pathway prepares students include: Clinical Nutrition, Community Health and Preventive Medicine, Occupational Health, and Industrial Hygiene Dental Laboratory Technology, Optics/Optical Sciences, Health Care Administration, Gerontology, Licensed Practical Nurse, Training Register, and Nursing Surgical Technology. CSCC see link: [Nursing](#).

9	10	11	12
Health Science & Technology	Medical Terminology Anatomy & Physiology	Principles of Allied Health Patient Centered Care (STNA)	Internship/Capstone

**Exercise Science and Sports Medicine program** areas will prepare students with the mathematics, science and technical skills to assist with exercise and rehabilitative procedures for the human body. Careers for which this pathway prepares students include: Athletic Trainer, Personal Trainer, Kinesiology, and Exercise Science, Physical Therapist Assistant, Occupational Therapist Assistant, Medical Massage Therapist. **Postsecondary majors** for which this pathway prepares students include: Athletic Training Foods, Nutrition and Wellness Studies Kinesiology and Exercise Science.

9	10	11	12
Health Science & Technology	SES 1105 Intro to Strength & Resistance SES 1112 Total Body Conditioning Medical Terminology Anatomy & Physiology	SES 1100 Personal Fitness Concepts SES 1101 Intro to Sports & Exercise Studies	SES 2415 Advanced Strength & Resistance Training Concepts SES 2426 Athletic Injury Control

**Medical Bioscience** program areas will prepare students with the mathematics, science and technical skills to apply biotechnology research and development to human health. Careers for which this pathway prepares students include: Biomedical Lab Assistant, Medical Lab Technician, Phlebotomist Lab Technician, Microbiology Generalist. **Postsecondary majors** for which this pathway prepares students include: Biological and Biomedical Sciences, Biomedical Technology, Biotechnology Microbiology.

9	10	11	12
Health Science & Technology	Anatomy & Physiology Medical Terminology	Bio 1111 & Bio 1112 (see science course descriptions)	Chem 1171 & Chem 1172 Internship/Capstone

**HEALTH SCIENCE & TECHNOLOGY**

Course #: HT100

Prerequisite: None

Credit: 1.0

Subject Code: 072001

This first course in the career field provides students an overview of the opportunities available in the healthcare industry. Students will learn fundamental skills in effective and safe patient care that can be applied across a person's lifespan. They will also be introduced to exercise science and sports medicine, the field of biomedical research and the importance of managing health information.

*Certifications: CPR & First Aid*

*Health requirement will be embedded into this course.*

**MEDICAL TERMINOLOGY (CTAG match 36909- CSCC Mult 1100 - Medical Terminology)**

Course #: HT210

Prerequisite: None      Credit: 1.0

Subject Code: 072150

This course focuses on the applications of the rules for constructing and defining medical terms with an emphasis on building a working medical vocabulary. Topics include using the appropriate abbreviations and symbols for anatomical, physiological and pathological classifications and the associated medical specialties and procedures. Students will decipher medical terms by identifying and using word elements with an emphasis on derivation, meaning, and pronunciation. Further, students will interpret and translate medical records and documents.

**MULT 1110 MEDICAL TERMINOLOGY**


Course #:      College Credit: 2

Prerequisite: Placement into English 1100

This introductory course provides an overview of medical language. Emphasis will be placed on terms that are practical and commonly found in the day-to-day work of all allied health professions. This concise course gives basic principles for understanding the language with an overview of terms from many areas of medicine.

**PATIENT CENTERED CARE**

Course #: HT320

Prerequisite: None      Credit: 1.0

Subject Code: 072050

Students will apply psychomotor nursing skills needed to assist individuals in meeting basic human needs. Students will implement interventions following a nursing assistant plan of care. Students will collect patient's vital signs including temperature, pulse rate, respiration rate, and blood pressure. Students will perform phlebotomy procedures with emphasis on infection prevention, universal precautions, proper patient identification, specimen acquisition, handling, and processing. Additionally, students will observe patients' physical, mental, and emotional conditions and document any change.

*The student who successfully completes this course should have the knowledge and skills needed to provide basic care for clients in the long-term care setting. The student will be eligible to take the state test for nurse aides in Ohio. When the student tests and earns that State Tested Nurse Assistant (STNA) license, he/she will have earned the 3 credits for Columbus State NURC 1001 Nurse Aide Training Program along with the credential to immediately work in a long-term care setting. NOTE: The NURC 1001 course is a prerequisite for specific health technologies at Columbus State.*

**PRINCIPLES OF ALLIED HEALTH**

Course #: HT300

Prerequisite: None

Credit: 1.0

Subject Code: 072035

In this, first course students will apply knowledge and clinical skills necessary to assess, plan, provide, and evaluate care to patients in varied healthcare settings. Students will apply first aid principles and techniques needed for response to choking, cardiopulmonary resuscitation, and other life-threatening emergencies. Emphasis will be placed on regulatory compliance, patient safety, pathophysiology, and medical interventions. Additionally, this course introduces psychomotor skills needed to assist individuals in meeting basic human needs.

**HEALTH SCIENCE CAPSTONE**

Course #: HT400

Prerequisite: None

Credit: 1.0

Subject Code: 072105 The capstone course provides opportunities for students to apply knowledge, attitudes and skills that were learned in Health Sciences program in a more comprehensive and authentic way. Capstones often include project/problem based learning opportunities that occur both in and away from school. Under supervision of the school and through community partnerships, students may combine classroom learning with work experience. This course can be delivered through a variety of delivery methods including cooperative education or apprenticeship.

**SES 1100 PERSONAL FITNESS CONCEPTS (HS Health Credit)**


Course #: SES1100

Prerequisite: None

Credit: 1.0; College Credit: 3.0

This course focuses on fitness issues which affect Americans today and into the future. Emphasis is placed on establishing a basis for positive fitness through a consideration of the various factors which influence fitness. Personal Fitness Concepts will focus attention on the need for each person to arrive at informed conclusions about how to take responsibility for his or her personal fitness.

**SES 1101 INTRODUCTION TO SPORT & EXERCISE STUDIES**


Course #:

Prerequisite: None

Credit: 1; College Credit: 3.0

This course offers a survey of the health and fitness arena, both private and public, including the study of facilities, recreational fitness options for the client, profiles, daily operations, legal aspects, personnel issues, and program administration.

**SES 1105 INTRODUCTION TO STRENGTH AND RESISTANCE (SES 1105 & SES 1112 HS PE Credit)**

Course #: SES1105

Prerequisite: None

Credit: .33; College Credit: 1.0

SES 1105 offers an introduction to weight room use for the individual exerciser. Investigation of various types of resistance exercise devices, proper techniques and programs, and weight room safety are included. Also covered are an introduction to basic anatomical and exercise concepts and their application in the use of resistance exercise modalities as a part of a total conditioning and exercise program.

**SES 1112 TOTAL BODY CONDITIONING (SES 1105 & SES 1112 HS PE Credit)**CollegeCredit  
PLUS

Course #: SES 1112

Prerequisite: None

Credit: .33; College Credit: 1.0

This course consists of participation in a fitness program to include cardio-respiratory fitness, muscle strength and endurance, strength training and flexibility.

**SES 2415 ADVANCED STRENGTH & RESISTANCE TRAINING (2018-2019)**CollegeCredit  
PLUS

Course #:

Prerequisite: SES 1101

Credit: 1; College Credit: 4.0

This course presents an analysis of the resistance training field to include types of resistance equipment used, resistance training methods for the client, proper lifting and spotting techniques for the various equipment, and assessment of clients. Also covered is goal setting for clients based on assessment findings and the use of periodization techniques in planning resistance training activities. Risk management aspects of the weight area and proper care and maintenance of equipment is explained.

*Certificates: Personal Training certification prep (NASCM test).*

**SES 2426 ATHLETIC INJURY CONTROL/FIRST AID (not offered 2018-2019)**CollegeCredit  
PLUS

Course #: (co-taught with Athletic Trainer)

Prerequisite: SES 2440

Credit: 1; College Credit: 3.0

This course covers the recognition, treatment, management and prevention of basic injuries sustained by individuals while participating in athletic activities. It includes basic taping and treatment procedures introduced and applied in the athletic environment.

*Certificates: First aid and CPR credentials*

**Suggested CSCC Course:** HNTR1153: Nutrition for a Healthy Lifestyle: Getting Started. A study of the role of nutrition in establishing, promoting, and maintaining good health. The composition and functions of foods, nutrition needs throughout the life cycle, and contemporary nutrition concerns are included in the course.

Pharm Tech Mult 1500 and Mult 1525 - useful credential to get the spring of your Senior Year!

**WebXam is the Career Technical Education End of Course Exam.**



## AUTO TECH

Ground Transportation program areas will provide students with the necessary technical and academic skills to diagnose, repair, service and maintain all types of vehicles and small engines.

**Postsecondary majors for which this pathway prepares students include:** Autobody/Collision and Repair Technology/Technician, Automobile/Automotive Mechanics Technology/Technician, Automotive Engineering Technology/Technician, Diesel Mechanics Technology/Technician, Heavy/Industrial Equipment Maintenance Technologies, Other Mechanic and Repair Technologies/Technicians, and Medium/Heavy Vehicle and Truck Technology/Technician

### **GROUND TRANSPORTATION MAINTENANCE (Offered FALL 2018)**

Course #:

Prerequisite: None Credit: 1.0

In this first course, students will apply skills needed to inspect and perform general service on vehicles. Students will research applicable service information and technical service bulletins, and perform maintenance on vehicles. Students will inspect and service engine, drive train, suspension, steering, electrical and braking systems. Students will perform ignition maintenance including spark plug/glow plug and ignition wire and coil pack replacement. Additionally, students change fluids, filters and inspect vehicles for leaks and fluid condition.

#### **AUTO 1101 Basic Auto Systems**



Course #: College Credit: 2; High School Credit: .66

Prerequisite: Placement into Math 1000 (Alek test) and English 0190 (Accuplacer)

This introductory automotive course covers the basic components and systems of the automobile. Included in this course are automotive terminology and mechanical, hydraulic, and electrical theories as they apply to automobiles and light trucks. Students are strongly encouraged to take AUTO 1106 the same semester.

#### **AUTO 1106 Shop Orientation & Service**

Course #: College Credit: 2; High School Credit: .66

Prerequisite: Concurrent with AUTO 1101

This introductory automotive course covers the operation of an automotive shop, the proper use of hand tools and power tools, and basic maintenance operations on cars and light trucks.

### **SPORTS/RECREATIONAL POWER SYSTEMS 177008 (Offered Fall 2018)**

Course #:

Prerequisite: None Credit: 1.0

Students learn principles and skills to maintain and repair sports/recreational vehicles. Students will inspect, diagnose, and repair engine, drive train, and suspension systems. Students remove, disassemble, and repair components in engine cylinder head and block assemblies. Students inspect, adjust and repair drivetrain systems including shaft and chain drive components. Additionally, students will inspect, adjust and replace suspension components including shocks, seals and springs. Students will maintain and adjust systems specific to specialized vehicles.

## TENTATIVE COURSES PLANNED FOR 2019-2020

### AUTOMOTIVE BRAKING, SUSPENSION, AND STEERING SYSTEMS

Students will perform inspections, troubleshoot malfunctions and service automotive undercarriage systems. Students will identify poor performing hydraulic brake systems and replace malfunctioning components. Students will install coil and leaf springs, shock absorbers and struts, and replace wheel bearings. Students will inspect and replace automotive steering components and perform wheel alignments. Additionally, students will disable and enable supplemental restraint systems (SRS) and replace antilock brake systems components.

<p><b>AUTO1158</b>            Course #:            Prerequisite:</p>	 College Credit: Prerequisite:
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### GROUND TRANSPORTATION ELECTRICAL/ELECTRONICS 177002

Student will diagnose and repair vehicle electrical systems, including chassis electrical, charging, starting and lighting systems. Students will learn the fundamentals of direct current (DC) electronics including series, parallel, and series- parallel circuits. Students will use electronic diagnostic tools, read schematics, and utilize printed and electronic repair manuals to troubleshoot electrical circuits, test components and replace defective modules.

### AUTOMOTIVE ENGINE PERFORMANCE

Students will research vehicle service histories using model specific service bulletins. Students will test and diagnose for engine performance in fuel, air induction and exhaust systems using advanced testing procedures. Topics include computerized engine controls including retrieving and recording diagnostic trouble codes using On Board Diagnostics (OBD). Additionally, students will diagnose drivability and emissions problems resulting from malfunctions of interrelated systems.

### TRANSPORTATION CAPSTONE

The capstone course provides opportunities for students to apply knowledge, attitudes and skills that were learned in Transportation program in a more comprehensive and authentic way. Capstones often include project/problem based learning opportunities that occur both in and away from school. Under supervision of the school and through community partnerships, students may combine classroom learning with work experience. This course can be delivered through a variety of delivery methods including cooperative education or apprenticeship.

## MUSIC OPTIONS AT THE MHS

### **WOMEN'S CHORUS**

Course #: ART201

Prerequisite: None

Credit: 1

Fee: \$40 (paid to Choral Boosters)

This choir consists of women in grades 9-12 and rehearses every day. This intermediate-level choir focuses on a variety of challenging literature that strengthens vocal technique and expands music reading skills. Quarterly concerts, contests, and assemblies are considered part of the student's grade as is the student's active participation in daily rehearsals. There is no audition required to participate in this choir

### **MEN'S CHORUS**

Course #: ART202

Prerequisite: None

Credit: 1

Fee: \$40 (paid to Choral Boosters)

This choir consists of men in grades 9-12 and rehearses every day. This intermediate-level choir focuses on a variety of challenging literature that strengthens vocal technique and expands music reading skills. Quarterly concerts, contests, and assemblies are considered part of the student's grade as is the student's active participation in daily rehearsals. There is no audition required to participate in this choir.

### **SYMPHONIC CHOIR**

Course #:ART210 – Year Long Prerequisite: By Audition Only

Credit: 1

Fee: \* \$40 (paid to Choral Boosters)

Selected by audition only. Students will master and perform highly challenging college-level music of all time periods. They will learn how to maintain a high level of musicianship and increase their vocal abilities. Quarterly concerts, contests, and assemblies are considered part of the student's grade as is the student's active participation in daily rehearsals.

### **WOMEN'S SELECT CHOIR (OFFERED IN THE MORNING AT MHS, may conflict with other courses)**

Course #: ART230– Year Long Prerequisite: By Audition Only

Credit: 1

Fee: \*Girls in Women's Select Choir will need to purchase a dress for \$60.00.

Selected by audition only. Students will master and perform highly challenging college-level music of all time periods. They will learn how to maintain a high level of musicianship and increase their vocal abilities. Quarterly concerts, contests, and assemblies are considered part of the student's grade as is the student's active participation in daily rehearsals.

**BAND**

Course #: ART300– Year Long Prerequisite: Play a Musical Instrument

Credit: 1

Fee: \*Band Class Fees (Approx. \$300.00) and a Participation fee \$200.00 presently) for Marching Band/Flag Corps that is assessed by the Board of Education to pay for transportation and salaries.

This yearlong course is available to students who have previous band experience and can meet minimum performance standards as determined by the directors. Marching Band, Contest, and Show participation is also dependent upon meeting minimum performance standards. Students must be willing to follow discipline guidelines in rehearsals and performances to insure a quality program. As a course requirement, students will perform at all football games, various parades, festivals, seasonal concerts, contests, and school assemblies. This spirited, highly visible organization is required to attend a weeklong band camp during the summer and one evening rehearsal and one sectional rehearsal per week during football season only. Students are expected to purchase accessory equipment for uniforms. It is possible for students to participate in other fall activities and band. This organization will perform a wide variety of literature that includes classical, jazz, contemporary, and march music. Beginning in early November and continuing through the end of the school year, students will perform in one of the three Concert Bands.

**COLOR GUARD**

Course #: ART321

Prerequisite: Audition

Credit: .25

Program Type: General or College Prep Fee: \*Band Class Fees (Approx. \$300.00) and a Participation fee (\$200.00 presently) for Marching Band/Flag Corps that is assessed by the Board of Education to pay for transportation and salaries.

Members will be selected through an audition in April. Any student wishing to be in the flag corps must audition for the high school band director and flag corps advisor. Marching Band, Contest, and Show participation is dependent upon the student meeting minimum performance standards as determined by the flag instructors and

band directors. This nine weeks long course is open to students who are interested in twirling a flag and using dance steps/moves as part of the high school band. Students must be willing to follow discipline guidelines in rehearsals and performances to insure a quality program. As a course requirement, students will perform at all football games, various parades, contests, concerts, and school assemblies, as part of the band. This spirited, highly visible organization is required to attend a weeklong band camp during the summer, one evening rehearsal, and two sectional rehearsals per week during the two-month long football season only. Students are expected to purchase accessory equipment for uniforms. \* Band Class fees are different for each grade level. Please see Mr. Thissen, Band Director, for exact fees.

**Year Academic Planning Guide - Class of 2018+**

Required Credits for Graduation in the State of Ohio &amp; MEVSD = 21 Total Credits Across Required Categories

**ENGLISH 4.0 CREDITS**

Required Credits	Course Taken	Year Taken	High School Credit	College Credit
English 9			1.0	
English 10			1.0	
English 11			1.0	
English 12			1.0	
<b>TOTAL CREDITS</b>			<b>4.0</b>	

**MATH 4.0 CREDITS**

Required Credits	Course Taken	Year Taken	High School Credit	College Credit
Geometry			1.0	
Algebra 1			1.0	
Algebra 2			1.0	
Additional Math			1.0	
<b>TOTAL CREDITS</b>			<b>4.0</b>	

**SCIENCE 3.0 CREDITS:**

Required Credits	Course Taken	Year Taken	High School Credit	College Credit
Biology			1.0	
Physical Science			1.0	
Advanced Science			1.0	
<b>TOTAL CREDITS</b>			<b>3.0</b>	

**SOCIAL STUDIES 3.0 CREDITS:**

Required Credits	Course Taken	Year Taken	High School Credit	College Credit
World Studies			1.0	
US History (Or CSCC 1152)			1.0	
US Government (Or CSCC 1100)			1.0	
<b>TOTAL CREDITS</b>			<b>3.0</b>	

**HEALTH .50 (2 OPTIONS) - HIGHLIGHT ONE WHEN COMPLETE**

Required Credits	Course Taken	Year Taken	High School Credit	College Credit
Health Option 1	SES 1100		1.0	3.0
Health Option 2	High School Health		.50	0
<b>TOTAL CREDITS</b>			<b>.50 REQUIRED</b>	

**PE .50 (2 OPTIONS) - HIGHLIGHT ONE WHEN COMPLETE**

Required Credits	Course Taken	Year Taken	High School Credit	College Credit
PE Courses Option 1	SES 1112 Total Body Conditioning SES 1115 Strength & Resistance		.66	2.0
PE Waiver Option 2  Complete PE Waiver form AFTER 2 seasons have been completed.	2 Complete Seasons of School Sport/Marching Band		No credit awarded  Waived requirement to take PE course  Make .50 waived credit up in elective credit.	0
<b>TOTAL CREDITS</b>			<b>.50 REQUIRED or WAIVER</b>	

**FINE ART 1.0: Design Thinking (earned at end of sophomore year)**

**All students earn fine art credit through design projects.**

Credits	Course Taken	Year Taken	High School Credit	College Credit
1 Fine Art Credit	Design Thinking	Earned by sophomore year	1.0	0
<b>TOTAL CREDITS</b>			<b>1.0</b>	<b>0</b>

**ELECTIVE CREDITS 5.0:**

Required Credits	Course Taken	Year Taken	High School Credit	College Credit
<b>TOTAL CREDITS</b>			<b>5.0</b>	

**ADDITIONAL CREDITS BEYOND GRADUATION REQUIREMENTS  
= ELECTIVE HIGH SCHOOL CREDITS**

Course Taken	Year Taken	High School Credit	College Credit
<i>CHEM 1171</i>	<i>Senior</i>	<i>1.0</i>	<i>5.0</i>
<b>TOTAL CREDITS</b>			

**GRADUATION POINTS**

Required State Testing for Graduation

End Of Course Exams - Earn Total of 18 Points & Meet Category Specific Score Totals

\*May also substitute college board test scores or career pathway exam scores

**ENGLISH: Must equal 4 points or higher**

COURSE	SCORE
English 9	
English 10	
	<b>TOTAL CATEGORY SCORE (4)</b> =

**MATH: Must equal 4 points or higher**

COURSE	SCORE
Geometry	
Algebra 1	
	<b>TOTAL CATEGORY SCORE (4)</b> =

**SCIENCE & SOCIAL STUDIES COMBINED: Must equal 6 points or higher**

COURSE	SCORE
Biology	
US History Or Grade from CSCC Hist 1152	
US Government Or Grade from CSCC Pols 1100	
	<b>TOTAL CATEGORY SCORE (6)</b> =
	<b>TOTAL POINTS MUST BE EQUAL TO OR GREATER THAN 18</b>