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# Clackamas Academy of Industrial Sciences

## Academic Program Guide

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CAIS Public Charter High School • Grades 8-12 • 2015-2016 School Year



1306 SE 12th, Oregon City, OR 97045 • 503-785-7860 • <http://caisoc.com>

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**Policies/Graduation/Personalized Learning/College/Forecasting**

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# About CAIS

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## **Mission Statement**

*The Clackamas Academy of Industrial Sciences exists to provide students an innovative, contextual learning environment focused on Manufacturing Technologies.*

*The Clackamas Academy of Industrial Sciences will enhance the regional economy by providing a career-ready, highly skilled, diverse and adaptable workforce that is worth the expenditure of resources committed.*

The Clackamas Academy of Industrial Sciences (CAIS) provides career focused students a high school experience that includes industry specific work-readiness, networking and advanced post-secondary learning opportunities.

To earn a CAIS diploma, students must complete the Oregon State minimum requirements as well as the additional CAIS requirements which includes completion of an academic college class, earn industry certification and demonstrate work readiness.

## **Benefits of a CAIS Diploma**

The CAIS High School Diploma is more than a standard diploma. The CAIS diploma means that a student is immediately ready for college and work. CAIS students will be a part of a network of employers so they can compete for career-focused jobs and take advantage of employee benefits like college tuition. Therefore, a CAIS student can significantly reduce their college expenses. In addition, students at CAIS are encouraged to take college classes their junior year and graduate with an industry certification and/or an Associates degree from Clackamas Community College by the end of their Senior year. The CAIS diploma track helps prepare students for the future from the very first day of high school.

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# Policies & Procedures

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This guide is designed to provide students and parents with information about our programs, course offerings, graduation requirements, policies and procedures. Please study the Academic Program Guide carefully, keeping in mind your future educational and career goals. The forecasting process runs through March and April as students select courses for the following school year. Student requests during this time determine the Master Course Schedule for CAIS for the upcoming school year. Teachers will be hired and textbooks and supplies purchased based on this forecasting process. It is very important that all students, with parent involvement, complete the forecasting process in a serious manner as schedule changes are extremely limited after the Master Schedule is complete. We will only make necessary changes due to errors in placement or data entry.

All students must be enrolled in five (5) classes per trimester, and/or the equivalent of a full time course load at a community college. Students planning on participating in Oregon School Activities Association (OSAA)-sponsored activities and athletics must have passed four classes the previous trimester, be enrolled in and passing four credit classes in the current trimester and be on track to graduate.

Students who plan to attend a four-year college or university directly after graduation must select appropriate courses beginning their freshman year in order to meet college entrance requirements.

Credit for satisfactory completion of a course is applied to the subject area in which the course is located unless otherwise noted. Each trimester course earns 0.5 credits and a full-year course earns 1.5 credits. Please contact our Counseling Department with any questions.

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# Grading & Credit Policies

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## Grading

The Oregon City School District's grading procedure is designed to reflect academic achievement and the development of citizenship. Letter grades are intended to provide information on academic performance, to encourage continued academic growth and to create a record of academic achievement. A letter grade is based on the teacher's professional evaluation of student achievement in the following areas: completion of assignments, examination scores, mastery of pertinent skills, handling abstractions, participation & professionalism, and application of knowledge. Teachers will provide students with a written explanation of the expectations and the grading system for each course of study.

## Credit by Proficiency

Units or part units of required and elective graduation credit awarded to students who demonstrate proficiency or mastery\* of recognized standards\*\* through sufficient and appropriate assessment evidence\*\*\*.

(\* defined levels of performance reflective of state, local, or national criteria)

(\*\* ex. state content standards and essential skills, industry-based knowledge and skills, other national or international standards)

(\*\*\* quantity and quality of student work which demonstrates what students know and are able to do)

Standard 4.0 Scale	Proficiency-based Scale	Letter Grade Earned
3.5-4.0	Mastered	A
2.75-3.49	Approaching Mastery	B
2.0-2.74	Proficiency	C
0	Developing Proficiency	I
0	Not Developing	F

## **Incomplete Courses**

Students are responsible for making up an Incomplete (“I” on report card). An Incomplete must be made up within 30 school days after the end of the grading period. If the work is not completed, the grade will change from an “I” to an “F”.

## **Improving Grades**

Students may repeat a course to improve their grade. The course must be taken at CAIS and it must be the exact class; i.e. Intro to Engineering Design repeated for Intro to Engineering Design, both at CAIS. If the grade improves, the new grade will be recorded on the transcript in the term the repeat course was taken. The original grade will be changed to an “N”, and the new grade will be calculated in to the GPA. The counselor must approve courses taken to improve a grade before the class is repeated. Recovery-type classes will not be allowed to replace a grade. Credit may not be earned twice in the same course, unless specified in the course description (example: P.E.).

## **ParentVue/StudentVue**

ParentVUE and StudentVUE are district approved and authorized websites that offer secure, private access to school and student information, including assignments, grades, attendance, school calendar, and teacher contact details. In ParentVUE, you can see the information for all of your students.

► To create an account, you need an activation key. Activation keys are sent out to the primary email address we have on file for each parent/guardian. These activation keys are only valid for a specific length of time. If yours has expired, please contact your school for a new one. For questions please contact your school’s main office.

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# Graduation Requirements

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Students are required to earn 26 credits to graduate with a standard Clackamas Academy of Industrial Sciences diploma. Credit Requirements are defined by units of credit. Students earn 0.5 credit for each trimester course passed. The CAIS board will award a diploma to a CAIS student fulfilling graduation requirements in four years or less upon the student successfully meeting all graduation requirements.

## **DIPLOMA REQUIREMENTS:**

Listed below are the required elements of a standard CAIS Diploma

### **Required Coursework - 26 Credits** (page 9)

**Essential Skills** - Meet or Exceed the State Standardized Tests. Students who do not pass the provided state tests will need to successfully complete two official work samples in each subject area.

- State Reading Test
- State Mathematics Test
- State Writing Test

### **Personalized Learning:** (page 9)

- Education Plan and Profile (page 9)

- Two Career-Related Learning Experiences (CRLE's) - (page 10)

Documentation for the Six Career-Related Learning Standards (CRLS's)

-Typically documented while completing your CRLE Portfolio (page 11)

- Career Development
- Employment Foundations
- Problem Solving
- Communication
- Teamwork

- Evidence for Extended Application Standards (page 12) - Documented thru completion of an *Internship* or *Work Experience* packet or a *CRLE Portfolio*, which demonstrate the following:

- Relevance
- Rigor
- Reflection



## ***Required Coursework:***

<b>Subject Area</b>	<b>Number of Credits Needed</b>
English	4 credits
Mathematics	3 credits (1 cr. of Algebra 1 or above & 2 cr above Alg 1)
Science	3 credits
Social Science	3 credits
Physical Education*	1 credit
Health Education	1 credit
CTE/PLTW/2nd Language	3 credits
Electives**	8 credits
<b>Total:</b>	<b>26 Credits</b>

\*Individuals may be excused from participation in physical education (PE) for a maximum .5 of the 1.0 credits required for graduation through the participation in an OSAA sponsored athletic program or a program of study waiver. Such excused students will be required to substitute the .5 credit with an elective course and must complete the necessary paperwork.

\*\*Individual can use internship/work experience for no more than 1.5 of the total 8 elective credits required for graduation. Individuals can earn .5 credits for approved work experience. Individuals can earn up to 1.5 credits for administration approved internship experiences.

## ***Personalized Learning:***

### **Education Plan and Profile -**

The Education Plan and Profile assists students in pursuing their personal, educational, and career interests and post-high school goals. The education plan serves as a “road map” to guide students’ learning throughout school and prepare them for next steps after high school. The education profile serves as a “compass” that documents students’ progress and achievement toward their goals and helps them to stay on course.

The student is responsible, with guidance, to develop and manage his or her personal plan and profile. The school is responsible for providing a process and guidance to students. The process should begin no later than 8th grade and continue through 12th grade, with regular reviews and updates. The process should be designed with flexibility to allow students to change their plans as their personal and career interests and goals evolve along the way. The EPP will be located in their folder with their counselor and will be updated periodically through individual meetings, classroom guidance sessions and upon request of the student.

## **Career-Related Learning Experiences -**

Career-Related Learning Experiences (CRLE's) are structured educational experiences that connect learning to the world beyond the classroom. They are developed within the student's Education Plan and Profile in relation to his/her career interests and post-high school goals. Experiences provide opportunities in which students apply academic, career-related and technical knowledge, as well as skills to help students clarify career goals.

Communities small and large, rural and urban, can support CRLE's. Partnerships with local employers and community organizations provide a variety of opportunities, building upon the community's strengths and resources. Beyond the local community, regional opportunities help increase the school's capacity, and technology offers expanding possibilities worldwide. CRLE's can take place in a variety of ways and places - in school, the workplace, or in the community. Most importantly, these experiences are about learning, not about the type of experience or the place.

## Career-Related Learning Standards -

The Career-Related Learning Standards are fundamental skills essential for success in employment, college, family, and community life. These skills should be taught throughout the curriculum, integrated with academic learning, and emphasized in students' Career-Related Learning Experiences. The box below shows the definitions for each of the Career-Related Learning Standards.

### Career Related Learning Standards

- |                           |   |
|---------------------------|---|
| 1. Personal Management    | Exhibit appropriate work ethics and behaviors in school, community and/or the workplace.  |
| 2. Problem Solving        | Apply decision-making and problem-solving techniques in school, community and/or the workplace.                                       |
| 3. Communication          | Demonstrate effective and appropriate communication skills to give and receive information in school, community and/or the workplace. |
| 4. Teamwork               | Demonstrate effective teamwork in school, community and/or the workplace.   |
| 5. Employment Foundations | Demonstrate academic, technical and organizational knowledge and skills required for successful employment.                           |
| 6. Career Development     | Demonstrate career development skills in planning for post-high school experiences.   |

The Career-Related Learning Standards are demonstrated by each student through their Career-Related Learning Experience (CRLE) Portfolio. Completion and review of the CRLE Portfolio will be reflected as the Personalized Learning Component. Checklists with the necessary components of the Portfolio are located in the students' binders, which can be found in the Counseling Center. Each component must be approved and signed off by one member of the CAIS staff.

## **Extended Application Standards -**

Extended application is defined as the application of academic and specialized knowledge and skills within the context of a student's personal and career interests and post-high school goals. Students extend what they have learned by applying their knowledge and skills in complex or non-routine situations.

**Relevance** = Evidence of personal relevance

**Rigor** = Description of academic and specialized knowledge and skills appropriate to context AND Application of learning to new contexts.

**Reflection** = Reflection on applied learning and connection to goals.

Students are required to earn 1.5 personalized learning credits to graduate with a standard Clackamas Academy of Industrial Sciences diploma.

## **Outside Credit**

Outside credits earned through another accredited program/institution used toward graduation must be completed and submitted to counseling by the last school day of May of the Senior year. Refer to OCSD Policy online for details.

## **Graduation Ceremony**

To participate in the graduation ceremony, students must successfully complete all required and elective courses by the last day of classes for Seniors. Details for graduation can be found on the CAIS website.

## **Early Graduation**

The determination to graduate one-two trimesters or a year early is a big decision. It is a clear expectation that students remain in high school for four years. However, recognizing that there are unique circumstances and a diverse population, some students may want to complete high school in less than four years. Students who want to participate in graduation ceremonies are required to complete the early graduation packet (available on the CAIS website). Students who plan to graduate early must meet the following requirements:

1. Students must meet the graduation requirements for their original graduating class
2. Students must have a Grade Point Average (GPA) of 2.75 or higher by the time of application.
3. Students must have passed all state tests and required work samples to receive a diploma.
4. Students must prepare a written **TRANSITION PLAN**, with their counselor's assistance.
5. If graduating one full year early, students must complete and turn in their graduation packet by the end of their sophomore year.
6. If graduating one or two trimesters early, students must complete and turn in their graduation packet by the end of their junior year.
7. Administration will then grant, deny, or modify the request

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# Diploma +

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## **Diploma Plus Application Process & Enrollment**

*Students must complete a Diploma Plus application and satisfy the following requirements to be considered eligible to enroll in college courses at Clackamas Community College and other institutions. Students must satisfy these requirements prior to each term they plan to enroll in college courses.*

### **All Students:**

- Must meet with CAIS College Coordinator prior to each term they plan to enroll in courses
- Must read and agree to follow all CAIS college policies and behavior expectations
- Must meet all additional requirements established by the institution the student will be attending
- May use up to the yearly amount allotted by the board for college courses, books, bus passes and/or fees
- Failure to return textbooks and/or materials purchased by CAIS automatically excludes the student from further enrollment in college courses through CAIS until they are returned or the school is reimbursed

### **Career & Technical Education (CTE) Courses: (page 35)**

- Must be a Sophomore or higher
- Must have earned a 2.25 GPA or higher the previous trimester/semester

### **Expanded Option Courses: (Refer to CCC Course Description Guide)**

- Must be a Junior
- Must have attended CAIS for no less than three (3) trimesters
- Must have earned a 2.5 GPA or higher the previous trimester
- Follow the steps listed on the next page

## Getting Started

These are the necessary steps to get you started taking non-CTE classes at CCC. You need to meet with a CAIS counselor first and complete the steps below.

- Fill out a Diploma+ Application.
- Meet with CAIS counselor to determine if you are eligible for taking classes at CCC.
- Meet with CAIS counselor for assistance with classes and to get appropriate paperwork signed.  
This is how CAIS pays for your classes and books!
- Contact Joy at CCC (503-594-3161) to schedule an appointment. She is our liaison to make sure the correct process is followed and that you are successful at CCC!
- Visit this website to get registered <http://www.clackamas.edu/Apply/> Joy may already have done this with you.
- Arrange to take your placement tests with CCC if you have not already completed this through CAIS. [http://www.clackamas.edu/placement\\_testing.aspx](http://www.clackamas.edu/placement_testing.aspx)
- Access schedule of CCC classes to choose sections <http://www.clackamas.edu/schedule/>

## College Books

Before purchasing books for college courses, follow this process and get a gold slip from the CAIS library to purchase remaining books.

- Check for needed books at the CAIS Library.
- Get gold slip to purchase remaining books from CCC Bookstore.
- Receive Book Requisition from Joy at CCC
- Bring Book receipt AND Books into CAIS Library to be barcoded and checked out.
- **Return books to CAIS Library at end of trimester.**

## FAQ's:

- How much financial assistance does CAIS provide to students taking college courses?  
\$1250 per student/per trimester
- Can I take evening or on-line courses at CCC to make courses work with my schedule?  
Yes. The only restriction is that the course is scheduled while CAIS is in session.
- What if I don't pass the class or drop it after the CCC drop-date?  
The student will lose eligibility to continue taking courses at CCC for a specified amount of time.

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# PSAT, SAT and ACT

## Important High School Pre-College Tests

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The PSAT, a practice test for the SAT, is offered only one time each year in mid-October for Sophomores and Juniors. The PSAT counts for the National Merit Scholarship Program ONLY during the student's junior year.

The SAT and ACT are two very different college entrance exams. Both are nationally administered and are used to help colleges evaluate applicants. The SAT is essentially a three-part aptitude test (Reading, Math, Writing) while the ACT is more of an achievement test with four core sections (English, Math, Reading and Science) and an optional Writing section. The tests are offered numerous times throughout the year. The Oregon City School District offers the SAT tests once during most months, with a SAT Prep Course in the evenings beforehand. The SAT offers two tests: SAT Reasoning and SAT Subject Tests. The ACT offers one test with a "Plus Writing" option. Oregon University System schools require either the SAT Reasoning or the ACT Plus Writing. It is highly recommended that students take at least one of these tests no later than spring of their junior year.

Registration materials are available online at [www.collegeboard.com](http://www.collegeboard.com) or [www.act.org](http://www.act.org).

**The CAIS code is 380789**

### ***SAT and ACT Resources and Preparation:***

How do you decide which test to take (SAT or ACT)? There are two things to consider: Which college are you considering and which test plays to your strengths.

1. Once you decide which college(s) you are interested in applying to, check their websites and look under Freshman Admissions. The site will tell you which test the college prefers. Many colleges will accept either, but don't assume. Check them out!
2. If you can take either test, then decide which test plays to your strengths by looking over the SAT vs. ACT Comparison Chart ([www.studypoint.com/ed/act-vs-sat/](http://www.studypoint.com/ed/act-vs-sat/))
3. The SAT costs \$50.00 and the ACT costs \$50.50.
4. Everything you need to know, practice and prepare for either test is included on the SAT and ACT websites. (Official Study Guides, Official Practice Tests, Question of the Day, etc.)  
There are many free resources available online. There are also college search engines available at their websites that are fun and amazing to use.
5. Other ways to Prepare: Study Guides from local bookstores, Test Prep courses, Study Groups



# OUS Entrance Requirements

The tables below list the requirements that students must complete in high school to meet the subject unit requirements for entrance to the Oregon University System (OUS). This includes the following schools: Eastern Oregon University, Oregon Institute of Technology, Oregon State University, Portland State University, Southern Oregon University, University of Oregon and Western Oregon University. Students who plan to attend a four-year college or university immediately after high school, whether private or public, must make course selections during high school with this in mind, beginning with their freshman year.

SUBJECT	Credits	SUBJECT	Credits
Language Arts	4	Mathematics	3
Social Studies	3	Science	3
Second Language*	2		
(*Trimesters at Community College)		<b>TOTAL Required Credits</b>	<b>15</b>

Note: Students must earn a C- or above in these subject units.

## Other College Entrance Information:

	EOU	OIT	OSU	PSU	SOU	UO	WOU
HS GPA	3	3	3	3	2.75	3	2.75
SAT/ACT	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional Review	Below 3.0 or fewer than 15 subject units	2.5 to 2.99	Below 3.0 or fewer than 15 subject units	Below 3.0 or fewer than 15 academic credits	Below 2.75	** See note below!!	Below 2.75 or fewer than 15 academic credits

\*\*UO requires application essays of all applicants. Applications evaluated through comprehensive review.

**Remember** that the above information pertains to Oregon's State schools only. Students are encouraged to contact college admissions as early as possible to verify academic credit requirements as they can change and do vary from school to school. They should also be sure to verify the college entrance exams required for admittance and pay close attention to deadlines!

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# Forecasting & Scheduling

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Students select their high school courses for the next school year during the Spring with the help of their counselors and parents. Students must have a parent signature indicating acknowledgement of the chosen courses. Some individual courses may require teacher signature. Counselors will provide students with forecasting materials and a deadline for completing and turning in their signed forecasting sheet. CAIS will host forecasting nights for parents having questions about the process and the best class courses for their student.

## **Class Changes**

Students should be careful in choosing classes during forecasting . Few changes are allowed and only for legitimate reasons. Students are not allowed to change their schedule because they failed to adequately research course descriptions during forecasting, they dislike the course/teacher or because their friends are in a different class.

### Legitimate Class Changes:

1. Incomplete Schedule
2. No prerequisite for a course on the schedule
3. Already received credit for the course requesting to be changed/dropped
4. Failed the course before with the same teacher, if possible

## **Dropping Classes**

Students may request to drop a class during the first five school days of each trimester, based on the same legitimate reasons for changing classes. If accepted, there will be no penalty. After five days a class drop will result in the student receiving an “F” in the class for the trimester. The grade will appear on the student’s transcript and will be computed into the student’s grade point average.

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# CAIS Course Descriptions

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## ENGLISH - 4.0 CREDITS

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Freshman	Sophomore	Junior / Senior
Connections Foundations of Teamwork Profiles of Innovation	Equity in the Workplace Technical Writing	See APG p.16 for English choices.

### Connections

1 Trimester

Grade 9

Connections is a transitional class designed to teach freshman the skills needed to succeed in school and in life. There is a strong focus on reading, writing, speaking and teamwork. Students learn organizational skills and make connections with counselors, administrators and business partners. Students in Connections develop educational goals and research requirements for college and career opportunities.

### Foundations of Teamwork

1 Trimester

Grade 9

Learning how to effectively contribute to a successful team is an essential skill for today's workforce. Beginning with an examination of student's individual strengths (with a complimentary copy of Gallop's "Strengths Finder 2.0") the class will learn to apply themselves within various projects. Aspects of team dynamics will be examined giving students positive tools and knowledge for combating the dysfunctions of a team and how to overcome them.

### Profiles of Innovation

1 Trimester

Grade 9

Students will research and examine well-known innovators and the legacy of their work. Through individual and team research and presentations, the class will identify common traits that lead to success of innovators. Students will study the concept of "lean manufacturing" and participate in an orientation on the concept facilitated by Dale Gehring, CAIS board member and Director of Continuous Improvement at ESCO Corporation. The trimester will culminate with a tour of the ADEC manufacturing facility (a leader in lean manufacturing) located in McMinnville.

### **Technical Writing**

**1 Trimester**

**Grade 10**

This course focuses on the academic essay. Students will be guided through a formal research project: choosing a topic, developing a focus for research, and producing a paper using MLA formatting complete with works cited. Students will also develop and deliver a persuasive speech based upon their research.

### **Equity in the Workplace**

**1 Trimester**

**Grade 10**

This course will examine issues of equity in the workplace and in current society. Students will analyze current articles, literature and legislation related to equity. In keeping with the mission of CAIS, this course will prepare students to be culturally proficient members of tomorrow's innovative workforce. Students will have the opportunity to research, question, discuss and debate in a safe environment where they can express their views and be exposed to differing opinions.

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## **English Electives**

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### **Literary Connections**

**1 Trimester**

**Grades 10-12**

Students will use teamwork skills to navigate challenging texts and make connections to the real world through writing, public speaking and presentations. Students will have the opportunity to research, question, discuss and debate in a safe environment where they can express their views and challenge others.

### **Presentations Skills**

**1 Trimester**

**Grades 9-12**

While most of us have no hesitation speaking to family and friends, doing it in a more formal setting can get your heart pounding with anxiety and even fear. This class will grow your confidence when speaking in front of an audience. Focus will be on informative, persuasive and entertaining types of speeches. The class makes use of video recordings to let you see first hand what you look like on the grand stage. Delivering a coherent message and looking poised and confident in the process will impact all aspects of your life, on the job, at home, even at school. Proficiency is assessed almost exclusively on speeches made to the class, both the content of the speech and how you deliver it.

**Writing for Understanding****1 Trimester****Grade 12***Prerequisite: Students needing to pass State Assessment*

Students will explore ideas through writing in several styles, including persuasive, narrative and expository. This course will focus on specific reading and writing skills from the CCSS. Students will learn strategies to help them write strong academic essays and demonstrate their reading comprehension and ability to analyze text.

**Writing for the Workplace****1 Trimester****Grades 11-12**

This course focuses on different types of writing that students may encounter in the workplace. Students will be guided through a Career Research project, that will take them through the whole process of finding, applying and interviewing for a job. They will have the opportunity to participate in mock interviews with volunteers in managerial positions ‘in the real world’. Students will leave this class with a working file containing a resume and cover letter to assist them in getting a job.

**Small Group Reading & Writing****1 Trimester****Grades 11-12***Prerequisite: Teacher recommendation only*

This course focuses on specific reading and writing skills that will support students to have success in other classes. Various forms of reading and writing will be incorporated to help students increase their individual reading and writing levels. Students will be working small groups and individually with the instructor, so that lessons can be differentiated to meet each student’s unique learning needs.

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## MATHEMATICS - 3.0 CREDITS \*

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Freshman	Sophomore	Junior / Senior
Pre-Algebra (Elective) Algebra 1	Algebra 1 Geometry Algebra 2	Algebra 2 Trigonometry College level Math course

\*3 Credits of Algebra I and higher are required for graduation.

Additionally, students are required to continue in Math thru their Junior year in preparation for the new State test requirements.

### Pre-Algebra (Elective)

**3 Trimesters**

**Grades 8-9**

Focusing on the Common Core Standards for Benchmark 3 with an emphasis on expressions and equations, geometry with parallel lines and triangles, finishing with data collection and statistics.

### Algebra I

**3 Trimesters**

**Grades 8-10**

This course focuses on foundational mathematical skills through the practice of Algebra I concepts.

Concepts will include: Solving and graphing linear equations and inequalities, solving systems of equations, understanding properties of exponents and radicals, and an introduction to quadratics that includes factoring, graphing and solving quadratics. A student's understanding of these concepts will be measured and confirmed by quizzes in which the students must score an 80% or higher to show proficiency in each of the concepts.

### Geometry

**2 Trimesters**

**Grades 8-11**

*Prerequisite: Grade of "C" or better in Algebra 1*

This course develops spatial analytical skills. The main concepts include properties of triangles, quadrilaterals and circles, triangle congruence short cuts with proofs, similarity, the Pythagorean theorem, similarity, an intro to right triangle trigonometry, area and volume. The course will also provide opportunity for students to demonstrate their knowledge of geometry concepts through hands on projects. Proficiency is assessed using projects as well as quizzes and chapter tests.

**Construction Math****1 Trimester****Grades 9-12**

This course uses Geometry and Algebra 1 concepts to design and analyze portions of a house. Students will learn math concepts related to perimeter, volume and area, solving linear and exponential equations, ratios and trigonometry concepts. Portions of the house analyzed include foundation design, joist selection, wall framing, truss development, roofing, plumbing, electrical and HVAC. A number of tradesmen will come into the class to give real life illustrations of how construction is done and where math is involved. Proficiency is assessed using weekly design tasks, presentations to the class and quizzes.

**Manufacturing Math****1 Trimester****Grades 10-12**

*Prerequisite: Teacher Recommendation Only*

This course introduces the study and application of Algebra concepts and the application of real numbers in work-related settings for occupations requiring technical training. Emphasis is placed on using real numbers, exponents, dimensional analysis, ratio, proportion and percent, and solving simple and complex formulas to analyze various work-related problems commonly encountered in the manufacturing and construction worlds. Proficiency is assessed using in-class activities and quizzes.

**Algebra II/Trigonometry****3 Trimesters****Grades 9-12**

*Prerequisite: Grade of "C" or better in Geometry*

This course continues building on understanding how equations can be manipulated and solved in the areas of linear equations, quadratic equations, radicals equations and rational equations, and understanding the relationship between these equations and their graphs and the equations and their inverses and how both graphs and inverses can be helpful in solving problems. Other concepts include matrices, imaginary numbers, conics and sequences and series. A student's understanding of these concepts will be measured and confirmed by quizzes in which the student must score an 80% or higher to show proficiency in each of the concepts.

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## PROJECT LEAD THE WAY (PLTW) - 3.0 CREDITS

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Freshman / Sophomore	Junior / Senior
Introduction to Engineering Design Principles of Engineering Robotics	Engineering Design & Development Computer Integrated Manufacturing

### **Introduction to Engineering Design (IED)      3 Trimesters      Grades 9-10**

*Prerequisite: Algebra I with C or better or Teacher Recommendation*

The major focus of IED is the design process and its application. Through hands-on projects, students apply engineering standards and document their work. Students use industry standard 3D modeling software to help them design solutions to solve proposed problems, document their work using an engineer's notebook and communicate solutions to peers and members of the professional community.

\*\* Students hoping to take Welding or Machine Shop courses at CCC must complete 3 trimesters of IED.

### **Principles of Engineering (POE)      2 Trimesters      Grades 10-11**

*Prerequisite: Intro to P&C and Algebra II with C or better or Teacher Recommendation  
(Science credit given)*

This survey course exposes students to major concepts they'll encounter in a post-secondary engineering course of study. Topics include mechanisms, energy, statics, materials, and kinematics. They develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges, document their work and communicate solutions.

### **Robotics      3 Trimesters      Grades 10-12**

*Prerequisite: POE or Teacher Recommendation*

Students will develop skills in mechanical design (CAD) and construction as they work in teams to build simple and complex robotic devices. Students will explore usage of robotics in modern business and industry and examine how robotic devices are affecting our lives and shaping our culture. Students will apply concepts learned in math and science classes to mechanical devices.



**Computer Integrated Manufacturing (CIM)    2 Trimesters    Grades 10-12**

*Prerequisite: IED*

How are things made? Students learn about robotics and automation, the history of manufacturing, manufacturing processes, computer modeling, manufacturing equipment and flexible manufacturing systems.

**Engineering Design & Development (EDD)    3 Trimesters    Grade 11-12**

*Prerequisite: IED & POE*

Students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process. Students perform research to choose, validate and justify a technical problem. After carefully defining the problem, teams design, build and test their solutions while working closely with industry professionals who provide mentoring opportunities. Finally, student teams present and defend their original solution to an outside panel. Beginning in 2015-2016, students will begin working through this process with industry experts from Benchmade Knife Company to design or redesign a knife.

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## SCIENCE - 3.0 CREDITS

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Freshman	Sophomore	Junior / Senior
Intro to Physics & Chemistry	Principles of Engineering Scuba	Life Chemistry Environmental Science Scuba

### Intro to Physics & Chemistry

2 Trimesters

Grade 9

*Prerequisite: None*

Intro to P&C will give students a foundation in Physics and Life Chemistry. A hands on course that helps students better understand the laws of physics that dictate the natural world as well as the foundations of chemistry that allow it to work.

### Principles of Engineering (POE)

2 Trimesters

Grades 10-11

*Prerequisite: Intro to P&C and Algebra II with C or better or Teacher Recommendation*

This survey course exposes students to major concepts they'll encounter in a post-secondary engineering course of study. Topics include mechanisms, energy, statics, materials, and kinematics. They develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges, document their work and communicate solutions.

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## Science Electives

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### Life Chemistry

1 Trimester

Grade 9-12

*Prerequisite: Intro to P&C*

Life Chemistry offers students a view of how connected the sciences are rather than being separate. In this class students learn chemistry and biology concepts and how they work together to allow for life.

Throughout the class we focus on systems and their parts and functions. We start with the atom and work our way out until we are talking about the world as a whole. Students will be involved in projects and problem solving as well as laboratory procedures.

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## Science Electives continued

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### Environmental Science

1 Trimester

Grades 9-12

*Prerequisite: Teacher Recommendation only*

This project based course allows students to focus their scientific knowledge on the environment we live in. Throughout this course we will analyze aspects of ecosystems as well as develop and test individual student driven projects.

### Introduction to Electronics

1 Trimester

Grades 10-12

*Prerequisite: Teacher Recommendation only*

This course provides overview of key circuit elements - resistors, capacitors, diodes, transistors, etc. Students will learn about what makes electricity flow; how to calculate voltage, current and power; how capacitors, diodes and transistors are fabricated; and how high voltage alternating current from outlets in the wall convert to low voltage direct current used in all electronic devices. In this hands-on course students will learn to read schematics and use them to construct various circuits. Proficiency will be assessed through lab reports from the various experiments and quizzes/tests.

### Scuba

1 Trimester

Grade 10-11

*Prerequisite: Teacher Recommendation only*

*Fee: TBD*

Let's go dive!!! This science elective will get you certified as an open water scuba diver! Whether you are interested in underwater welding, marine biology, or just scuba diving this course will give you the skills you need to be a safe diver. Not only will this course go through the SSI Open Water class, it will also provide you with more of the science that goes into diving and appreciate the marine environments that will be available to you. This course will consist of classroom sessions as well as pool sessions where students will hone the necessary skills before doing their open water checkout dives at the end of the class.

### Advanced Scuba Training

1 Trimester

Grade 11-12

*Prerequisite: Scuba Certified, Teacher Approval, and Good Academic Standing*

*Fee: TBD*

In this course students who are already certified will have the opportunity to take on a leadership role assisting with the certification course for Scuba students. While doing this, Advanced scuba students will pursue specialty certifications of their choosing, after approval from the instructor, and specialize their training to meet their needs.

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## **SOCIAL SCIENCES - 3.0 CREDITS**

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<b>Freshman</b>	<b>Sophomore</b>	<b>Junior / Senior</b>
Global Economics	Economics in US History	Financial Literacy Comparative Economics

### **Global Economics** **2 Trimesters** **Grade 9**

Global Economics is a two-trimester course that analyzes the current state of the global economy. The first half of the class is focused on understanding the principles of economics and how these systems play out on a global scale. Students learn and apply knowledge of different economic systems and how they relate to governments and society. Research skills are taught and practiced in depth, as is essay construction. The second half of the class utilizes the core economic principles by focusing on globalization, cultures, societies and sustainability.

### **Economics in US History** **2 Trimesters** **Grade 10**

The course examines US History through the lens of the political economy. Students examine the cause and effect of events that have shaped the development of the United States. Topics covered are Industrial Revolution, technological developments, Westward Expansion, including social and labor movements and how all of these events are interconnected and set the stage for the US to become an economic superpower in the 21st century. Students examine pivotal events in the 21st century such as WWII, the Marshal Plan, the Policy of Containment, the Cold War (Cuban Missile Crisis, Vietnam Conflict, SALT Treatises) and the fall of the Soviet Union and how these events all led to the United States becoming a lone economic superpower by the end of the 20th century.

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## Social Sciences Electives

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### **Contemporary Economic Issues**

**1 Trimester**

**Grade 10-12**

*Prerequisite: Global Economics*

This course examines a wide variety of current economic issues that are taking place in the global economy of the 21st century. Students investigate and research subject matters ranging from energy consumption to the global economic crisis, sustainable development and consumer product safety. Students will also have the opportunity to examine an economic issue of their interest to investigate and analyze the economic impact of the issue at the local, national and global levels. By the end of the course students have a strong grasp and understanding of the economic issues facing the global economy in the 21st century.

### **Financial Literacy**

**1 Trimester**

**Grade 11-12**

*Prerequisite: None*

In this course students acquire the ability to make informed judgments and to take effective actions regarding the current and future use and management of money. It includes the ability to understand financial choices, plan for the future, spend wisely and manage the challenges associated with life events such as a job loss, saving for retirement, or paying for a child's education.

### **Student Government & Leadership**

**2 Trimesters**

**Grades 10-12**

This course is designed to provide students an opportunity to work together in achieving student created goals. Students will form a governing body with a board of directors, learn how to form committees, delegate responsibilities and follow through with commitments. The class will consist of two phases. A planning and fundraising phase and an implementation phase of a service-learning project. This will align with the service goals of CAIS and the local Rotary International Chapter.

### **Survey of Social Sciences**

**1 Trimester**

**Grade 11-12**

*Prerequisite: Global Economics*

In this course students are exposed to 6 of the major social sciences and will practice qualitative research methods in the school and community. Topics covered in this survey class are anthropology, political science, psychology and human development, geography, media studies and criminal justice.

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## PHYSICAL EDUCATION - 1.0 CREDITS

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### PE Bootcamp

1 Trimester

Grades 9-12

This class focuses on developing young people physically and mentally, helping them better prepare for the challenges that life throws at them. Using real-world functional exercises, students of any fitness level will learn how to scale training sessions to meet their current and future needs by utilizing their own bodyweight and what nature provides around them for external resistance. This class will change who you are and your perspective on life.

### PE Activities

1 Trimester

Grades 9-12

PE Activities is a course designed to allow participation in team, dual and individual sports. Emphasis is on information and skill necessary to develop and to participate in physical fitness activities, including cardiovascular endurance, strength and flexibility. Activity units are three weeks in length and may include soccer, football, volleyball, tennis, badminton, basketball, softball and pickle ball. A primary emphasis is place on student lifelong participation in physical fitness.

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## HEALTH - 1.0 CREDITS

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Freshman / Sophomore	Junior / Senior
Health and Wellness	Industrial Safety & First Aid

### Health & Wellness

1 Trimester

Grade 9-10

Health & Wellness is the first part of an organized, sequential curriculum for teaching students the information and skills they need to become health literate, maintain and improve health, prevent disease, and reduce health-related risk behaviors. The curriculum helps students develop skills to protect them from the six categories of risk behaviors identified by The Centers for Disease Control and Prevention.

### Industrial Safety & First Aid

1 Trimester

Grade 11-12

The industrial safety course is designed to provide the student with a basic understanding of safety hazards and first aid in the workplace. Includes eye safety, grinding wheel hazards, electrical/chemical hazards, slips, falls and back injuries. Instruction in Red Cross, First Aid, Automated External Defibrillator (AED) and CPR.

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# ELECTIVES

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## CAIS

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*These electives are possible options that CAIS is hoping to provide based on request/demand from students. Please keep in mind that they may not be provided the following school year.*

### **Digital Circuits**

**1 Trimester**

**Grades 10-12**

*Prerequisite: Introduction to Electronics (Science)*

This is a follow-up course to Introduction to Electronics. The emphasis is on learning Boolean Algebra, using it to analyze logic gates such as AND, OR, NOT. Constructing these gates and circuit elements such as flipflops and counters, and using those elements to construct functional circuits. This is a hands on course where students will learn the theory behind circuit operation and construct electronic circuits using integrated circuits. Proficiency will be assessed using lab reports and quizzes.

### **Digital Electronics**

**2 Trimesters**

**Grades 10-12**

*Prerequisite: Introduction to Electronics & POE*

Provides an in-depth introduction to combinational logic, gates, Boolean Algebra, Karnaugh Mapping, number systems/codes, arithmetic circuits, decoders/encoders, mux/demux, comparators, basic sequential gates (latches/flipflops) as well as an introduction to HDL (Verilog/VHDL) and PLD hardware implementation.

### **Digital Photography**

**1 Trimester**

**Grades 9-12**

In the Digital Photography course, students will learn creative photographic skills and processes. Students will be given specific shooting assignments that will reinforce the information they learn in class. Students will share digital photographic work online with classmates. The concept of design as a manner of visual communication is carried throughout. Students will build a portfolio of work and will explore the fields of photography and graphic arts. Camera phones are not allowed. Some projects will require the use of a computer. Computer programs will include Photo Shop and Illustrator. Students may be asked to keep a Portfolio.

## **Intro to Electronic Wiring**

**1 Trimester**

**Grades 10-12**

*Prerequisite: Introduction to Electronics & POE*

Provides an overview of the techniques and methods used to distribute electrical power throughout buildings. Topics that may be covered include high voltage wiring (conductor sizing, safety requirements, application of geometry/algebra/trigonometry concepts to solve problems, etc) and low voltage wiring commonly used for telephone, networking and fire/life-safety systems. The course would be jointly taught by certified electricians and will consist of a significant amount of hands on work.

## **Marketing I**

**2 Trimesters**

**Grades 10-12**

Ever wonder why you love shopping at one store but never find anything you like in another? Do you have an idea for a product but don't know where to start? This project-based marketing course is for you! Students learn about the business activities that take place in order to get a product or service from the idea stage thru the manufacturer to the consumer. If you're interested in the skills necessary for careers or further education in business or marketing, Marketing I is a great introduction. We'll cover selling, promoting distribution, pricing and basics business skills needed to market your great idea. Pre-Algebra

## **Presentations Skills**

**1 Trimester**

**Grades 9-12**

While most of us have no hesitation speaking to family and friends, doing it in a more formal setting can get your heart pounding with anxiety and even fear. This class will grow your confidence when speaking in front of an audience. Focus will be on informative, persuasive and entertaining types of speeches. The class makes use of video recordings to let you see first hand what you look like on the grand stage. Delivering a coherent message and looking poised and confident in the process will impact all aspects of your life, on the job, at home, even at school. Proficiency is assessed almost exclusively on speeches made to the class, both the content of the speech and how you deliver it.



**Quality Control Methods****1 Trimester****Grades 10-12**

*Prerequisite: Algebra 2B with a "C" or better (Math Credit given)*

Why do companies only check a small sample of material to determine if an entire run meets their quality levels? How can you design an experiment that will accurately determine if a new or modified process will work? This class dives into the world of statistics to explore how math is used in the workplace to streamline production and reduce costs. We will analyze a number of scenarios provided by CAIS industry partners to develop a working knowledge of the methods commonly employed in manufacturing to make decisions and test new proposals.

**Teacher/Office Assistant****1 Trimester****Grades 9-12**

*Prerequisite: Teacher & Counselor approval*

Students assist individual teachers or office staff with paperwork, errands, duplicating materials, computer entry, word processing, filing, and other tasks as assigned. All student assistant positions demand excellent attendance, confidentiality, the ability to follow directions, and the ability to work independently. Student assistants should be prepared to work hard, sometimes on tasks that are not especially interesting (i.e., filing). Applicants must have a minimum 2.5 GPA and no major discipline referrals. If you would like to be an assistant you will need to pick up a permission slip from the counselor and acquire signatures from the requested teacher and the principal.

**Yearbook****1 Trimester****Grades 9-12**

*Prerequisite: Approval based on good attendance, academic and discipline records.*

Students in this class will work on creating and producing the CAIS Yearbook. Students have the opportunity to learn and utilize organization skills, photography, writing, copyediting, publishing, layouts and business skills. Yearbook staffers are expected to commit time outside of the school day for covering activities and completing pages for deadlines.

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## **OREGON CITY HIGH SCHOOL**

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The only OCHS classes available for CAIS students for the 2015-2016 school year will be the JROTC program.

\*Transportation is not provided. Students will need to arrange their own rides to and from home and CAIS.

### **JROTC**

**3 Trimesters**

**Grades 9-12**

*Fee Required: Annual \$10.00 PT Uniform & \$13.00 beret (headgear)*

JROTC (Junior Reserve Officers Training Corps) has four levels of Leadership, Education and Training (LET). Students successfully completing two years of JROTC Physical Training (PT) requirements may also receive a half credit (0.5) for physical education.

LET 1 - Grades 9-12

LET 2 - Grades 10-12

LET 3 - Grades 11-12

LET 4 - Grade 12

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## CCC - CAREER & TECHNICAL TRAINING (CTE)

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The following courses are the Career & Technical Education courses offered to CAIS students, Sophomore and higher only. Students must meet the enrollment policy on page 12 and have a CCC Policy Agreement form signed to enroll in these courses.

Keep in mind that these courses are 2-period classes when adding them to your forecasting sheets. Other college courses will be considered on a case-by-case basis and will be determined by student credits, course progression and must be approved by the counselor.

### Mechanic Program (Grades 10-12 only)

#### **Beginning Mechanics**

**Fall**

Landeem

AM-010/4 Credits

Entry level course offers instruction in automotive service careers, basic automotive systems, use of hand and power tools and precision measuring. Shop and personal safety are stressed throughout the course. Student vehicles may be used for maintenance ore repair with the instructor's approval.

#### **Advanced Mechanics**

**TBD**

Landeem

AM-121/3 Credits

Prerequisite: AM-010

This course builds on topics present in Automotive fundamentals. One of the major assignments will be the disassembly, condition evaluation and re-assembly of an automobile engine. Student vehicles may be used for maintenance or repair with the instructor's approval.

#### **Small Engine Repair**

**TBD**

Berlinger

AM-118/3 Credits

This course is designed to provide high school students with an overview of basic small engine maintenance, operation and repair. Classroom instruction combined with hands-on shop activities is provided in this course.

## Collision Repair Program (Grades 10-12 only)

### **Collision Repair**

**TBD**

Spain

AB-113/4 Credits

Entry level course offers instruction in careers, vehicle construction, hand and power tool use, collision repair techniques and collision repair welding. Shop and personal safety are stressed throughout the course. Student vehicles may be used for repair with the instructor's approval. (Weekly welding day will be announced the 1st week of class.)

## **\*\*Welding Technology Program**

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(refer to IED p.19)-Grades 10-12 only

Students in these courses will learn to use various pieces of shop equipment such as the pedestal and hand grinders, belt sander, oxyfuel and plasma arc cutting torches, the shear and the iron worker.

### **Shielded Metal Arc Welding I (stick) A**

**Fall**

Voskuil

WLD-111/4 Credits

WLD-261/2 Credits

The first level will focus primarily on using several different electrodes to perform fillet welds in all positions. Other technologies that will be studied include: Oxyfuel cutting and carbon arc gouging.

### **Shielded Metal Arc Welding II (stick) B**

**Winter**

Voskuil

WLD-111/4 Credits

WLD-261/2 Credits

The second level will focus primarily on using E7018 electrodes to perform groove welds in all positions to get ready for possible welding certification.

### **Gas Metal Arc Welding/Flux Core Arc Welding 1 (wirefeed) A**

**Winter**

Voskuil

WLD-113/4 Credits

WLD-261/2 Credits

The first level will focus primarily on using GMAW and FCAW to perform fillet welds in all positions on sheet metal and on plate. Other technologies that will be studied include oxyfuel and plasma arc cutting.

### **Gas Metal Arc Welding/Flux Core Arc Welding II (wirefeed) B**

**Winter**

Voskuil

WLD-113/4 Credits

WLD-261/2 Credits

The second level will focus primarily on using FCAW to perform groove welds in all positions to get ready for possible welding certification. Students will continue to increase their skill level in oxyfuel cutting, plasma arc cutting and in using the various pieces of shop equipment.

## **Gas Tungsten Arc Welding I (TIG) A**

**Spring**

Voskuil

WLD-115/4 Credits

WLD-261/2 Credits

The first level will focus primarily on performing fillet and groove welds on steel, stainless steel and aluminum in the flat and horizontal positions. Other technologies that will be studied include plasma arc cutting.

## **Gas Tungsten Arc Welding II (TIG) B**

**Spring**

Voskuil

WLD-115/4 Credits

WLD-261/2 Credits

The second level will focus primarily on performing fillet and groove welds on steel, stainless steel and aluminum in all positions to get ready for possible welding certification. Students will continue to increase their skill level in plasma arc cutting and in using the various pieces of shop equipment.

## **\*\* Manufacturing Technology Program**

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(refer to IED p.19)-Grades 10-12 only

### **Machine Shop I**

**Fall & Winter**

TBD

MFG-110/3 Credits

The first level will focus primarily on fundamental machining skills with an emphasis on the operation of Vertical Milling Machines, Engine Lathes, Horizontal Band Saws and Pedestal Grinders. Other technologies that will be studied include: precision measurement, cutting tools, print reading and Computerized Numerical Control (CNC).

### **Machine Shop II**

**Fall & Winter**

TBD

MFG-111/3 Credits

The second level will build on skills developed in the Machine Shop I class with a continued emphasis on the set-up and operation of Vertical Milling machines and Engine Lathes. There will be a marked increase in the complexity of the projects.

### **Machine Shop III**

**Fall & Winter**

TBD

MFG-112/3 Credits

The third level will build on skills developed in the previous classes and will allow time for students to design and build their own project. Again, there will be a marked increase in the complexity of the projects.

## Machine Shop Independent Study

Fall, Winter & Spring

TBD

MFG-110/3 Credit6

Independent Study will allow the student to build on skills developed in the previous classes. Students will design and build their own project. Student projects will have a higher degree of complexity and must be approved by the instructor.

## Automated Machining & Programming

Anderson

Spring

*(PreReq: Machine Shop I, II & III)*

MFG-204/4 Credits

MFG-210/2 Credits

This “hands on” class is designed to introduce students to CAD/CAM programming as well as CNC Machining. Topics covered include: the creation of 2D/3D wire-frame CAD Models, solid CAD models, the creation and manipulation of 2-1/2 axis CAM tool-paths using MasterCam, and the set-up and operation of CNC Vertical Machining Centers.