

# Central Catholic High School



Course Catalog  
2021-2022

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# Scheduling Basics

## *Incoming Freshmen*

Initial 9th grade courses are determined by the results of the High School Placement Test (HSPT) that is taken as part of the application process. For students that would like to be considered for Honors or AP level courses, but do not meet the minimum HSPT scores, additional testing can be taken in May of the 8th grade year. Instructions on how to select courses and additional Honors/Advanced tests are included in the Acceptance Packet. Incoming 9th graders will receive their course placements in summer prior to the start of 9th grade. This Course Catalogue serves as an overview of the scope and sequence of the curriculum at Central Catholic High School.

## *Transfer Students*

Transfer students will be placed in courses in accordance with their high school transcripts, records, recommendations, and the transferring student's input with regard to preferences and academic pursuits. This process will take place after the student is officially accepted and enrolled for the new school year.

## *Continuing Students*

Currently enrolled students will select courses for the next academic year in the spring following the end of the 3rd quarter marking period. Students will receive a course card which will include all core class and elective requirements for the next grade as well as informational videos and resources from the school counseling office. Students will meet with all current teachers during a scheduled, in class, course card signing day to receive their course recommendations for the following year. Recommendations by teachers will be based on a student's performance in the current course. *If a student /parent disagrees with a teacher recommendation or a student does not meet prerequisites for a particular course, the issue should be addressed directly with the teacher.* Consultation with the assigned school counselor is acceptable if a resolution cannot be reached with the teacher.

Course cards must be signed by both the student and a parent/guardian prior to submission to the assigned counselor. ***Course requests must also be submitted through the PowerSchool scheduling portal by a designated deadline in order to complete the course selection process.*** It should be noted that the selection of certain courses does not guarantee that the student will receive these courses on his schedule. Course availability is dependent on interest from the student body, individual course schedules, capacity and staffing. If any scheduling conflicts arise, students will be contacted through their school assigned e-mail addresses from their assigned counselor or school administrator over the summer. Students that do not reply to school outreach regarding scheduling conflicts will automatically have course selections chosen for them.

## *Scheduling Changes*

The course selection process should be taken seriously as any changes made after the last day of school will be subject to a \$50 late fee and will require administrative approval. *As of August 1st, no changes will be made to student schedules unless he has been contacted by a school counselor or administrator regarding a scheduling conflict.* The academic schedule that a student receives during their orientation day at the beginning of the academic year will be considered final.

Dropping or adding courses after the start of the academic year is permitted only under the following circumstances:

- student is misplaced
- lacks necessary pre-requisites for the class
- school/computer error
- extenuating circumstances (i.e. medical, family)

Course change requests can be initiated by the teacher, student, parent, or school counselor within the first (9) full weeks of the year for full credit courses and within the first (5) full weeks of the semester for half credit courses. Students must complete a schedule change request form and submit it to their assigned counselor. Any course change requests received after these deadlines will not be accepted. Questions regarding a student's academic placement should be directed to the Assistant Principal for Academic Affairs or the assigned counselor.

# Course Levels

## *Bishop McDowell (Level 2)*

Designed to facilitate student success through the development and reinforcement of necessary skills, Level 2 classes are part of the Bishop McDowell program. This program encourages students, through a variety of individually designed activities, to become thoroughly familiar with their own learning styles. Level 2 classes provide students with extra support and structure with the aim to help them progress in the college preparatory curriculum.

## *College Preparatory (Level 3)*

College Preparatory (Level 3) courses are a part of a comprehensive curriculum that is offered as an option in all content areas to students in grades 9–12. The college preparatory courses are designed to prepare a student for college upon graduation by challenging him within the required program of studies. If a student wishes to move to an Honors level, he must fulfill the prerequisites described in each course description within this course catalogue.

## *Honors (Level 4)*

Honors level courses are more rigorous than College Preparatory courses. The explanation and requirements can be found in the forthcoming pages, according to department. All Honors courses are weighted and are available to students in grades 9–12. Acceptances into Honors courses at the ninth-grade level are dependent upon a standardized test scores and Honors/Advanced placement exams.

## *College in High School (Level 4 or 5)*

College in High School courses are taught at a college-level in association with a local college or university; the courses are taught at Central Catholic and by Central Catholic faculty who have been approved and accredited by the college or university. The college or university granting credit for the course determines the syllabus of course. All students who enroll in a CiHS course MUST register with the college or university offering the course for the associated college credit. There is a nominal fee set by the college/university for these courses. College credit is awarded according to the criteria set by the higher education institution.

## *Advanced Placement (Level 5)*

Advanced Placement (AP) courses are college-level courses approved by the College Board and subject to syllabus review every three to five years. Students who register for AP courses are required to take the AP Exam in May of each year. The College Board sets the exam schedule and fee. The School Counseling Department and the teacher of the AP course will provide specific information on AP course registration, exam date, and fee to the student.

# Graduation Requirements

In order to receive a diploma from Central Catholic, students must earn 27 credits of passing work. During the Freshman and Sophomore years, students will take 7 credits while during the Junior and Senior years, students will take 6.5 credits.

Course	Credits	Course	Credits
English	4	Religion	4
Fine Arts	.5	Science	3
Health/Physical Education	1	Technology	.5
History & Social Studies	3	World Language	2
Mathematics	3	Electives	5.5

## Sample Course Load Per Year

9th Grade	10th Grade	11th Grade	12th Grade
English	English	English	English
History & Social Studies	History & Social Studies	History & Social Studies	Religion
Mathematics	Mathematics	Mathematics	Elective
Religion	Religion	Religion	Elective
Science	Science	Science	Elective
World Language	World Language	Elective	Elective
Physical Education (1 semester)	Health (1 semester)	Elective	Elective
Technology (1 semester)	Elective	Elective	Elective

\*Please note the following: The above is a sample of a student's course load per year across all four years. Changes or substitutions may be requested based on a variety of needs.

# CC/OC Collaboration

In an ongoing effort to collaborate in various ways, Central Catholic High School and Oakland Catholic High School make certain courses available to students from both schools in a limited capacity. Only Juniors and Seniors are eligible to register for these select courses, with the exception of Band, which is open to students in all grades. As electives, these courses cannot serve as substitutions for the core curriculum of either school. Descriptions of the classes can be found in this catalogue under the appropriate academic department. Below is a list of shared course offerings for the 2021-2022 academic year:

## *Courses taught at Central Catholic but offered to Oakland Catholic:*

- AP Art History
- Computer Aided Design (CAD)
- Engineering 1
- Marching & Concert Band

## *Courses taught at Oakland Catholic but offered to Central Catholic:*

- Intermediate College French
- AP French
- Chinese 2



# Art

Level	Course Name	Number	Semester	Credits	Days
3	Studio Art I	0710	Both	1	6/6

Studio Art I provides an introduction to the elements and principles of art and design, perspective and drawing techniques. This course is a foundation program designed to introduce basic drawing, color and design techniques. *This meets the fine arts requirement.*

Level	Course Name	Number	Semester	Credits	Days
3	Studio Art II	0721	Both	1	6/6

Studio Art II is an introduction to drawing of objects and people. Other media introduced this year are relief print process, collage, show card paints and mixed media. *This meets the fine arts requirement.*

Level	Course Name	Number	Semester	Credits	Days
3	Studio Art III	0731	Both	1	6/6

Studio Art III is designed to master the drawing techniques learned in Art II. Print making, water color, and acrylic painting are also introduced. *This meets the fine arts requirement.*

Prerequisite: Studio Art II

Level	Course Name	Number	Semester	Credits	Days
3	Principles of Art and Design	0743	One	.5	6/6

This course provides an introduction to the elements and principles of art and design, perspective and lettering techniques. This course is a foundation program designed to introduce basic drawing, color and design techniques. *This meets the fine arts requirement.*

Level	Course Name	Number	Semester	Credits	Days
3	Cartooning	0161	One	.5	6/6

In cartooning class students will develop an appreciation for the history and aesthetic of the cartoon arts as well as practical skills that will help them develop a portfolio of work for their college and professional aspirations. The students will view cartoons of historical significance as well as reading comics, comic strips, and editorial cartoons that have had profound impact on pop culture and the American experience. Practical skills include not just drawing skills, but the tools needed for character development, character relationships, storytelling, storyboarding, and a wide variety of skills that will be used for class projects. Projects will include developing a comic strip, editorial cartoon, comic book story, greeting card and more, in the hopes of developing not just a solid grounding in basic skills but for practical application in the school newspaper and exhibitions. Students will learn the real-life process of getting their work published and pursuing cartooning as a viable career. Students will also have the opportunity

to meet and work with other professional cartoonists that are members of the National Cartoonists Society. *This meets the fine arts requirement.*

Level	Course Name	Number	Semester	Credits	Days
4	Studio Art IV	0741	Both	1	6/6

Studio Art IV introduces new techniques of intaglio, drawing and design. Students will prepare an acceptable portfolio. The class will also offer an opportunity to participate in the scholastic art competition as well as an opportunity for a “one man show” at the end of the school year. *This meets the fine arts requirement.*

Prerequisite: Studio Art III

# Business

\*Seniors will have priority in enrollment in ALL Business Courses

Level	Course Name	Number	Semester	Credits	Days
3	Accounting I	0635	Both	1	6/6

The purpose of the course is to instruct the student how to keep orderly financial records, summarize them for convenient interpretation, and then analyze them. The course will introduce students to the financial operations of various types of businesses. Manual and automated methods of processing financial data will be covered in detail. Three accounting projects will be a course requirement, and a problem test will be given after each unit in the text is finished.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Accounting	0636	Both	1	6/6

This Accounting Pilot and Bridge Project uses an integrated approach to teach real world accounting. Students will first learn how businesses plan for and evaluate their operating, financing, and investing decisions, and then how accounting systems gather and provide data to internal and external decisions makers. This year-long course includes the learning objectives of a traditional college level financial accounting course, and those from a managerial accounting course. College in High School is offered.

Prerequisite: Minimum of a B in Algebra II and a B in Accounting I or instructor approval.

Level	Course Name	Number	Semester	Credits	Days
3	Financial Algebra	0648	Both	1	6/6

This course is for developing an understanding of financial algebra in business and in life. The student will apply skills mastered in Algebra 1 and 2 to real world business problems and financial decisions in life. The student will use algebra skills to solve problems in the following areas: Investing, Banking, Credit, Income Tax, Insurance, and Household Budgeting. This is a full year course offered to seniors.

Prerequisite: 80% or above in Algebra 2

Level	Course Name	Number	Semester	Credits	Days
3	Principles of Entrepreneurship	0631	One	.5	6/6

In this business course, learn what it takes to be an entrepreneur while mastering the basics of planning and launching a successful business. Whether starting our own money-making business or creating a non-profit to help others, this course develops the core skills needed to be successful. Come up with new business ideas, attract investors, market your business, and manage expenses.

Level	Course Name	Number	Semester	Credits	Days
3	Personal Finance	0632	One	.5	6/6

In this finance course, learn what it takes to understand the world of finance and make informed decisions about managing finances. Whether learning more about economics or becoming more confident in setting and reaching financial goals, this course will develop the core skills to be successful. Learn how to open bank accounts, invest money apply for loans, explore careers, create a spending plan, prepare a budget, make decisions about major purchases and more.

Level	Course Name	Number	Semester	Credits	Days
3	Business Law and Ethics	0667	One	.5	6/6

This one semester course provides students with an understanding of the legal framework of our society. The topics covered include the history, development, and classification of laws, personal and business law related to everyday life, contract law, the court system and courtroom procedures, legal terminology, constitutional rights, ethics, technology law, intellectual property, social responsibility, international law and consumer protection. College in High School is offered.

# Engineering & Computer Science

Level	Course Name	Number	Semester	Credits	Days
3	Introduction to Technology for the 21st Century	0675	One	.5	3/6

This course gives freshmen a breadth of knowledge into the STEM fields. Using Lego EV3 robotics kits, students will work in groups of two or three to develop solutions to basic problems. To implement their solutions, they will learn basic programming skills to build and program robot models. Working as a team will be emphasized and evaluated. Through the use of the Central Catholic iPad program, students will be competent and comfortable using the Central Catholic network, PowerSchool, Moodle and Microsoft Office applications. Microsoft Word, PowerPoint, and Excel will be covered and allow students to translate their understanding of each to their other courses. Internet safety and appropriate use will be emphasized. Students will be introduced to the Engineering Design Process by building racecars out of every day, familiar materials. Course assessments will be in the form of projects, written assignments, computer assignments, quizzes, and unit tests.

Level	Course Name	Number	Semester	Credits	Days
3/4	Engineering I - Using Math to Engineer a Modern Society	0371	One	.5	3/6

Modern societies are possible in part due to a complex and reliable infrastructure that is able to support large numbers of people living and working near each other. Engineers are the inventors, developers, and maintainers of that infrastructure, and math is one of the foundations upon which engineering rests. This course is a project-based introduction to engineering and the engineering design process. Course units include engineering design, strength of materials and structures, and bridge analysis and design. A formal presentation is required at the completion of a major group project. Assessment emphasizes team-work and successful completion of projects. Some project work will require meeting outside of class to complete.

Prerequisite: 80% or higher in level 3, 4, or 5 math classes.

This course cannot be taken with Experiential Engineering (377) and cannot be taken if Experiential Engineering has already been taken.

Level	Course Name	Number	Semester	Credits	Days
3	Experiential Engineering	0377	One	.5	3/6

Ancient civilizations created complex works of architecture using fundamental math and physics skills coupled with a hands-on approach to design and implementation. That approach is still applicable today as the need for expedient and short-term solutions that work and are safe are preferable in some instances to the perfect solution that takes more time to develop and implement. This course is a hands-on project based introduction to engineering and the engineering design process. A formal presentation is required at the completion of a major group project. Assessment emphasizes team-work and successful completion of projects.

This course cannot be taken with Engineering 1 (371) and cannot be taken if Engineering 1 has already been taken.

Level	Course Name	Number	Semester	Credits	Days
3/4	Principles of Robotics	0392	One	.5	3/6

This course gives students an introduction into robotics and computer science and is ideal for students looking to further pursue courses or an eventual career in the fields. Computer science has many branches (software development, networking, cyber-security, data mining, game development, simulation, etc.), however you start by programming. Lego EV3 robots will be used to take a hands-on approach to building and programming robots as a basis for introducing other important concepts that are relevant across all computer science languages: program design, the development and use of fundamental data structures, the study of standard algorithms, and an understanding of hardware and software components. The use of mathematics is vital to person's success in the computer programming world and will be a focus of the course. This course is for students of all ability levels and robotics and computer science backgrounds. This is a Level 3 course, however Level 4 credit can be earned if students program, design, and build VEX robots using RobotC or FIRST robots as well as compete in at least one out of school VEX or FIRST competition.

Level	Course Name	Number	Semester	Credits	Days
3/4	Computer and Network Architecture	0389	One	.5	3/6

Computers, tablets, and smartphone are all around us connected to the internet and most people never care how they work until they do not. At the conclusion of the first nine weeks of this course, a student will be able to explain in great detail how the keystroke from a keyboard appears on monitor. This involves learning about binary, ASCII, peripherals, buses and bus speeds, interrupt requests, RAM, cache, registers, and the CPU cycles, how data is stored and retrieved as well as BIOS and how the operating system loads. At the conclusion of the second nine weeks of this course, a student will be able to setup and configure a home Local Area Network (LAN). This involves learning about TCP/IP protocols, switches and routers, security, and the OSI model. Hands on projects are a mainstay of this course as well as the ability to do independent research. Students wishing to take this for honors credit have options of an extended project or research paper depending on the availability of practical projects. *This meets the fine arts requirement.*

Level	Course Name	Number	Semester	Credits	Days
3/4	Algorithmic Thinking & Computer Programming Fundamentals	0394	One	.5	3/6

This course is designed to develop a student's ability to think algorithmically. The bulk of this course will be centered around solving abstract problems with computational methods. Students will learn to think critically and to deconstruct problems in an unfamiliar context. Students will learn the Python programming language to express their solutions and demonstrate their correctness. The course will emphasize technique mastery as well as the specific semantics of the Python language and runtime environment. Fundamental topics include variables, data types, conditionals, and loops. Students may also receive instruction in Python classes and objects.

This course may serve as a prerequisite for AP Computer Science and/or the College in High School course "Programming with Java".

Prerequisites: Must be a junior or a senior, or a sophomore with a 93% in Honors Algebra 1 or an 88% in Honors Algebra 2.

Level	Course Name	Number	Semester	Credits	Days
3/4	Computer Aided Design (CAD) & 3D Modeling	0381	One	.5	3/6

The engineering design process follows the steps of planning, design, prototyping, testing, and redesign. The use of software programs and 3-D printing to assist in the design, prototype, test, redesign processes shortens the development cycle and provides professional tools to be accessible at the high school level. This course provides students with the fundamentals of computer-aided design (CAD) and 3D modeling that are used in differing engineering fields. This course uses AutoDesk Design Academy. It is a comprehensive pre-engineering, pre-architecture, and cross-discipline program developed specifically for secondary schools. The Design Academy's curriculum meets national standards and provides classroom materials that ensure students master the fundamental of the design process while learning to use the same AutoDesk software that professionals use. An opportunity for certification is available for interested students. Assessments will include design projects, exams, presentations, and a final project. For students interested in the Honors credit, they must become certified in AutoDesk Inventor.

Level	Course Name	Number	Semester	Credits	Days
3/4	Computer Network Fundamentals	0383	One	.5	3/6

Computers and other electronic devices communicate through networks. Although most users do not think about networks (unless they crash or are slow), the computer network field is built on a solid theoretical foundation and is flexible enough to meet the networking needs of a small Local Area Network (LAN) up to the Internet. This course is modeled on CISCO's Introduction to Networks course and their Routing and Switching Essentials course. Cisco CCNA-1 certification is a possibility for students.

This course describes the architecture, components, and operations of routers and switches in a Local Area Network (LAN). Students use the OSI model to understand the different network layers and how they work together to create a network. In conjunction with the OSI model, the TCP/IP network model is covered extensively. Students learn how to configure CISCO routers and switches that would be used in a network environment supporting 100 or more devices. Students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. Assessments will include design projects, exams, presentations, and hands on assessments.

Level	Course Name	Number	Semester	Credits	Days
4	Engineering Design	0386	One	.5	3/6

This capstone course provides an opportunity for students to further develop and use the engineering design process. This course primarily consists of a semester-long group project that addresses a problem or issue in the community. Students will use their mastery of the design process and teamwork to develop a solution to address a local issue. As part of the solution, students must apply the engineering process to develop a product to meet the customer's needs. The course provides an opportunity for students to interface with the local community, apply their knowledge of the engineering design process, and work collaboratively. The course also provides an opportunity to use their mastery of other subjects across curriculums while completing the project. Students will be assessed on all aspects of the design process, teamwork, communication, quality of the final project, and presentations. Projects will require meeting outside of class to complete. Some projects may be completed in conjunction with an external competition.

Prerequisite: Engineering I (371) OR Experiential Engineering (377) OR CAD and 3D Modeling (381), OR CNC Programming (387).

Level	Course Name	Number	Semester	Credits	Days
3	CNC Programming	0387	One	.5	3/6

The engineering design process follows the steps of planning, design, prototyping, testing, and redesign. The use of software programs and modern machining equipment to assist in the design, prototype, test, redesign processes shortens the development cycle. This course provides students with the fundamentals of machining equipment and associated software that are used in today's engineering fields and provides professional tools accessible at the high school level. Students will develop their mastery of the design process while learning to use the same Vectric V-Carve software and a CNC Milling machine that professionals use. Students will learn equipment and develop their skills in the engineering design process through a series of hands-on projects and will learn fundamental skills that they can apply in the future. Assessments will include design projects, exams, presentations, and a final project.

Level	Course Name	Number	Semester	Credits	Days
5	AP Computer Science	0370	Both	1	6/6

The AP Computer Science course covers the topics in a typical introductory college computer science class, focusing on the study of the fundamental principles associated with object-oriented programming using the Java language. Topics include classes, objects, data types, variables, Boolean expressions, methods, loops, and input/output. Advanced topics include searching, sorting and recursion. There is an emphasis on problem-solving and algorithm development throughout the course.

Students who register for this course must take the AP Computer Science A examination at the end of the year. Prior programming experience is highly recommended. A strong interest in Computer Science and a proven academic record are required.

You must see Mr. Andrew Sweeney (Math Department) for approval.



# English

Students wishing to change course levels for the following school year, may be asked to write a timed essay, must receive teacher recommendation based on their current overall average in the course as well as their writing average, and meet the following minimum requirements:

Level 3 - Advanced*	95% in Level 3
Level 3 - Level 4	98% in Level 3
Level 4 - Advanced*	85% in Level 4
Advanced - Level 4**	95% in Advanced
Level 4 - Level 4	90% in Level 4
Advanced - Level 5**	98% in Advanced
Level 4 - Level 5	93% in Level 4
Level 5 - Level 5***	85% in Level 5

\* Freshman Year Only  
 \*\* Sophomore Year Only  
 \*\*\* Senior Year Only

## Freshman Year

Level	Course Name	Number	Semester	Credits	Days
2	Exploring Literature & Writing 1	0119	Both	1	6/6

Students who have previously experienced difficulty in language arts, reading or literature and who have scored below average on the placement test are assigned to this level. The course, which is the first part of a two-year program, itself focuses on fundamental genre study and essay composition, and is designed to complement the freshmen social studies course.

Level	Course Name	Number	Semester	Credits	Days
3	Exploring Literature & Writing 1	0118	Both	1	6/6

While requiring a good amount of writing, analysis, and skill work, this course moves at a less intense pace than the honors course. This level is recommended for students scoring from the 40th through 87th level on the standardized examinations. The course, which is the first part of a two-year program, itself focuses on fundamental genre study and essay composition, and is designed to complement the freshmen social studies course.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Exploring Literature & Writing 1	0117	Both	1	6/6

The honors English course demands more intense writing and analysis. Students are assigned to this level if they have demonstrated ability by scoring at the 88th percentile or higher in Reading and Language on the placement test or by participating in a timed, writing evaluation by the English Department in May of the 8th grade year. This course, which is the first part of a two-year program, focuses on fundamental genre study and essay composition, and is designed to complement the freshmen social studies course.

## Sophomore Year

Level	Course Name	Number	Semester	Credits	Days
2	Exploring Literature & Writing 2	0123	Both	1	6/6

This course continues the fundamental genre study and essay composition study of the freshman course and is designed for the student who had difficulty with the skills developed during freshman year. The subject matter of the course will be taken from a broad selection of world, British, and American classics, and is designed to complement the sophomore social studies course. Students will sharpen thinking skills through writing assignments and class discussion. In addition, students will sharpen vocabulary, speech, and research skills through a variety of assignments.

Level	Course Name	Number	Semester	Credits	Days
3	Exploring Literature & Writing 2	0121	Both	1	6/6

This course continues the fundamental genre study and essay composition study of the freshman course. The subject matter of the course will be taken from a broad selection of world, British, and American classics, and is designed to complement the sophomore social studies course. Students will sharpen thinking skills through writing assignments and class discussion. In addition, students will sharpen vocabulary, speech, and research skills through a variety of assignments.

Level	Course Name	Number	Semester	Credits	Days
3	Advanced Exploring Literature & Writing 2	0128	Both	1	6/6

This full year modified accelerated course continues the fundamental genre and essay study of the freshman course. The subject matter of the course will be taken from a broad selection of world, British, and American classics, and is designed to complement the sophomore social studies course at an advanced pace. There will be extensive reading and writing. Students will also be required to give presentations and lead discussions on specific writers and works of literature. Students will sharpen thinking skills through writing assignments, class discussion, SAT preparation, and completion of an advanced level research paper.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Exploring Literature & Writing 2	0127	Both	1	6/6

This accelerated course continues the fundamental genre study and essay composition study of the freshman course. The subject matter of the course will be taken from a broad selection of world, British, and American classics, and is designed to complement the sophomore social studies course. There will be extensive reading and writing. Students will also be required to give presentations and lead discussions on specific writers and works of literature. Students will sharpen thinking skills through writing assignments and class discussion. In addition, students will sharpen vocabulary, speech, and research skills through a variety of assignments.

## Junior Year

Level	Course Name	Number	Semester	Credits	Days
2	Survey of American Literature	0133	Both	1	6/6

The Survey of American Literature course is intended to equip students with the independent reading, writing, and organizational skills necessary to succeed in the workplace and post-secondary education. The course achieves this aim through the careful study of four distinct eras of American life and literature; units are built around a core novel and are oriented towards a substantive essay assignment that serves as the unit-concluding assessment. Students will compose a literary research paper during the third quarter.

Level	Course Name	Number	Semester	Credits	Days
3	Survey of American Literature	0131	Both	1	6/6

This course examines the major works of American literature from the origins of the Native American period to the present day. While the main organization is chronological, examining historical and cultural influences on the literature, the course will also reinforce the students' understanding of literary structures in various genres. Students will sharpen thinking skills through composition assignments and class discussion. Students will be required to write a research paper

Level	Course Name	Number	Semester	Credits	Days
4	Honors Survey of American Literature	0138	Both	1	6/6

This is a full year survey course of American literature, beginning with Native American and continuing into the twentieth century. Students will discover that literature and history interact – how we can learn about the politics, culture, and personality of a nation through the study of its literature. Heavy emphasis will be placed on writing and speaking. Students will write several essays each semester – both in class and out of class. They will also write a research paper. Each student will be required to give an oral presentation on a particular writer or period of American literature.

Level	Course Name	Number	Semester	Credits	Days
5	AP Language & Composition	0148	Both	1	6/6

AP Language and Composition is a hybrid American Literature/Rhetoric and Composition course that is aligned with the College Board's AP Language and Composition Exam. Students will learn how to evaluate a given text's goals, messages, and arguments in light of its era of origin, author, intended audience, implicit or explicit purpose, and subject matter, among other factors. Students will be challenged to make use of deep analysis and close reading to explain how and why argumentative rhetoric works across a wide variety of genres, in addition to constructing analytically sound and rhetorically persuasive argumentative writing of their own. Students will engage in frequent timed writing exercises during class time in addition to out-of-class writing assignments of varying purposes, lengths, and registers of formality. Students will also engage in a rigorous study of American Literature. Enrollment is limited to one section of 15 students. Students are required to take the AP Exam.

Level	Course Name	Number	Semester	Credits	Days
5	Junior Seminar	0139	Both	1	6/6

The Junior Seminar Course in the Brother David S. Baginski, FSC. Scholars Program explores some of the most enduring philosophical, ethical, and social questions of humanity. These great questions are posed by means of both ancient and modern texts, fiction as well as non-fiction. By the end of the course, students will be conversant in a spectrum of classical texts that wrestle with competing ethical frameworks. Students will be asked to write and express their thoughts utilizing various philosophical systems and will be challenged to reflect on the nature of truth, beauty and goodness from novel and varying perspectives. As students hone their critical analysis of these works, they will develop their own ability to construct rational, and sound arguments. Such skills will be assessed by the writing of formal and informal responses, as well as classroom discussion and oral presentation within the seminar.

Students will also be tasked with participation in and application of a service project in addition to a summative position paper on an ethical topic of their own choosing. The strength of the seminar experience lies in the communal discussion and debate of primary texts, and the empowerment of students to engage the contemporary problems of the world through multivalent historical, literary, and philosophical lenses.

Prerequisite: Students must be in the Scholars Program

## Senior Year

Level	Course Name	Number	Semester	Credits	Days
2	Survey of World Literature	0153	Both	1	6/6

This course is designed for the student who had difficulty with the skills developed during the junior year. This course examines a wide variety of literary works from various countries and cultures. While the main organization is chronological, examining historical and cultural influences on the literature, the course will also reinforce the students' understanding of literary structures in various genres. Students will sharpen thinking skills through writing assignments and class discussion. Students will be required to write a research paper.

Level	Course Name	Number	Semester	Credits	Days
3	World Literature: Text, Context, and Subtext	0144	Both	1	6/6

This year-long course will require students to examine (and sometimes re-examine) classical and modern literary works from multiple eras and cultures. The main organization of the course is by literary mode (epic, tragic, comic, lyric), examining historical and cultural influences on and impacts of literature. The course will also reinforce the students' understanding of formal literary structures in various genres. Students will sharpen critical thinking skills through writing assignments and class discussion and will be required to write a research paper.

Level	Course Name	Number	Semester	Credits	Days
3	World Literature: Voices of the World	0145	Both	1	6/6

Voices of the World is a Literature Course that examines authors from various regions of the world. The course will explore literary works from the Americas, Africa, Europe, and Asia. Authors of various backgrounds, socioeconomic

statuses, and minority authors will be read and studied across different mediums. Students will read short stories, novels, and poetry, and will be asked to analyze and discuss such works for their themes and motifs. Students will sharpen critical thinking skills through writing assignments and class discussion and will be required to write a research paper.

Level	Course Name	Number	Semester	Credits	Days
3	World Literature: Christian Thought & Vision	0146	Both	1	6/6

In this course, students will cover the Christian and Catholic perspectives seen in literature from both a theoretical and visual or imaginative standpoint. The first semester will focus primarily on the great Christian thinkers, theologians and apologists, while the second semester will focus on the fantastic and visionary elements of Christian writers. Students will study the works of both Christian and/or contemporary authors, such as C.S. Lewis, G.K. Chesterton, Flannery O'Connor, J.R.R. Tolkien, Dietrich Bonhoeffer, William Faulkner, Fyodor Dostoyevsky, J.K. Rowling, and many more. Students will sharpen critical thinking skills through writing assignments and class discussion and will be required to write a research paper.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Survey of World Literature	0140	Both	1	6/6

This course examines a wide variety of literary works from various countries and cultures. While the main organization is chronological, examining historical and cultural influences on the literature, the course will also reinforce the students' understanding of literary structures in various genres. Students will sharpen thinking skills through writing assignments and class discussion. Students will be required to write a research paper.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Humanities: World Literature & Theater	0170	Both	1	6/6

This course will provide students with a survey of World Literature through the close study of literature that has been translated into other artistic media, such as visual art, ballet, opera, spoken theater, and symphonies. The course readings will change yearly to coincide with current live performance offerings at local Pittsburgh theater companies and venues: Carnegie Mellon University School of Drama, PICT Classic Theatre, Pittsburgh Opera, The Metropolitan Opera Live in HD, Pittsburgh Public Theater, Pittsburgh Ballet Theater, and Pittsburgh Symphony Orchestra. Students will read and write about various genres of literature and are required to attend at least one live stage performance each month with the class. The class requires a separate application and fee, and it may be taken only with the instructor's approval. *This meets the fine arts requirement.*

Level	Course Name	Number	Semester	Credits	Days
5	Advanced Placement English	0150	Both	1	6/6

The Advanced Placement English course examines major writers of Western literature, while focusing on refining skills in the areas of critical thinking and critical writing. The student will be expected to participate in class discussions, do extensive reading, and write critically and creatively. A culminating project must be completed as part of the course requirements. Enrollment is limited to ONE section of 15 students. Students are required to take the AP Exam.

Level	Course Name	Number	Semester	Credits	Days
4	Scholarship: Senior Thesis	0149	Both	1	6/6

The capstone of The Brother David S. Baginski, FSC Scholars Program is a year-long course in research and writing. Guided by faculty mentors, this course allows the scholars to define, structure, and explore a unique topic for study. This approach to learning provides a wide opportunity to pursue a topic from an in-depth, interdisciplinary perspective which accommodates a broader inquiry than study in a single discipline. In addition to the written thesis, the scholars give an oral defense of their scholarship in February/March and a presentation at the Senior Symposia in April.

Prerequisite: Students must be in the Scholars Program.

## Electives

Level	Course Name	Number	Semester	Credits	Days
3	Journalism & Newspaper Design	0162	Both	1	3/6

This course will be a hybrid of an introduction to journalism and newspaper production in order to create Central Catholic's newspaper, The Viking. Students will identify and establish ethical and effective studies of journalism and mass communication in addition to exploring contemporary media and ethical responsibility of issues in today's press. All students interested should receive departmental permission before registering for the course. Students will maintain a digital writing portfolio comprised of all written material over the year. *This meets the fine arts requirement.*

Level	Course Name	Number	Semester	Credits	Days
3	Creative Writing	0165	One	.5	6/6

This course is designed to develop a student's creative facilities and writing ability. The course will examine authors and their writing craft, including strengths and weaknesses of specific fiction writers. Instruction will delve into the different techniques used by writers to create works of fiction. Students will create their own written work through writing workshops. Collaboration will be essential, as students will share their own written work. As a course requirement, students will submit one creative work of fiction.

Level	Course Name	Number	Semester	Credits	Days
3	Yearbook Design	0166	Both	1	3/6

Students will learn the basics of design, layout, photography, caption writing and copywriting in this course and create an original product – the Towers yearbook. Students will be responsible for meeting strict deadlines throughout the year and be required to attend extracurricular activities and sporting events after school, in the evenings, and on the weekends to photograph and gather information for the book. Former students have the opportunity to take the course again and hold an editorial position. All interested students must receive direct permission from the moderator of the Yearbook before registering for the course. *This meets the fine arts requirement.*

Level	Course Name	Number	Semester	Credits	Days
3	The Literature of Film Criticism	0169	One	.5	3/6

This course is designed to make students think seriously of the art of film as they do of literature. The course will introduce students to various genres of film such as: silent movies, screwball comedies, studio films, animation, foreign films, musicals, etc. Influential filmmakers such as Hitchcock, Ford, Kubrick, Wilder and Spielberg will be studied along with the auteur theory. Literature will be a part of the course as short stories, plays and poems will be read and compared to films. This will be a semester course and students will be accepted into the course by department approval. Assignments will be predominantly reviews. Teacher approval is needed for this course. *This meets the fine arts requirement.*

# Health & Physical Education

## Freshman Year

Level	Course Name	Number	Semester	Credits	Days
3	Physical Education	0911	Both	.5	3/6

The ultimate goal of Physical Education is to facilitate students in improving their quality of life through promotion of lifelong health enhancing physical activity. Students will learn why regular planned physical activity is important, how to develop a personal plan for being physically active, concepts necessary for successful participation in regular physical activity, and how personal responsibility/interpersonal cooperation can make physical activity a winning proposition for everyone. The course will emphasize each student; determining their current level of personal physical fitness in relation to health standards, recognizing the reasons for their current fitness level, recognizing that they have the power to change their fitness level, setting short and long term fitness goals, and working throughout the course to reach their personal fitness goals. The curriculum focuses on lifetime fitness and physical activity. Students are encouraged to work together in promoting course and individual goals. Activity units to be covered include: Fitness Assessments & Goal Setting, Strength Training I & II, Cooperative Games, Field & Court Sports.

## Sophomore Year

Level	Course Name	Number	Semester	Credits	Days
3	Health	0924	Both	.5	3/6

Health Education is designed to provide students with the skills and information needed to maintain a healthy lifestyle throughout their lives. This course is designed to provide students with an opportunity to learn about the physical, mental/emotional, and social aspects of health. An emphasis is placed on the importance of making healthy decisions that will lead to a higher quality of life. Course information is presented in a practical manner incorporating current health trends and concerns. Content areas will include but are not limited to: Personality, Stress, Mental Disorders, Relationships (bullying prevention), Nutrition, Weight Management, Body Systems, Non-infectious Disease, Human Growth and Development, A.I.D.S. and other STD'S, Alcohol, Tobacco, Drugs and Personal Safety, CPR, First Aid & Safety.

## Electives

Level	Course Name	Number	Semester	Credits	Days
3	A Personal Approach to Physical Fitness & Nutrition	0935	One	.5	3/6

The course will address the importance of proper nutrition and regular exercise enabling the student to make informed, healthy choices. This class will give students a basic knowledge base on the five pillars of physical fitness: Muscular Endurance, Muscular Strength, Cardio-respiratory Endurance, and Flexibility, body Composition. Course will also give students a basic understanding of proper nutrition, performance based nutrition, supplementation, and disease prevention through proper nutrition. Self-assessment is done throughout the year to evaluate student's basic knowledge of nutrition and personal level of fitness. Course is designed to also help students set realistic and achievable goals. Teacher/student assessment will emphasize the student's improvement on an individual basis. This



course takes into consideration a variety of contraindication (asthma, obesity, orthopedic, etc.) to exercise. Students choose a variety of activities to ensure personal success. Course will also give students a general idea of the needs and expectations necessary to pursue a career in personal Training, Athletic training, and Nutrition/Dietician.

Level	Course Name	Number	Semester	Credits	Days
3	Advanced Physical Fitness	0936	One	.5	3/6

Class will give students the opportunity to focus on the five pillars related to physical fitness. Cardiovascular fitness, muscular endurance muscular power, flexibility and body composition. Majority of the class will focus on proper strength training in order to improve individual performance and fitness. Class will also include sports specific training, functional training and various other elements necessary to improve overall fitness & strength. Assessment will mostly be done through individual goal setting, demonstrating proper lifting technique, creating personal workouts, and written assignments. Class will meet every other day for one semester only. Students must get teachers signed permission prior to entrance into class.

Level	Course Name	Number	Semester	Credits	Days
3	Essential Concepts in Athletic Training	0937	One	.5	3/6

The course will be an introduction to the basic and essential elements of Athletic Training including emergency management, recognition, evaluation and follow-up care for injury and illness. Treatment protocols, taping techniques and other fundamental concepts relating to athletic injury care are discussed as they relate to prevention and management. Students will be required to perform “observation” hours in the Athletic Training Room after school hours at scheduled athletic practices and events. Space is limited to 15 students for “hands-on” labs in the Athletic Training Room.

Prerequisites: Students must have completed Biology and Health courses & departmental approval.

# History & Social Sciences

## Freshman Year

Level	Course Name	Number	Semester	Credits	Days
2	Human Geography	0213	Both	1	6/6

This survey course, an introduction to the disciplines of history and social science, focuses on the study of the world's people, communities, and cultures. Topics include physical geography, population, cultural patterns and processes, political organization of space, agriculture and rural land use, industrialization and economic development, cities and urban land use.

Level	Course Name	Number	Semester	Credits	Days
3	Human Geography	0212	Both	1	6/6

This survey course, an introduction to the disciplines of history and social science, focuses on the study of the world's people, communities, and cultures. Topics include physical geography, population, cultural patterns and processes, political organization of space, agriculture and rural land use, industrialization and economic development, cities and urban land use.

Level	Course Name	Number	Semester	Credits	Days
5	Advanced Placement Human Geography	0211	Both	1	6/6

Human Geography is a social science discipline focused on the study of the world's people, communities, and cultures. Topics include physical geography, population, cultural patterns and processes, political organization of space, agriculture and rural land use, industrialization and economic development, cities and urban land use. The study of these topics will be supplemented with readings from world literature and contemporary nonfiction.

Students may place into this course by scoring at the 88th percentile or higher in Reading and Language on the placement test or by participating in a history and writing evaluation in May of the 8th grade year. The AP exam must be taken at the end of the year.

## Sophomore Year

Level	Course Name	Number	Semester	Credits	Days
2	World History II	0226	Both	1	6/6

This course will emphasize the major events and trends in World History since 1500. In addition to content, major concern will be placed on the students' ability to master basic concepts, vocabulary, and to express themselves both in written and spoken work. Special academic support is provided.

Level	Course Name	Number	Semester	Credits	Days
3	World History II	0225	Both	1	6/6

This course is a survey course designed to give the student a basic understanding of World History from the Exploration to Modern times. Major emphasis will be placed on the students' ability to master content material, vocabulary, and to express them in written and spoken work.

Level	Course Name	Number	Semester	Credits	Days
4	Honors World History II	0220	Both	1	6/6

The course covers the period from 1500 to the present day. The curriculum provides an intense study of the development of the modern world. An emphasis is placed on developing a thorough knowledge of the people, events, and ideas that have shaped our times. While the focus is on the development of Western civilization, study of non-Western history is included. After an introductory unit, the course identifies the major trends and events from 1500 to the latest age.

Level	Course Name	Number	Semester	Credits	Days
5	Advanced Placement European History	0258	Both	1	6/6

This study of European history since 1450 introduces students to cultural, economic, political, and social developments that played a fundamental role in shaping the world in which they live. Without this knowledge, we would lack the context for understanding the development of contemporary institutions, the role of continuity and change in present-day society and politics, and the evolution of current forms of artistic expression and intellectual discourse. In addition to providing a basic narrative of events and movements, the goals of the AP program in European History are to develop (a) an understanding of some principal themes in modern European History, (b) an ability to analyze historical evidence and historical interpretation, and (c) an ability to express historical understanding in writing. Intensive reading, summer work, and extensive writing are required. Departmental approval required. The AP exam must be taken at the end of the year.

## Junior Year

Level	Course Name	Number	Semester	Credits	Days
2	United States History	0233	Both	1	6/6

This course is an introductory American History course. The course will emphasize individualized study and an inquiry approach to the major themes of American History.

Level	Course Name	Number	Semester	Credits	Days
3	United States History	0231	Both	1	6/6

An inquiry-oriented approach, this course attempts to present conflicting interpretations of historical events and trends to find accuracy and relevance to the present. Students will be exposed to a variety of historical interpretations.

Level	Course Name	Number	Semester	Credits	Days
4	Honors United States History	0230	Both	1	6/6

This course is an extensive study in U.S. History from the discovery to the present that attempts to present conflicting interpretations of historical events and trends to find accuracy and relevance for the present.

Level	Course Name	Number	Semester	Credits	Days
5	Advanced Placement United States History	0250	Both	1	6/6

This course is an intensive study in U.S. History from the discovery to the present. Students are expected to analyze in depth and to examine previously held conceptions of American History. Reading load is extensive, with summer reading required. Students must take the AP Exam at the completion of this course.

## Senior Electives

Level	Course Name	Number	Semester	Credits	Days
3	History of Pittsburgh and Western Pennsylvania	0262	One	.5	6/6

This course is intended to develop in the student a fuller awareness and appreciation of the development of Western Pennsylvania, and particularly the role which the City of Pittsburgh has played. The course will trace the history of the city from its beginnings as a frontier stronghold to its emergence as the Renaissance City of today. Class activities will consist not only of readings and discussions, but also the use of local historical resources and visits to important sites in the city's history and development. This course will be a web enhanced course. Course is limited to 24 students per semester. *This meets the fine arts requirement.*

Level	Course Name	Number	Semester	Credits	Days
3	History of Modern America	0265	One	.5	6/6

This course explores the era from the conclusion of World War II to the present with emphasis upon significant events and notable personalities, both foreign and domestic, as they relate to the American experience.

Level	Course Name	Number	Semester	Credits	Days
3	The Study of World War II	0271	One	.5	6/6

A semester-long college-style elective course that examines the lead up to, major events during, and the aftermath of World War II using *The Story of World War II* by Dr. Donald Miller as its textbook. At the beginning of the semester students will explore the immediate aftermath of and the issues left unresolved from WW I as well as new events that occurred during the Inter-War years that set the stage for World War II. Students will then study World War II with an in-depth look at each Theatre and its major campaigns, respective military leaders, and important events. The course will conclude with an epilogue that previews the Marshall Plan, the Occupation and Reconstruction of Japan, and the beginning of the Cold War.

Level	Course Name	Number	Semester	Credits	Days
3	Psychology	0263	One	.5	6/6

This introductory course is designed to provide the student with an overview of the field of psychology. During the course of the semester students will study research methods, motivation, emotion, personality theories, psychological disorders, health, developmental and applied psychology and therapy methods.

Level	Course Name	Number	Semester	Credits	Days
3	Sociology	0266	One	.5	6/6

This course is a basic introduction into the field of Sociology. Students will discover the basic fundamentals of the behaviors of groups/societies. The topics of sociological careers, the basic structure of society, norms, values, propaganda, urban myths, fads, fashions will be studied. The legendary founders and their contributions to sociology will be examined. The process of societal change, social issues of sports and urban ecology will be investigated. The students will use a text and outside readings with assessment being tests, quizzes and projects.

Level	Course Name	Number	Semester	Credits	Days
3	Introduction to Leadership	0272	One	.5	3/6

Introduction to Leadership is designed to raise students' awareness of the importance of leadership and their own potential. It is a semester-long elective course that will meet every other day for double periods. Using class discussion, lecture, practical exercises, guest speakers and a field trip, Intro to Leadership will create a greater understanding among the students on what leadership means to them. Individual classes during the course will explore definitions, morals & ethics, leadership & faith, and historical examples. The outcome of the course will be students with an expanded view of leadership in the world around them and a better understanding of how they can develop, practice and apply their own leadership skills.

Level	Course Name	Number	Semester	Credits	Days
5	Advanced Placement American Government	0248	Both	1	6/6

This course focuses on United States Government and Politics, one of two A.P. curricula offered in Political Science. Major topics include: Constitutional foundations of the U.S. Government; Political beliefs and behaviors; Political parties, Interest groups and Mass media; Institutions of National Government: the Congress, the Presidency, the Bureaucracy, and Federal Courts; Public Policy; Civil Rights and Liberties. A major purpose of this course is to prepare students for the Advanced Placement exam in May. Students who select this course must take the Advanced Placement exam.

Prerequisite: Department approval through teacher's recommendation.

Level	Course Name	Number	Semester	Credits	Days
5	Advanced Placement Art History	0260	Both	1	6/6

This course will engage students at the same level as an introductory college art history survey. Students will be

introduced to major artistic developments in the visual arts from Prehistory through Contemporary Art. Paintings, sculptures, architecture and other media will be discussed in a variety of ways including their formal and stylistic characteristics, the cultural and social conditions in which they were produced, and the meanings that have been and can be interpreted from them. Working both chronologically and thematically, we will give special emphasis to: the articulation of world religions (both past and present), the changing function of the visual arts in diverse cultures, the shifting role of the artist in visual production and the tools and techniques involved in arts production. We will also explore global arts including African, Asian, and Islamic traditions. Because this is an Advanced Placement Course, there will be emphasis on preparation for the AP exam and a set list of 250 key works. The course does not assume prior training or seek primarily to identify students who will major in art or art history in college. Students who have done well in other courses in the humanities, such as history and literature, are especially encouraged to enroll as are STEM-oriented students who want to work in a multi- or interdisciplinary manner. *This meets the fine arts requirement.*

# Mathematics

## Algebra I

Level	Course Name	Number	Semester	Credits	Days
2	Algebra I	0315	Both	1	6/6

The students placed in this level are those students who have had some pre-algebra or algebra work and are ready to begin a full algebra course. Grammar school grades and standardized test scores will be used in the placement process.

Level	Course Name	Number	Semester	Credits	Days
3	Advanced Algebra I	0312	Both	1	6/6

This course is for students who have had a background in algebra in grammar school but have not demonstrated sufficient mastery to move into the honors level. Elementary school grades and standardized test scores will be used in the placement process.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Algebra I	0310	Both	1	6/6

This high-powered math course is designed for students who have been exposed to Algebra I in grammar school but have not yet mastered the subject sufficiently to move on to Honors Algebra II. This course covers all of Algebra 1 and several topics from an Algebra 2 course as well.

## Algebra II

Level	Course Name	Number	Semester	Credits	Days
2	Algebra II	0323	Both	1	6/6

This is the intermediate level of 322. It emphasizes the development of algebraic skills and logical thinking through the use of symbolic, numeric and graphical approaches. Students will develop an understanding of mathematical language, notation, and symbols. In particular, students will explore linear, quadratic, and other polynomial functions. They will learn the rudiments of probability and the usefulness of matrices, too. The modeling of the real world problems and the appropriate use of technology as a mathematical tool are stressed throughout the course, requiring the extensive use of a graphics calculator.

Level	Course Name	Number	Semester	Credits	Days
3	Algebra II	0322	Both	1	6/6

This course continues the work begun in Algebra (312 and 313) on the freshman level. This course is designed for the average student pursuing four years of high school mathematics. It emphasizes the development of algebraic

skills and logical thinking through the use of symbolic, numeric and graphical approaches. Students will develop an understanding of mathematical language, notation, and symbols. In particular, students will explore linear, quadratic, and other polynomial functions. They will learn the rudiments of probability and the usefulness of matrices, too. The modeling of the real world problems and the appropriate use of technology as a mathematical tool are stressed throughout the course, requiring the extensive use of a graphics calculator.

Level	Course Name	Number	Semester	Credits	Days
3	Advanced Algebra II	0331	Both	1	6/6

This is a rigorous course in Algebra II. Students will encounter more advanced problems for the Algebra I topics that are reviewed. They will complete their study of algebra with topics including quadratic relations and systems, matrices, sequences and series, logarithms, and the complex number system. In addition, students will focus on mathematical modeling problems and extensive use of the graphing calculator.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Algebra II	0318	Both	1	6/6

This course is for students who have completed a strong Algebra I course in grammar school, consistently scoring in an “A” or “B+” range. In order to be placed in this fast-paced math curriculum, the student must have demonstrated superior mathematical ability on the Honors Algebra placement test in May of the 8th grade year. The Math Department creates and evaluates this placement exam.

## Geometry

Level	Course Name	Number	Semester	Credits	Days
1	Geometry	0334	Both	1	6/6

This course is designed for students of average to below average mathematical ability.

Level	Course Name	Number	Semester	Credits	Days
2	Geometry	0333	Both	1	6/6

This is the intermediate level of course 332. This course offers the basics of Euclidean Geometry. Beginning with the undefined terms point, line and plane, students will study plane figures: triangles, quadrilaterals, and other polygons. The course will cover both deductive and inductive logic, 2-column and paragraph proofs, congruence and similarity. Particular emphasis is given to triangles, including the 30-60-90 and 45-45-90 right triangles, and circles. During the study of right triangles, the course will introduce the sine, cosine and tangent functions as well. Near the end of the course, students will explore the areas and perimeters of plane figures, the surface areas and volumes of solids, and Geometric probability. Students may explore constructions and coordinate Geometry as well.



Level	Course Name	Number	Semester	Credits	Days
3	Geometry	0332	Both	1	6/6

This course offers the basics of Euclidean Geometry. Beginning with the undefined terms point, line and plane, students will study plane figures: triangles, quadrilaterals, and other polygons. The course will cover both deductive and inductive logic, 2-column and paragraph proofs, congruence and similarity. Particular emphasis is given to triangles, including the 30-60-90 and 45-45-90 right triangles, and circles. During the study of right triangles, the course will introduce the sine, cosine and tangent functions as well. Near the end of the course, students will explore the areas and perimeters of plane figures, the surface areas and volumes of solids, and Geometric probability. Time permitted, students will explore constructions and coordinate Geometry as well.

Level	Course Name	Number	Semester	Credits	Days
3	Advanced Geometry	0321	Both	1	6/6

This course offers the basics of Euclidean Geometry. Beginning with the undefined terms point, line and plane, students will study plane figures: triangles, quadrilaterals, and other polygons. The course will cover both deductive and inductive logic, 2-column and paragraph proofs, congruence and similarity. Particular emphasis is given to triangles, including the 30-60-90 and 45-45-90 right triangles, and circles. During the study of right triangles, the course will introduce the sine, cosine and tangent functions as well. Near the end of the course, students will explore the areas and perimeters of plane figures, the surface areas and volumes of solids, and Geometric probability. Should time permit, students will explore constructions and coordinate Geometry as well.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Geometry	0328	Both	1	6/6

This full year course offers a rigorous modern geometry course emphasizing mathematical structure, logic and deductive proof. Methods and proofs in coordinate geometry as well as transformations and constructions will be covered. Both plane and solid geometry are considered throughout. This course will emphasize the continual use of algebraic skills.

## *Trigonometry/Precalculus*

Level	Course Name	Number	Semester	Credits	Days
2	Trigonometry	0347	One	.5	6/6

This course explores plane Trigonometry as based on the wrapping function. It emphasizes the trigonometric functions, their inverses and their solutions of triangles. The right triangle approach to the trigonometric functions will also be included.

Level	Course Name	Number	Semester	Credits	Days
3	Trigonometry	0345	One	.5	6/6

This course explores plane Trigonometry as based on the wrapping function and the right triangle. It emphasizes

the trigonometric functions, their inverses and their graphs, as well as applications involving identities, equations, solutions of triangles, and complex numbers. Required is at least a ‘C’ average in Algebra II. This course is the first semester of a full year of senior mathematics to be followed by the “Pre-Calculus” course in the second semester. This course is for students who are not quite ready to take the more rigorous Trig/Math Analysis course.

Level	Course Name	Number	Semester	Credits	Days
3	Precalculus	0341	One	.5	6/6

This course is the second semester of a full year of senior Mathematics for students who are not quite ready to take the full year honors “Trig/Pre-Calculus” course. It includes as many topics as feasible from the “Trig/ Pre-Calculus “ course.

Prerequisite: Math 345

Level	Course Name	Number	Semester	Credits	Days
4	Honors Trigonometry/Precalculus	0330	Both	1	6/6

The first semester is an accelerated, full course in trigonometry, including circular functions, vectors, polar coordinates, analytic trigonometry, and the complex plane. The second semester prepares students for AP Calculus. Topics include polynomial functions, rational functions, exponential functions, logarithmic functions, matrices, combinatorics, and probability. Students will also receive an introduction to limits and derivatives.

Prerequisites: 88% in Honors Algebra 2 and Honors Geometry.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Trigonometry/Precalculus	0342	Both	1	6/6

The first semester is an accelerated, full course in trigonometry, including circular functions, vectors and polar coordinates. The second half of this course prepares students for Calculus. It includes a study of these functions: polynomial, rational, algebraic, exponential and logarithmic. The course will also cover complex numbers and conic sections. Students will also receive a brief and informal introduction to limits and derivatives.

## Calculus

Level	Course Name	Number	Semester	Credits	Days
4	Honors Calculus	0340	Both	1	6/6

The Honors Calculus course is designed as an introductory class for the concepts of Limits and Continuity of Functions, derivations of Derivatives, curve sketching, application of derivatives, Differentials, Implicit Differentiation, related rates of change and integration techniques. Assignments are approximately daily. Enrollment is at the discretion of the Mathematics Department.

Level	Course Name	Number	Semester	Credits	Days
5	Advanced Placement Calculus AB	0350	Both	1	6/6

AP Calculus AB is an introductory college-level calculus course. Students cultivate their understanding of differential and integral calculus through engaging with real-world problems represented graphically, numerically, analytically, and verbally and using definitions and theorems to build arguments and justify conclusions as they explore concepts like change, limits, and the analysis of functions.

Level	Course Name	Number	Semester	Credits	Days
AP	Advanced Placement Calculus BC	0351	Both	1	6/6

AP Calculus BC is designed to be the equivalent to a second semester college calculus courses. AP Calculus BC applies the content and skills learned in AP Calculus AB to parametrically defined curves, polar curves, and vector-valued functions; develops additional integration techniques and applications; and introduces the topics of sequences and series.

## *Probability and Statistics*

Level	Course Name	Number	Semester	Credits	Days
3	Probability and Statistics	0375	One	.5	6/6

This course provides the basics of Probability and Statistics suitable for the college preparatory student. Topics discussed include the fundamental ideas of probability, the handling of numerical data, binomial and random variables, a brief introduction to sampling, a thorough examination of statistical methods, including confidence intervals, significance levels, statistical hypotheses, tests, estimation, type I and type II errors. Probability and Statistics is not a substitute for the regular fourth year of mathematics. Rather, it is enrichment for those students with high ability in mathematics who wish to take more than one mathematics course.

## *Statistics*

Level	Course Name	Number	Semester	Credits	Days
5	Statistics	0360	Both	1	6/6

AP Statistics is a college-level statistics course, designed to introduce students to core probability and statistics concepts and tools for collecting, analyzing, making inferences, and for drawing conclusions from data collected. A college level textbook will be used and a graphing calculator with statistics capabilities will be required (TI-84s are available in the classroom). Assessment will include homework, exams and a Capstone Project. Students who register for this course must take the AP Statistics exam at the end of the year.

Prerequisites: A minimum final grade of 85% in Honors Algebra II; strong verbal skills (reading and writing) are highly recommended. Students who do not meet these requirements must receive approval from the AP Statistics teacher before enrolling in the course

# Performing Arts

## Vocal Music

Level	Course Name	Number	Semester	Credits	Days
3	Vocal Music I	0815	Both	1	6/6

In Vocal Music I, students study foundational techniques of vocal performance, as related to solo and ensemble singing in various styles of music, including but not limited to sacred, folk, popular, musical theatre, and a capella. Basic ear-training and music theory concepts are introduced through choral repertoire and classroom instruction. Students are evaluated on rehearsal participation, written assignments, individual singing assessments, and concert performance. Students will participate in two major concerts each year, in addition to other events for the school and community. *This meets the fine arts requirement.*

Level	Course Name	Number	Semester	Credits	Days
3	Vocal Music II (Concert Choir)	0882	Both	1	6/6

Vocal Music II is a continuation of the concepts of vocal performance, ear-training, and music theory of Vocal Music I, but with increased emphasis on the mastery of core performance skills and music literacy. Students are evaluated on rehearsal participation, written assignments, individual singing assessments, and concert performance. Students will participate in two major concerts each year, in addition to other events for the school and community. *This meets the fine arts requirement.*

Prerequisite: Vocal Music I or Approval by the Choral Director.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Vocal Music (Chamber Singers)	0884	Both	1	6/6

Chamber Singers consists of an advanced group of vocalists, selected by audition to perform college and professional repertoire at the highest level of artistry. As an honors class, these students prepare original works by master composers for both male and mixed choirs (in conjunction with Oakland Catholic students), study the art of solo singing, and achieve musical literacy. Students are evaluated on rehearsal participation, written assignments, individual singing assessments, and concert performance. As the premier choral ensemble, the Chamber Singers represent the school and vocal music department in the greater Pittsburgh region. Participation in all school and community performances is required. *This meets the fine arts requirement.*

Prerequisite: Approval by the Choral Director, based on audition.

## Instrumental Music

Level	Course Name	Number	Semester	Credits	Days
3/4	Instrumental Music (Band)	0881	Both	1	6/6

Participation in the Marching Band and the Concert Band is based on demonstrated musical competence and knowledge. Instrumental techniques and basic musicianship are introduced, reinforced and refined in performance. The student will participate in all marching and concert band functions, including football game appearances, parades, concerts, assemblies, festivals, etc. Evaluation is based on rehearsal participation, musical performance, and written assignments. (May be taken for Honors Credit by Director approval) *This meets the fine arts requirement.*

Prerequisite: Approval by the Instrumental Director

Level	Course Name	Number	Semester	Credits	Days
4	Honors Instrumental Music (Honors Band)	0887	Both	1	6/6

Each semester, in addition to the regular concert band course requirements, students will be required to prepare a solo on their primary instrument. They may also participate in a chamber ensemble (trio, quartet, etc.). Preparation will be coached and evaluated by the director. *This meets the fine arts requirement.*

Prerequisites: Successfully pass audition with audition music determined by director.

Level	Course Name	Number	Semester	Credits	Days
3/4	Jazz Band	0888	Both	1	6/6

The Blue Knights Jazz Band gives students the opportunity to perform various genres of jazz in a big-band setting. The historical context of these genres will be explored in the course, with understanding of the styles demonstrated through musical performance. The concepts of jazz improvisation will also be introduced. Students will be evaluated based on rehearsal participation, musical performance and written assignments. (May be taken for Honors Credit by Director approval) *This meets the fine arts requirement.*

Prerequisites: Students must play a jazz instrument (saxophone, trumpet, trombone, guitar, bass guitar, piano, or drum set). Roster spots for some instruments have limited availability (guitar, bass guitar, piano, drum set); positions with limited availability will be determined by audition.

Level	Course Name	Number	Semester	Credits	Days
3	String Ensemble	0893	Both	1	6/6

Participation in the String Ensemble is based on demonstrated musical competence and knowledge. Instrumental techniques and basic musicianship are introduced, reinforced and refined in performance. The student will participate in all scheduled performances. Evaluation is based on rehearsal participation, musical performance, and written assignments. *This meets the fine arts requirement.*

Prerequisites: Approval by the Instrumental Director. The student must play a string instrument (violin, viola, cello, or bass).

## Fundamentals of Musicianship

Level	Course Name	Number	Semester	Credits	Days
3	Fundamentals of Musicianship I	0891	One	.5	6/6

Fundamentals of Musicianship I focuses on the basic concepts of music notation, theory, ear-training, and composition. Students will learn how to read, notate, and analyze the melodic, harmonic, and rhythmic constructs of music to aid their own activities in musical performance and/or composition. The course will consider the music theory behind a variety of historical and current musical styles. Although this is not a performance-based course, students will also learn how to use their singing voice, instruments, and technology to apply concepts. Coursework includes written assignments, online exercises, and a final project. *This meets the fine arts requirement.*

Level	Course Name	Number	Semester	Credits	Days
3	Fundamentals of Musicianship II	0892	One	.5	6/6

Fundamentals of Musicianship II is a continuation of the concepts of Fundamentals of Musicianship I with increased focus on advanced theoretical concepts, including longer form composition, analysis, and dictation. Student will also learn how to utilize various music technologies, including MIDI keyboards, MuseScore, and Garage Band for notating, recording, and sequencing music. Coursework includes written assignments, software-generated music notations, online exercises, and a final project. *This meets the fine arts requirement.*

Prerequisites: Fundamentals of Musicianship I (or with approval by the teacher)

## Audio Engineering

Level	Course Name	Number	Semester	Credits	Days
3	Audio Engineering I - Live Sound Reinforcement	0984	One	.5	6/6

Students will learn techniques required for live sound reinforcement using PA systems. Topics will include properties of acoustics, audio equipment (microphones, mixing consoles, cables, speakers, amplifiers, etc), and understanding how to use equipment in a real situation. Students will have the opportunity for hands-on experience in McGonigle Theater. This meets the fine arts requirement.

Prerequisites: Students must have approval from Mr. Wilson to take this course.

Level	Course Name	Number	Semester	Credits	Days
3	Audio Engineering II - Recording & Production	0985	One	.5	6/6

Students will learn techniques for audio recording and production. Topics will include a review of audio equipment, digital audio encoding, and digital audio workstation processing, mixing, and mastering techniques. Students will have the opportunity for hands-on experience recording student ensembles and musicians. This meets the fine arts requirement.

Prerequisites: Students must have approval from Mr. Wilson to take this course.

# Religion

## Freshman Year

Level	Course Name	Number	Semester	Credits	Days
3	Religion I	0011	Both	1	6/6

This first year in Religion is designed as an introduction to faith and religion in general, and to the Roman Catholic Faith in particular. Beginning with an introduction to the Old Testament, and continuing through the Gospels and Jesus' life, words, and works, the student will be presented with an overview of Catholicism and its origins. The essential contents of The Catechism of the Catholic Church are examined in light of the Creed, the Sacraments, Liturgy, Morality, and Prayer. In addition to the subject matter, an emphasis will be placed upon the use of the development of writing skills so necessary to any academic endeavor. Outlining, note-taking, and essay writing will be employed throughout the year.

## Sophomore Year

Level	Course Name	Number	Semester	Credits	Days
3	Religion II	0022	Both	1	6/6

This first semester course is designed to lead students toward a deeper understanding of our need for redemption and how Jesus is the fulfillment of God's promise of this redemption. It also explores how, through his Passion, Death, Resurrection, and Ascension, and how Jesus makes this redemption possible. The course addresses how we continually experience this Paschal Mystery in our lives and in the liturgy of the Church. This second semester course will provide students with a deeper understanding of the Church as the means of encountering the living Jesus. It will explore the origin of the human and the Divine elements, as well as the ongoing mission of the Church. Students will explore the Church's ongoing efforts to gather all to the People of God through ecumenical movement and through interreligious dialogue. Student will also be able to reflect on their role in the Church and Christ's invitation to actively participate and contribute to the life of the Church.

## Junior Year

Level	Course Name	Number	Semester	Credits	Days
3	Religion III	0033	Both	1	6/6

The first semester of this course will focus on the Seven Sacraments, especially Holy Eucharist and the Real presence of Christ at the Holy Sacrifice of the Mass. Each Sacrament will be explored thoroughly, from its institution to its practical participation and application in the lives of Catholics today. The course will also explore the history, the scriptural foundation, and the current practices of the Sacraments. The second semester will lead the students to a deeper understanding of God's law revealed to us through Sacred Scripture and Tradition. It will also explore how the teachings and the life of Christ is the fulfillment of the Law summarized in the Ten Commandments and the sins against them. This course also provides the guidelines for moral decision-making in today's world, based upon the teachings of Jesus and the Catholic Church, especially regarding the gift and the sacredness of human life. Reflection on the gifts and the guides God provides for us to live a holy life.

## Senior Year

Level	Course Name	Number	Semester	Credits	Days
3	A Man of Faith	0058	Both	1	6/6

Senior year is a critical time in a young man's life: he assesses the future and makes some tentative decisions about the life he wants to build. He investigates the world around him as he looks for meaning and purpose to his life. This level three survey course (which fulfills the Religion requirement) is designed to help students shape an adult Christian lifestyle by providing insights from the Catholic Christian tradition concerning the various developmental tasks of young adult life and understanding a maturing life of faith. This course will attempt to cover a variety of topics: Contemporary Catholic insights into Faith and Culture, Catholic Social Teaching, Comparative Religions, Christian Vocation.

Level	Course Name	Number	Semester	Credits	Days
3	Peer Ministry	0061	Both	1	6/6

As a school "rooted in the Gospel values of integrity, respect, service, justice, and peace" Central Catholic is committed to forming leaders who reflect these values. As such, Campus Ministry, in conjunction with the Religion Department, is offering a Peer Ministry course for Juniors and Seniors. This class will emphasize the aforementioned values by focusing on student formation in ministry, service, theological reflection, and ecclesiology – within the context of Central Catholic and in preparation to be strong Christian leaders in the community upon graduation.

Prerequisites: Students are selected through an application process during the spring of their junior and/or sophomore year. The application includes reflection questions, parental approval, teacher recommendations, and a personal interview with the Campus Ministry Team.

Level	Course Name	Number	Semester	Credits	Days
4	Brotherhood as a School of Virtue	0060	Both	1	6/6

The course will primarily be a guided discussion with minimal lectures providing a background on the authors and some key points to look for during reading assignments. Students will be expected to complete reading assignments and bring into the classroom a readiness to engage in discussion with the teacher and other students. This course will be a study on the virtues, and in particular the four cardinal virtues, from their roots in the philosophy of Aristotle and Plato up through until modern times where we will exam the writings of German Catholic philosopher Josef Pieper. The course will culminate by focusing on how the virtues are cultivated through establishing deep and meaningful friendships.



# Science

## Biology

Level	Course Name	Number	Semester	Credits	Days
2	Biology	0422	Both	1	6/6

This course is an introduction to the concepts of biology through lectures, discussions, and some outside readings. Projects, lab reports and tests are required. The course will cover the following topics: cell biology, cell reproduction, and cell chemistry, as well as genetics, evolution, human physiology and morphology, and ecology, with emphasis here on how the members of the plant and animal kingdoms are interrelated to form biological communities.

Level	Course Name	Number	Semester	Credits	Days
3	Biology	0421	Both	1	3/6

This class is a year-long introduction to the concepts of biology through lectures, discussions, and some outside readings. The course will cover the following topics: cell biology, cell reproduction, cell chemistry, biochemistry, energetics of the cell, as well as genetics, evolution, human physiology and morphology, and ecology, with emphasis here on how the members of the plant and animal kingdoms are interrelated to form biological communities. Completion of homework assignments, experiment lab reports, team projects and exams are required.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Biology	0410	Both	1	3/6

This course is meant to provide a survey of the realm of life science within the context of a rigorous, experimentally based curriculum. Covered course topics include biochemistry, cell biology, ecology, energetics, molecular biology, genetics, taxonomy and an introduction to cutting edge aspects of biotechnology and regenerative medicine. Significant independent study is expected to enhance student comprehension and appreciation of the frequent class activities. Completion of frequent homework assignments, lab reports, quizzes, team projects, reading assignments and a major project are required for success. A score of 88th percentile or above in both Reading & Mathematics on the placement test or additional testing in May of the 8th grade year is required.

Level	Course Name	Number	Semester	Credits	Days
5	Advanced Placement Biology	0450	Both	1	3/6

This course is meant to provide the equivalent education of a full year college introductory biology curriculum and is only available for juniors and seniors. In general, all topics spanning the realm of modern biology will be addressed, though a number of them will be mastered independently by the student. Students will be expected to thoroughly prepare for the mandatory national A.P. Biology exam, which may earn them college credit through course exemption. The new course curricular framework emphasizes: 1. Thematic learning, greatly reducing the memorization of content 2. Inquiry science process 3. Mastery of life science quantitative skills. This new framework is meant to reinforce four big ideas permeating life science: 1. Evolution 2. Cellular processes that maintain homeostasis 3. Information flow within living systems 4. Complex interactions within and between

organisms.

Given the limited instructional time allotted to achieve these lofty goals, students will be encouraged to master the majority of the basic course content on their own. The majority of class time will be devoted to numerous lab investigations, guest speakers, videos, field trips, team projects, and review of take-home tests. Handouts and the textbook will be the major sources of information for this independent study learning challenge. Frequent readings, short papers, lab reports, take home tests, exams, and a major experimental project are expected of the student and comprise the majority of the grade.

## Chemistry

Level	Course Name	Number	Semester	Credits	Days
2	Chemistry	0432	Both	1	6/6

The aim of this program is to enable students to develop an understanding of their physical world. Reference to current chemically related issues and problems involving individuals, communities, our nation and its worldwide neighbors suggest to the student the need to be informed about societal and technological matters as a citizen and voter. By combining student experiments and demonstrations with problem solving, the students can learn the chemical principles which explain how the behavior of matter depends on its structures. The students are instructed in practices of personal chemical safety which they can carry outside the school to their home and/or workplace. This is a descriptive chemistry course which includes the following topics: S.I. system, formulas, nomenclature, chemical reactions, atomic theory, mole concepts, the Periodic Table, chemical bonding, gases and kinetic theory, energy changes, solution chemistry, and practical applications of chemistry to the everyday world. The focus of the course will be more qualitative than quantitative with the development of safe laboratory skills when appropriate

Prerequisites: Completion of biology. Placement by department.

Level	Course Name	Number	Semester	Credits	Days
3	Chemistry	0431	Both	1	3/6

This is solid content course using mathematical and laboratory skills to approach topics from the text. The correlation of experimental data to reveal its patterns, and the development of models and theories are emphases of the course. Mathematical relationships are stressed. Topics covered include observational techniques, S.I. system, formulas, nomenclature, chemical reactions, atomic theory, the Periodic Table, chemical bonding, mole concepts, gases and kinetic theory, condensed phases, energy changes, rates of reactions. Students are required to perform experiments and submit lab reports. Class work and home study are from the text. Chapter tests and quizzes are administered on class work. Demonstrations done by the teacher as well as the students themselves are used to show descriptive chemistry. The use of multimedia on computer and video helps in the understanding of scientific models. Problem solving is emphasized. Everyday applications of chemistry make the theory practical. Examining our natural resources lets the students see what must be kept for future generations. The teacher instructs students in practices of personal chemical safety which they can carry outside the school to their home and/or workplace.

Prerequisites: Completion of biology: 85% in math, and teacher recommendation based on previous science and math grades.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Chemistry	0420	Both	1	3/6

This course is a college prep-level course that is designed to be an introduction to chemistry at an advanced level of pace. Students are going to study concepts like atomic theory, the periodic table, stoichiometry, electron configuration, molecular bonding, gas laws, and chemical reactions. Students will be engaging in hands-on laboratory experiments to reinforce the concepts that are covered in the classroom with an emphasis on learning the appropriate ways to collect and analyze data. Students will be asked to write lab reports throughout the year to learn about scientific writing and reporting data. Additional projects and presentations will be required throughout the year with the goal of connecting the course content to everyday life and refining scientific presentation skills.

Prerequisites: 85% or above in Honors Biology and Honors Level Math plus science teacher recommendation.

Level	Course Name	Number	Semester	Credits	Days
3	Chemistry II	0434	Both	1	3/6

This course the builds upon the Chemistry 431 course and covers topics not covered in the first year of Chemistry 431. The course uses mathematical and laboratory skills to approach topics from the text. The correlation of experimental data to reveal its patterns, and the development of models and theories are emphases of the course. Mathematical relationships are stressed. The course begins with mole concepts and continues with the following topics: stoichiometry (review), states of matter, behavior of gases and kinetic theory, water and aqueous systems, solutions, rates of reaction and kinetics, equilibrium, acid, bases, and salts, oxidation and reduction reactions, electrochemistry, organic chemistry and nuclear chemistry. Students are required to perform experiments and submit lab reports. Class work and home study are from the text. Chapter tests and quizzes are administered on class work. Demonstrations done by the teacher as well as the students themselves are used to show descriptive chemistry. The use of multimedia on computer and video helps in the understanding of scientific models. Problem solving is emphasized. Everyday applications of chemistry make the theory practical. Examining our natural resources lets the students see what must be kept for future generations. The teacher instructs students in practices of personal chemical safety which they can carry outside the school to their home and/or workplace.

Prerequisites: Successful completion (grade of 80% and above) in a first-year chemistry course, at least 83% or better in math.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Organic Chemistry	0456	Both	1	3/6

Honors Organic Chemistry is an advanced level course for Seniors that is designed to track with the first two semesters of college-level organic chemistry. Students will be expected to work rigorously both in class and independently in order acquire proficiency in this difficult subject. Students who successfully complete this course will be well-positioned to excel in any college-level organic chemistry course. Topics in this course include but are not limited to chemical structure and bonding, organic functional groups, nomenclature, chemical transformations, reaction mechanisms, synthetic design, and NMR spectroscopy. Students will take regular exams and quizzes in addition to cumulative midterm and final exams. Limited to 20 students.

Prerequisites: 93% or above in Honors Chemistry and teacher recommendation.

Level	Course Name	Number	Semester	Credits	Days
5	Advanced Placement Chemistry	0458	Both	1	3/6

The Advanced Placement Chemistry course is a rigorous and fast-paced course that is designed to be comparable to the first year of college level chemistry. The course syllabus is approved by the College Board who administers the AP Chemistry exam at the end of the year. All students who are enrolled in AP Chemistry are required to take the exam. Topics covered include atomic theory, stoichiometry, thermochemistry, electron configurations, chemical bonding, gases, liquids and solids, reaction types, kinetics, equilibrium, and thermodynamics. Students will be expected to complete significant summer review assignments in preparation for this course. In class tests are administered at the completion of each unit, and students will be required to perform 16 laboratory experiments throughout the year to reinforce the concept covered in class. Lab reports and scientific writing will be a required component for each experiment. Prerequisites: 90% in Honors Chemistry (0420); 90% in Math; 90% in Physics. (Students may be taking the year-long Physics course concurrently). Class size will be limited.

Prerequisite: Teacher recommendation required.

## Physics

Level	Course Name	Number	Semester	Credits	Days
2	Physics	0442	Both	1	6/6

The course is a descriptive study of the topics related to classical and modern physics. Although the required mathematics serves as the structural foundation for most topics which are presented, the course focuses more on the conceptual and relational aspects of the science. The topics covered are the Method of Science, Mechanics, Light, Sound, Energy, Electrostatics, and DC Circuits. Completion of homework assignments, hands-on exploratory lab work, lab reports, quizzes, tests, and class participation are required.

Prerequisites: Algebra I and Geometry (concurrently enrolled)

Level	Course Name	Number	Semester	Credits	Days
3	Physics	0441	Both	1	3/6

This course is a descriptive, conceptual, mathematical study of the topics related to classical and modern physics. Although the course focuses more on the relational and conceptual aspects of the science, the required mathematics serves as the structural foundation for most topics which are presented. The topics are presented in a logical sequence so that conceptual and mathematical relationships can be explored and established. The topics covered are: Mechanics, Wave Motion, Light, Sound, Energy, Electrostatics, and DC Circuits. Course requirements are: frequent written assignments and quizzes, as well as chapter tests.

Prerequisites: An 80% in Chemistry 431, Algebra I and Geometry 332 or 333 (concurrently enrolled).

Level	Course Name	Number	Semester	Credits	Days
4	Honors Physics	0440	Both	1	3/6

The Honors Physics course is designed to be comparable to a first year algebra based college course and closely follows portions of the course syllabi as designed by the College Entrance Examination Board for AP Physics 1 and 2. Accordingly, topics include Mechanics, Conservation Laws, Electrostatics, DC Circuits, Sound & Mechanical Waves, and Optics. Course requirements include frequent homework assignments, hands-on exploratory lab experiments with written analysis, and regular tests.

Prerequisites: Minimum course grade of 85% in Algebra I, Geometry and Honors Chemistry. Concurrently enrolled in Algebra II or Trigonometry (Honors Level strongly recommended). Chemistry teacher recommendation also required

Level	Course Name	Number	Semester	Credits	Days
5	Advanced Placement Physics	0459	Both	1	3/6

The Advanced Placement Physics course is designed to be comparable to a first year calculus based college course and closely follows the course syllabus as designed by the College Entrance Examination Board (Physics C) who administers the examination. The course is devoted to a rigorous study of Mechanics, as prescribed by the A.P. College Board. The Calculus approach to problem solutions is used throughout the course where feasible, with both differential and integral calculus required throughout the year. The course focuses heavily on collaborative, inquiry-based lab work and solving challenging physics problems. Students must take the Mechanics portion of the Physics “C” Mechanics A.P. Examination at the end of the year.

Prerequisites: Minimum grade of 94% in 440/441 Physics for first three quarters. Students must be concurrently enrolled in Calculus and receive the recommendation of 440/441 Physics teacher(s).

## Electives

Level	Course Name	Number	Semester	Credits	Days
3	Environmental Science	0462	Both	1	6/6

This course examines problems created by the interaction of humans with the natural world. It also seeks to provide possible remedies for the imbalances caused by human/nature interaction. In this quest, students will be exposed to three major themes: (1) the natural processes, both physical and biological, that operate in the world; (2) the role that technology plays in society and its ability to alter natural processes, as well as provide potential solutions to problems caused by human impact; (3) the complex social processes that characterize human populations and influence environmental impact. Much of the course will engage students in environmental challenges to find potential solutions to issues facing the world today. This team-oriented focus will also be applied to the majority of assessments, including: quizzes, short papers, lab reports, oral presentations, and individual or team projects. This course relies heavily upon a variety of learning experiences, such as: lectures, guest visits, field trips, frequent lab investigations, discussions, and team projects. Students will utilize numerous local resources throughout the course in their project-based learning experiences.

Prerequisites: 85% in Chemistry; 85% in Biology.

Level	Course Name	Number	Semester	Credits	Days
3	Bioengineering	0482	Both	1	6/6

A world-class athlete has suffered a terrible injury to his leg. Can your company restore him to peak performance, using the new tools of the bioengineering revolution? Come and compete against your classmates to win this medical and economic race! This course is meant to expose students to the theory and practical application of the biological revolution. Students will be challenged to use engineering principles to design and test regenerative therapies such as ACL injury reconstruction, bionic limbs, neural repair and interface technology, bone scaffold modeling and testing, blood vessel synthesis, cardiac assist devices, and skin replacements. Students will also engage in PCR, RFLP, DNA purification, gel electrophoresis, DNA sequencing, chromatography, tissue culture, stem cell manipulation, immunoprecipitation, microbiology, computational biology, and a large focus on regenerative medicine (tissue engineering). In addition, bioethics will be addressed throughout the curriculum, exposing students to the potential ramifications of technology on society. Numerous guest speakers and field trips will be arranged to reinforce the experiential nature of the course, allowing students to engage in meaningful dialogue with professionals in the biotechnology field. It should be noted that the instructor served as the lead educational outreach teacher for the region's most famous biotechnology venture, the Pittsburgh Tissue Engineering Initiative. Approximately half of the course will follow a thematic approach to tissue engineering, similar to the popular TE summer camps and current camp BioE. Students will compete as biotechnology companies, racing to restore the functionality of a world-class athlete by means of bioengineering and tissue engineering techniques. Honors level recommended for those interested in greater depth and/or workload.

# World Languages

## French

Level	Course Name	Number	Semester	Credits	Days
3	French I	0515	Both	1	6/6

This course introduces the students to the four skills necessary in learning a foreign language: speaking, listening comprehension, writing and reading. The first two are especially emphasized in addition to pronunciation and phonetics. Through the use of oral drills in the target language, the student acquires new phrases and vocabulary necessary for conversation. Oral and listening exercises reinforce the new vocabulary and grammar. Text used is *Discovering French Nouveau*. The grade will be based on quizzes, tests, class participation, and collected homework exercises.

Level	Course Name	Number	Semester	Credits	Days
3	French II	0525	Both	1	6/6

French 2 will continue and finish the *Discovering French Nouveau* book. Review of French 1 material will not be conducted formally, but as structures and vocabulary are encountered, they will be reviewed. Each student is responsible for those structures and must be sure he has mastered them. The grade will be based on tests, quizzes, class participation, and collected homework.

Level	Course Name	Number	Semester	Credits	Days
3	French III	0535	Both	1	6/6

The text for French 3 will be *Discovering French Nouveau*, the second book in the series used in French 1 and French 2. This class is an elective for those students who enjoy the language and have the interest and ability to continue on the third level. Students are expected to work daily. The class size is usually smaller than during the first two years and more oral proficiency is required since more French is used. Listening skills are necessary to facilitate comprehension. Review of vocabulary and grammar is integral to the class. When past structures or words are encountered, they are reviewed both orally and in written form. The student must continue this review, as he requires. He must take notes. Evaluation is through quizzes, tests, homework and daily participation.

Prerequisites: Students must have a C+ average in French 2 and teacher approval

Level	Course Name	Number	Semester	Credits	Days
4	Honors French IV	0545	Both	1	6/6

This class will continue in the *Discovering French Nouveau Balnc* book for the first semester. In the first quarter the student will describe his summer and the class will ask questions in French. Since the class is smaller than in previous years, it will be possible to use much more French in all activities and we are encouraged to converse on general topics. Notebooks need always be ready as we encounter new structures and vocabulary. The student must be independent in his review of previous work and words. Compositions will be more important and frequent,



including full page journal entries. Since students are rewarded with Honors credit, their work is expected to be at that level.

## *Italian*

Level	Course Name	Number	Semester	Credits	Days
3	Italian I	0518	Both	1	6/6

This course introduces students to the language and culture of Italy. Students will work on basic conversational skills through writing, reading, speaking and listening. Simple grammar points will be covered so that students can engage in typical greetings and tourist-related dialogue with an acceptable degree of accuracy. Another and equally important aim of this course is to explore themes of Italian culture and society. Every couple of weeks we will consider a different aspect of Italy's richness: its dialects, its art and landscapes, its music from Opera to current pop songs, its cinema and web serials, its cuisine, literature and poetry, immigration and emigration, national identity, the Made-In-Italy brand, the family, and much more. The material for these cultural units will be in English.

Prerequisite: Department chair approval is required.

## *Latin*

Level	Course Name	Number	Semester	Credits	Days
3	Latin I	0517	Both	1	6/6

The Latin 1 course exposes the student to the language and culture which are one of the pillars of Western Civilization. The goal of this course is to develop in the students the ability to read and understand Latin prose with fluency while avoiding direct translation. The students accomplish this by learning vocabulary, memorizing and understanding inflected forms, completing grammar and syntax exercises and reading Latin prose. Students also study English derivatives and Latin bases and prefixes which form so many words in the English lexicon. These tasks are the basic building blocks for building confidence and fluency in Latin. The students are also enriched by the study of the cultural aspects of the Roman civilization and its enduring legacy today.

Level	Course Name	Number	Semester	Credits	Days
3	Latin II	0527	Both	1	6/6

The Latin II course continues the students' progress in learning the Latin language, building on the foundation of grammar and vocabulary from Latin I. Students learn new forms of nouns and verbs and grammatical constructions that greatly increase their ability to read and write with confidence in Latin. Students also learn new Latin vocabulary and develop their ability to analyze the many English words that have a Latin origin, while strengthening their understanding of both Latin and English grammar. Throughout the course, students encounter Roman history, culture, and language, and learn how they have been influential in our history in law, medicine, religion, and science, and continue to be so today.



Level	Course Name	Number	Semester	Credits	Days
4	Honors Latin III	0537	Both	1	6/6

The Latin III course completes students' introduction to the Latin language. Students practice using the grammar that they have learned in Latin II, along with new grammatical constructions such as the subjunctive mood of verbs, so that they can read and write accurately and confidently in Latin. By the end of the year they will have learned all the major grammar of the Latin language and have developed all the skills they need to be able to read original Latin texts on their own or in an advanced reading class. The course continues to explore the Latin origins of English words so that students can analyze them to discover their meaning, and students discuss the influence of Latin language, culture, and history in law, science, religion, medicine, and history in ancient and modern times. Learning Latin at this level is both challenging and rewarding; to reflect this, students are given Honors credit for their work, but their work must meet that standard.

Prerequisite: A grade average of 80% or higher in Latin II and instructor approval.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Latin IV	0547	Both	1	6/6

The Honors Latin IV course is an advanced reading course, equivalent to a college-level class, focused on Vergil's Aeneid, the most famous and influential epic poem written in Latin. It is a class in both language and literature. Students translate parts of the poem from Latin into English, paying close attention to grammar and use of vocabulary, and learn about Vergil's poetic techniques of contrast, imitation, surprise, and emphasis in telling the dramatic story of how Rome was founded. Students learn to 'scan' or read the poetic meter in which the epic is written and practice the grammar that they have learned in previous years by applying it in their reading. Students also read the whole poem in English translation and discuss it throughout the year, exploring themes of Roman history, mythology, and culture, and their relevance to our own world. This course is offered as a College in High School course through the University of Pittsburgh, for which students have the option of earning college credits. The work required is the same, whether students choose to earn college credit or not.

Prerequisite: A grade average of 85% or higher in Latin III and instructor approval.

## Spanish

Level	Course Name	Number	Semester	Credits	Days
3	Spanish I	0511	Both	1	6/6

Spanish 1 introduces the student to all three modes of communication: interpersonal (speaking), interpretive (reading and listening), and presentational (speaking and writing). The students learn basic grammar and syntactical structures. Many cultures of the Spanish speaking world are explored as an integral part of the course. Students are evaluated daily on their ability to orally respond in class in Spanish. In addition, students will be evaluated with a departmental proficiency rubric through various communicative activities and assessments.

Level	Course Name	Number	Semester	Credits	Days
3	Advanced Spanish I	0509	Both	1	6/6

This course is offered for students who have studied Spanish previously in grade school and/or junior high school and feel that they have a working knowledge of basic Spanish. Upperclassmen must have completed their language requirement with a B+ average or better. Students will be evaluated with a departmental proficiency rubric through various communicative activities and assessments. Students will also explore cultures of the Spanish speaking world throughout each unit.

Level	Course Name	Number	Semester	Credits	Days
2	Spanish II	0522	Both	1	6/6

The 522 course follows the same guidelines as 521. However, this course reinforces Spanish 511 material. Students spend more time in acquisition of basic vocabulary and performing basic language functions. This course is geared toward the student who has experienced difficulty in Spanish I and who only plan to fulfill the two years of a world language requirement. Evaluation will be based on written assessments and projects using a departmental proficiency rubric, homework, class work, listening comprehension, grammar and vocabulary skills, oral proficiency, and participation. Many cultures of the Spanish speaking world are explored as an integral part of the course. Students cannot progress to Spanish III due to the decelerated curriculum.

Prerequisite: Spanish I

Level	Course Name	Number	Semester	Credits	Days
3	Spanish II	0521	Both	1	6/6

The goal of Spanish II is that students will be able to perform basic language functions such as: discussing health and mood to a doctor, expressing likes and dislikes, and introducing the past tense to discuss hobbies and interests. As in Spanish I, the target language will be used for all but difficult grammatical situations. Evaluation will be based on quizzes, projects, homework, class work, and participation. Students will also learn about the key aspects of Hispanic culture.

Prerequisite: Spanish I

Level	Course Name	Number	Semester	Credits	Days
4	Honors Spanish II	0520	Both	1	6/6

Honors Spanish II has as its goal the preparation of students for the Honors Spanish III course. Students enter this course with the hope of continuing to study Spanish for all 4 years. Honors Spanish II is an accelerated course in which second-year material will be covered more quickly and in greater depth than a regular class. Additional writing and listening comprehension activities will be part of the course, as well as individual and group activities. Evaluation will be based on written assessments and projects using a departmental proficiency rubric, homework, class work, listening comprehension, grammar and vocabulary skills, oral proficiency, and participation. Many cultures of the Spanish speaking world are explored as an integral part of the course.

Prerequisite: Advanced Spanish I or a 92% or higher in Spanish I with teacher approval.

Level	Course Name	Number	Semester	Credits	Days
3	Spanish III	0531	Both	1	6/6

Spanish III is designed for the student who has the interest and the ability to pursue language study at the third-year level. The purpose of the course is to increase the student's oral, grammatical and comprehension abilities. Evaluation will be based on written assessments and projects using a departmental proficiency rubric, homework, class work, listening comprehension, grammar and vocabulary skills, oral proficiency, and participation. Many cultures of the Spanish speaking world are explored as an integral part of the course.

Prerequisites: Spanish II 521 with a 85% average or above and teacher approval.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Spanish III	0530	Both	1	6/6

Honors Spanish III provides a continuation of advanced grammar and conversation in the target language. Students take this course with the hope of continuing Spanish study for a fourth year. The students will attempt to employ vocabulary and grammar in short essays and discussions. There will be an emphasis on conversion and verb tenses. Evaluation will be based on written assessments and projects using a departmental proficiency rubric, homework, class work, listening comprehension, grammar and vocabulary skills, oral proficiency, and participation. Many cultures of the Spanish speaking world are explored as an integral part of the course.

Prerequisite: Honors Spanish II OR a 94% or higher in Spanish II with teacher approval.

Level	Course Name	Number	Semester	Credits	Days
4	Honors Spanish IV: Language & Culture	0543	Both	1	6/6

After three years of Spanish, the fourth-year student now has the background to concentrate on the skills which most interest him. Honors Spanish: Advanced Language Development is designed to provide each student with opportunities to improve his speaking, writing, reading and comprehension abilities, as well as his knowledge of the Hispanic world. In conjunction with the cultural, historical readings, the student reviews and practices grammar. Evaluation will be based on written assessments and projects using a departmental proficiency rubric, daily conversations in Spanish in the classroom, and oral and written work.

Prerequisites: Students must have an 85% or higher in Honors Spanish III OR a 93% or higher in Spanish III and teacher approval.

Level	Course Name	Number	Semester	Credits	Days
5	Advanced Placement Spanish	0534	Both	1	6/6

AP Spanish is directed toward the use of the Spanish language through print texts, audio texts, email replies, interpersonal conversations, persuasive essays, and oral presentations in the target language. The course is divided into six themes: Beauty and Aesthetics, Global challenges, Science and Technology, Contemporary Life, Personal and Public Identities, and Families and Communities. The Temas textbook series, as well as other sources, are used throughout the year. Students are required to take the AP Spanish Language Exam in May.

Prerequisites: Must have successfully completed Honors Spanish III with a 96% or higher OR Honors Spanish Advanced Language and Culture Study with a 92%.