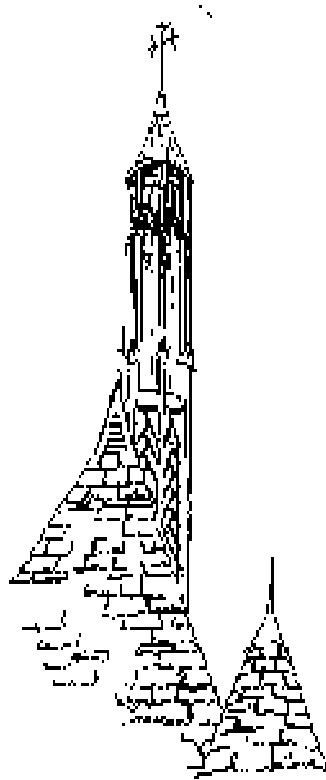


# 2020 – 2021 Course Catalogue



Central Catholic High School

Pittsburgh, Pennsylvania

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### Possible Four-Year Plan for Courses

\*\*\* This is a simple outline of **ONLY** required and elective course possibilities. Students may wish to elect more courses, more advance courses, or electives. Please refer to specific departments for more information about course prerequisites and electives. \* = *electives*

<u>Subjects</u>	<u>9<sup>th</sup> grade</u>	<u>10<sup>th</sup> grade</u>	<u>11<sup>th</sup> grade</u>	<u>12<sup>th</sup> grade</u>
<u>Religion</u>	Religion 1	<ul style="list-style-type: none"> <li>• Religion 2</li> <li>• Brotherhood</li> </ul>	<ul style="list-style-type: none"> <li>• Religion 3</li> <li>• Brotherhood</li> <li>• Peer Ministry</li> </ul>	<ul style="list-style-type: none"> <li>• Man of Faith</li> <li>• Brotherhood</li> <li>• Peer Ministry</li> </ul>
<u>English</u>	<ul style="list-style-type: none"> <li>• Exploring Lit and Writing 1</li> <li>• Exploring Lit and Writing 1 (Hn)</li> </ul>	<ul style="list-style-type: none"> <li>• Exploring Lit and Writing 2</li> <li>• Exploring Lit and Writing 2 (Hn)</li> </ul>	<ul style="list-style-type: none"> <li>• Survey of Am Literature</li> <li>• Survey of Am Literature (Hn)</li> <li>• AP Language &amp; Comp</li> </ul>	<ul style="list-style-type: none"> <li>• Shakespeare</li> <li>• African Am Studies</li> <li>• Folklore &amp; Mythology</li> <li>• Works of C.S. Lewis</li> <li>• Global Conflict</li> <li>• Latin American Theater (Hn)</li> <li>• World Lit (Hn)</li> <li>• AP English</li> </ul>
<u>Social Studies</u>	<ul style="list-style-type: none"> <li>• Human Geography</li> <li>• AP Human Geography</li> </ul>	<ul style="list-style-type: none"> <li>• World History 1</li> <li>• World History 2</li> <li>• World History 2 (Hn)</li> <li>• AP European History</li> </ul>	<ul style="list-style-type: none"> <li>• US History</li> <li>• US History (Hn)</li> <li>• AP US History</li> </ul>	* <ul style="list-style-type: none"> <li>• AP American Gov</li> <li>• American Gov (Hn)</li> </ul> Check course catalogue for additional electives
<u>Math</u>	<ul style="list-style-type: none"> <li>• Algebra 1</li> <li>• Algebra 1 (Hn)</li> <li>• Algebra 2 (Hn)</li> </ul>	<ul style="list-style-type: none"> <li>• Algebra 2</li> <li>• Algebra 2 (Hn)</li> <li>• Adv Geometry</li> <li>• Geometry (Hn)</li> </ul>	<ul style="list-style-type: none"> <li>• Geometry</li> <li>• Adv Algebra 2</li> <li>• Trig/Math Analysis (Hn)</li> </ul>	* <ul style="list-style-type: none"> <li>• Trig/Pre Calc</li> <li>• Trig/Pre Calc (Hn)</li> <li>• Calculus (Hn)</li> <li>• AP Calculus</li> </ul>
<u>Language</u>	<ul style="list-style-type: none"> <li>• French 1</li> <li>• Latin 1</li> <li>• Spanish 1</li> <li>• Advance Spanish 1</li> </ul>	<ul style="list-style-type: none"> <li>• French 2</li> <li>• Latin 2</li> <li>• Spanish 2</li> <li>• Spanish 2 (Hn)</li> </ul>	* <ul style="list-style-type: none"> <li>• French 3</li> <li>• Latin 3</li> <li>• Spanish 3</li> <li>• Spanish 3 (Hn)</li> <li>• Pre AP Spanish</li> </ul>	* <ul style="list-style-type: none"> <li>• French 4 (Hn)</li> <li>• Latin 4 (Hn)</li> <li>• Spanish 4 (Hn)</li> <li>• Spanish 5 (Hn)</li> <li>• AP Spanish</li> </ul>

<b><u>PE/ Health</u></b>	Physical Education *	Health *	* <ul style="list-style-type: none"> <li>• Fitness &amp; Nutrition</li> <li>• Advanced PE</li> </ul>	* <ul style="list-style-type: none"> <li>• Fitness &amp; Nutrition</li> <li>• Advanced PE</li> </ul>
<b><u>Art</u></b>	Studio Art I *	* <ul style="list-style-type: none"> <li>• Studio Art II</li> <li>• Principles of Art and Design</li> </ul>	* <ul style="list-style-type: none"> <li>• Studio Art III</li> <li>• Principles of Art and Design</li> </ul>	* <ul style="list-style-type: none"> <li>• Studio Art IV (Hn)</li> <li>• Principles of Art and Design</li> </ul>
<b><u>Music</u></b>	* <ul style="list-style-type: none"> <li>• Vocal Music I</li> <li>• Band</li> <li>• Jazz Band</li> <li>• String Ensemble</li> </ul>	* <ul style="list-style-type: none"> <li>• Vocal Music II</li> <li>• Advanced Vocal Music</li> <li>• Band</li> <li>• Jazz Band</li> <li>• String Ensemble</li> </ul>	* <ul style="list-style-type: none"> <li>• Advanced Vocal Music</li> <li>• Band</li> <li>• Jazz Band</li> <li>• Music History</li> <li>• String Ensemble</li> </ul>	* <ul style="list-style-type: none"> <li>• Advanced Vocal Music</li> <li>• Band</li> <li>• Jazz Band</li> <li>• String Ensemble</li> </ul>

To: All Central Catholic Freshmen, Sophomores, and Juniors  
From: Mr. Vincent Ciaramella, Assistant Principal for Academic Affairs  
RE: Course Registration Procedures for the 2020-2021 School Year

***This is your Course Catalogue for the 2020-2021 school year. Please take the time to review the descriptions of the courses carefully. Share this booklet with your parents. Over the next several weeks, you will have an opportunity to learn more about next year's courses from your teachers, your Guidance Counselor and me. Pay careful attention to what you hear, because it is important for you to make intelligent choices for the courses you will take next year.***

**The following issues are very important for you to consider in making your course selections:**

1. You will receive your Course Registration Card during a class assembly. The card must be signed by each of your current teachers with a recommendation for the courses you will take next year. If you need to have the approval of a teacher in another department to pre-register for a class, be sure that you seek out that teacher before the deadline.
2. The back of this booklet contains a sample course registration form for you to use in working out your selections. The actual registration card that you will receive must be returned back to your counselor by dismissal on **Tuesday, April 7, 2020**. *You do need a parent signature on the card.* Please have your parents review the course selection and obtain their approval. The accuracy of the course card is vital for scheduling purposes. **You must submit your course selections on-line through PowerSchool no later than Monday, April 6, 2020 without exception. Counselors will choose courses for students that do not abide by the timeline.**

3. Make the effort NOW to choose appropriate classes for next year. You must meet all the requirements or pre-requisites, which are outlined in the course descriptions. If you fail to meet the requirements for a class at the end of the school year, I will change your course selections. **In cases where courses are offered to more than one class level, seniors will receive priority in scheduling.**
4. When choosing your courses, make sure that you select courses which are appropriate to your abilities and challenging to your best efforts. You need to make honest choices based upon what is most important to you. **CHOOSE CLASSES ON THEIR OWN MERITS. DO NOT CHOOSE CLASSES BECAUSE OF TEACHER PREFERENCE.** There is no guarantee that the same teacher will be assigned to teach a particular class next year. **It is the policy of Central Catholic that we will not permit class changes because of student or parent preference for or against a particular teacher. BE AWARE OF THIS POLICY.**
5. All freshmen and sophomores must take ½ credit of Health or Physical Education.
6. **Students who intend to enroll in multiple Honors and/or Advanced Placement classes are reminded that scheduling into multiple single-section classes can not be guaranteed.** Every effort will be made to design the master schedule to permit students to enroll in as many of these classes as possible. However, conflicts do arise. **Be prepared to make alternate course selections should there be an irresolvable conflict with your schedule.**
7. *Students enrolling in Advanced Placement courses are reminded that you will be **REQUIRED** to take the Advanced Placement examination for each of those courses in May, 2021. Payment will be collected during the first quarter. No refunds will be issued after exams are ordered in the fall, if you drop the class after the ordering date.*
8. Scheduling Central Catholic High School is a highly complex process. It is necessary that you supply accurate data in a timely fashion so that the master schedule can be completed on time. Therefore, you **MUST** be aware of and **COMPLY** with the following dates and expectations:

MONDAY, April 6, 2020

THE COURSE SELECTION ON-LINE PROCESS UTILIZING POWERSCHOOL IS COMPLETED.

WEDNESDAY, April 7, 2020 ---

COURSE REGISTRATION CARDS MUST BE RETURNED TO YOUR COUNSELOR BY 2:40 PM WITH OR PARENT/GUARDIAN SIGNATURE.

**IF YOU DO NOT COMPLY WITH THIS DEADLINE, YOU WILL FORFEIT YOUR OPPORTUNITY TO SELECT YOUR COURSES FOR THE UPCOMING SCHOOL YEAR. COURSES WILL BE SELECTED FOR YOU.**

**YOUR COURSE CARD MUST BE SIGNED BY YOUR PARENT/GUARDIAN. THE COURSE CARD INDICATES YOUR COURSE CHOICES.**

APRIL 20 – JUNE 8, 2020 ---

PRELIMINARY SCHEDULING WILL BEGIN. STUDENTS AND/OR PARENTS MAY REQUEST COURSE CHANGES ***WITHOUT PENALTY.***

JUNE 8 – JULY 17, 2020 ---

SCHOOL SCHEDULING COMPLETED. ANY COURSE CHANGE REQUESTS MUST OCCUR THROUGH CONTACT WITH MR. CIARAMELLA AND BE ACCOMPANIED BY A ***\$50.00 COURSE CHANGE FEE. This also applies to desired changes for second semester course of the current school year.***

AFTER August 1, 2020 ---

***THE SCHOOL SCHEDULE IS FINAL. STUDENT REQUESTS FOR COURSE CHANGES WILL NOT BE HONORED.*** THE ONLY CHANGES MADE IN THE SCHEDULE WILL BE THOSE TO CORRECT ERRORS MADE BY THE SCHOOL.

## DEPARTMENT OF RELIGION

*The four years of Religion are designed to provide the student with a foundation for a deeper understanding and an integration of the Christian faith into his own life. In each course, both lecture and small group discussions are utilized. Students are required to involve themselves in the classroom activities and complete reading assignments from the text and supplementary sources. A number of short research papers and reflections are normally assigned; periodic quizzes and exams will be given, and a longer paper may be required at the discretion of the instructor.*

### RELIGION I

**0011 A (1cr) 6/6 Freshmen Level 3**

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 on 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.

The course will be taught in four sections:

**THE CREED:** This will be an overview of what Catholics believe about God, the Holy Trinity, Mary, the saints, and The Church, based upon the Apostles' Creed.

**LITURGY and SACRAMENTS:** This will be an overview of how Catholics worship God and encounter Jesus Christ through the Seven Sacraments.

**MORALITY:** This will be about Catholic decision-making, sin, and conscience. The Ten Commandments are used as a basis for understanding what the Church teaches about specific moral issues.

**PRAYER:** This focuses on the Catholic Church's teaching on prayer, including the various types of prayer, the methods of prayer, and what we pray for when we pray the Our Father.

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.



## **RELIGION II**

**0022 A (1cr) 6/6 Sophomores Level 3**

### **THE PASCHAL MYSTERY**

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. The Paschal Mystery provides students with an extensive understanding of Jesus and of Christianity.

### **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.

## **RELIGION III**

**0033 A (1cr) 6/6 Juniors Level 3**

### **THE SACRAMENTS**

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.

### **CHRISTIAN MORALITY**

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.

## **A MAN OF FAITH**

**0058** A (1cr)

**6/6** Seniors

**Level 3**

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

## **BROTHERHOOD AS A SCHOOL OF VIRTUE**

**0060** A (1 cr)

**6/6** Juniors and Seniors

**Level 4**

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.

A maximum of 15 students per semester and seniors will have priority.

## **PEER MINISTRY**

**0061** A (1cr)

**6/6** Juniors and Seniors

**Level 3**

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.

The class will be divided into two parts. 1) Traditional Lecture/Seminar format and 2) Implementation and practice of the material covered in class discussions. Students will be part of the team that facilitates the Days of Reflection, Liturgies, mission drives, service projects and other needs of the community.

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.

Seniors will have priority. Class will be limited to 25 students.

Assessment: Weekly reflections, participation, completion of assigned projects

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<b>DEPARTMENT OF ENGLISH</b>
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**EXPLORING LITERATURE AND WRITING 1 (HONORS)****0117 A (1cr) 6/6 Freshmen Level 4**

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 8<sup>th</sup> grade year. This course, which is the first part a two-year program, focuses on fundamental genre study and essay composition, and is designed to complement the freshmen social studies course.

**EXPLORING LITERATURE AND WRITING 1****0118 A (1cr) 6/6 Freshmen Level 3**

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 40<sup>th</sup> through 87<sup>th</sup> level on the standardized examinations. The course, which is the first part a two-year program, itself focuses on fundamental genre study and essay composition, and is designed to complement the freshmen social studies course.

**EXPLORING LITERATURE AND WRITING 1****0119 A (1cr) 6/6 Freshmen Level 2**

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 a two-year program, itself focuses on fundamental genre study and essay composition, and is designed to complement the freshmen social studies course.

*Sophomores must select one of the following literature courses:*

**EXPLORING LITERATURE AND WRITING 2 (HONORS)**

**0127 A (1cr) 6/6 Sophomores Level 4**

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. Enrollment is limited to twenty-five (25). Students who have successfully completed Honors Exploring Literature and Writing I with at least a 90% will receive priority. If space is available, students from regular sections with a 98% average and teacher approval will be considered.

**EXPLORING LITERATURE AND WRITING 2**

**0121 A (1cr) 6/6 Sophomores Level 3**

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.

**EXPLORING LITERATURE AND WRITING 2**

**0123 A (1cr) 6/6 Sophomores Level 2**

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.

## **ADVANCED EXPLORING LITERATURE AND WRITING 2**

**0128 A (1cr) 6/6 Sophomores Level 4**

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. Enrollment is limited to twenty-five (20). Students who do not meet the requirements of Honors Exploring Literature and Writing I will receive priority over level 3 students wishing to advance. Students from Exploring Literature & Writing I must sit for a timed essay if they wish to be considered for this or the Honors course.

**Juniors must take a full-year American Literature course (or AP English Language and Composition) in order to earn their required English credit for the year. Juniors MAY take an additional World Literature elective, but the additional course will count as an elective credit, not a required English credit.**

## **SURVEY OF AMERICAN LITERATURE (HONORS)**

**0138 A (1cr) 6/6 Juniors Level 4**

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. Class size is limited to 25 students. Students from the Honors Exploring Literature and Writing 2 classes who have maintained a 92% average will receive first priority. If there is remaining space, students from the regular sophomore classes with a 98% average will be considered.

## **SURVEY OF AMERICAN LITERATURE**

**0131 A (1cr) 6/6 Juniors Level 3**

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

## **SURVEY OF AMERICAN LITERATURE**

**0133 A (1cr) 6/6 Juniors Level 2**

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.

## **JUNIOR SEMINAR**

**0139 A (1cr) 6/6 Double periods Juniors Level 4**

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. **Requirement: Students must be in the Scholars Program**

## **AP LANGUAGE AND COMPOSITION**

**0148 A (1cr) 6/6 Juniors Level 5**

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. To be considered for the course, students must be in the Honors English program, have at least a 92% in the Exploring Literature and Writing course, and have departmental approval. Students are required to take the AP Exam.

## **SCHOLARSHIP: SENIOR THESIS**

**0149 A (1cr) 6/6 Seniors Level 4**

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. Requirement: Students must be in the Scholars Program.

**Seniors must take EITHER a full-year elective OR TWO World Literature semester electives. Seniors MAY take an additional World Literature elective, but the additional course will count as an elective credit, not a required English credit.**

## **ADVANCED PLACEMENT ENGLISH**

**0150 A (1cr) 6/6 Seniors Level 5 CiHS**

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. To be considered for the course, students must be in the Honors English program, have at least a 93% in the AP Language and Composition course or a 98% in the Honors American Literature course, and have departmental approval. Students are required to take the AP Exam.

## **SURVEY OF WORLD LITERATURE (HONORS)**

**0140 A (1cr) 6/6 Seniors Level 4**

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. Class size is limited to 25 students. Students from the Honors British Literature classes who have maintained a 92% average will receive first priority. If there is remaining space, students from the regular junior classes with a 98% average will be considered.

## **WORLD LITERATURE: SURVEY**

**0153**   **A** (*1cr*)      **6/6**      **Seniors**      **Level 2**

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.

## **BRITISH LITERATURE: SHAKESPEARE**

**0132**   **S** (*1/2 cr*)      **6/6**      **Seniors**      **Level 3**

This course requires a significant amount of reading from Shakespeare's Sonnets, Histories, Tragedies, and Comedies. Additionally, the course links historical events with literature, film, and art of the same time. The course explores some Shakespearean works that many high school students never have the opportunity to read. This gives students a deeper understanding of Shakespeare's influence on English literature and the English Language. The students will also compare the works and time of Shakespeare with contemporary issues. Reading, writing and thinking critically through the lens of Shakespeare will help students hone the necessary skills to be successful in a college environment and the world in general.

## **BRITISH LITERATURE: THE LIFE AND WORKS OF C.S. LEWIS**

**0142**   **S** (*1/2 cr*)      **6/6**      **Seniors**      **Level 3**

This course aims to provide students with a thorough understanding of the life and works of Christian writer and theologian C.S. Lewis. The course focuses on three domains of Lewis' works: theology and apologetics, fantasy and fiction as well as philosophy, letters and essays. We will also study Lewis as a literary critic and analyze his works of literary criticism. Students can expect a better understanding of both their Christian faith as well as a deeper knowledge of one of the most important theologians of the 20<sup>th</sup> century.

## **WORLD LITERATURE: AFRICAN AMERICAN STUDIES**

**0152**   **S** (*1/2cr*)      **6/6**      **Seniors**      **Level 3**

This course is a survey of African American Literature starting from the Harlem Renaissance and ending with Contemporary Literature of the 21st century. The course examines various types of African American literary and cultural mediums, including poetry, film, autobiography, and short fiction. Class discussion will focus on the various social and economic issues of contemporary culture. Graded work will be writing-intensive and will include several essays.



**WORLD LITERATURE: FOLKLORE AND MYTHOLOGY IN THE DIGITAL AGE**

**0154 S (1/2 cr) 6/6 Seniors Level 3**

This course will provide students with an introduction to the study of mythology and folklore through an examination of the foundational texts of multiple world mythologies and various collections of folklore. Later units will require students to examine modern appropriations of traditional mythology and folklore.

**WORLD LITERATURE: WAR OF THE WORLD: GLOBAL CONFLICT OF THE 20<sup>TH</sup> CENTURY THROUGH LITERATURE, FILM, ART AND MUSIC**

**0156 S (1/2 cr) 6/6 Seniors Level 3**

This course will provide students with a close look at war in the 20th Century. Although the most significant conflicts on the 20th century will be the focus, supplemental texts from previous eras will be integrated into the course to provide some deeper perspectives. Art, film and music related to war will also be analyzed and connected to the literature.

**WORLD LITERATURE: LATIN AMERICAN LITERATURE: OUR AMERICA**

**0157 S (1/2 cr) 6/6 Seniors Level 3**

This World Literature elective challenges students to explore in particular depth the historical context of Latin American Literature in their efforts to conduct deep analysis and formulate cogent, original, and textually supported arguments regarding the course texts. Students will wrestle with questions regarding the nature of “America” as such in light of the present and historical relationship between the United States and other American nations as well as the vicissitudes of revolution and counter-revolution in Latin America. Students will study Latin American Literature with close attention to its unique historical context, thus facilitating students’ ability to engage in thoughtful, nuanced, and independent work with a variety of texts read in translation. This supports the course’s ultimate goal of preparing students for the study of literature at the undergraduate level through helping students to develop the skills necessary to independently build context, analyze literature, and formulate sound arguments. This course must be taken in conjunction with Global Conflict.

## HONORS HUMANITIES: WORLD LITERATURE AND THEATER

**0170 A (1 cr) 6/6 Juniors and Seniors Level 4**

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.**

**The following English courses are elective courses which may be taken in addition to the English literature requirement. Note that these courses do NOT replace the literature requirement.**

## CARTOONING

**0161 S (1/2 cr) 6/6 Juniors and Seniors Level 3**

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.

**Approval for this course is required by Mr. Campbell. This meets the fine arts requirement.**

## JOURNALISM AND NEWSPAPER DESIGN

**0162 A (1cr) 3/6 Sophomores, Juniors and Seniors Level 3**

This course will be a hybrid of an introduction to journalism and newspaper production 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.**

## **CREATIVE WRITING**

**0165 S (1/2 cr) 6/6 Sophomores, Juniors and Seniors Level 3**

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. **Department approval is required.**

## **YEARBOOK DESIGN**

**0166 A (1cr) 3/6 double period Sophomores, Juniors, Seniors Level 3**

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. Students will also be required to stay after school once a week for a two-hour work session. Former students have the opportunity to take the course again and hold an editorial position. This is a 15 person maximum for this course and students currently enrolled in the course will have first preference. All interested students must receive direct permission from the moderator of the Yearbook before registering for the course. **This meets the fine arts requirement.**

## **ARGUMENT AND DEBATE**

**0168 S (1/2cr) 3/6 Juniors and Seniors Level 3 CiHS**

This is a semester-length course designed to introduce students to the fundamentals of formal debate. Students will learn to construct carefully reasoned, well-supported arguments while presenting and defending them in the context of increasingly larger audiences over the course of the term. Students will have frequent opportunities to engage in debates on real-world issues of their own selection and to hone their formal skills in a variety of debate formats through the use of topics from the national competitive circuit. Students will have the opportunity to earn 3 college credits through the University of Pittsburgh's College in High School program. Students must have teacher's approval.

## **THE LITERATURE OF FILM CRITICISM**

**0169 S (1/2) 3/6 double periods Juniors and Seniors Level 3**

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.**

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## DEPARTMENT OF SOCIAL STUDIES

### **ADVANCED PLACEMENT HUMAN GEOGRAPHY**

**0211** A (*Icr*)

**6/6 Freshmen**

**Level 5**

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 88<sup>th</sup> percentile or higher in Reading and Language on the placement test or by participating in a history and writing evaluation in May of the 8<sup>th</sup> grade year.

The AP exam must be taken at the end of the year.

### **HUMAN GEOGRAPHY**

**0212** A (*Icr*)

**6/6 Freshmen**

**Level 3**

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.

### **HUMAN GEOGRAPHY**

**0213** A (*Icr*)

**6/6 Freshmen**

**Level 2**

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.

## **HONORS WORLD HISTORY II**

**0220 A (1cr) 6/6 Sophomores Level 4**

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.

Method: lectures, discussion, audio-visual, digital technologies

Readings: textbook, paperbacks, supplemental readings, internet sources

Evaluation: 2-5 examinations per quarter; short papers, projects

Approval of the Social Studies Department is required.

## **WORLD HISTORY II**

**0225 A (1cr) 6/6 Sophomores Level 3**

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.

Method: lectures, discussions, audio-visual aids, in class work

Readings: textbook, supplemental reading, handouts

Evaluation: 2-5 examinations per quarter, quizzes, assignments and participation

Approval of department is required.

## **WORLD HISTORY I**

**0226 A (1cr) 6/6 Sophomores Level 2**

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.

Method: lecture, discussion, audio-visual aids, individual work with small groups and instructor; e-textbook; internet assignments

Evaluation: 2-3 examinations per quarter, periodic quizzes, maps and assignments, participation, notebook

## **ADVANCED PLACEMENT UNITED STATES HISTORY**

**0250 A (1cr) 6/6 Juniors Level 5**

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.

Method: lectures, discussion and audio-visuals

Evaluation: tests, essays and research papers

Requirements: Departmental approval

Students must take the Advanced Placement examination at the completion of the course.

## **HONORS UNITED STATES HISTORY**

**0230 A (1cr) 6/6 Juniors Level 4**

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.

Method: lecture, discussion, audio-visuals

Evaluation: essays, examinations and papers

Requirement: Departmental approval

## **UNITED STATES HISTORY**

**0231 A (1cr) 6/6 Juniors Level 3**

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.

Method: lecture and discussion

Readings: text, supplemental readings

Evaluation: essay and objective interpretations

## **UNITED STATES HISTORY**

**0233 A (1cr) 6/6 Juniors Level 2**

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.

Method: lectures, discussion

Reading: basic textbook

Evaluation: tests, quizzes, occasional reports

## **ADVANCED PLACEMENT EUROPEAN HISTORY**

**0258 A (1cr) 6/6 Sophomores Level 5**

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.

## **ADVANCED PLACEMENT AMERICAN GOVERNMENT**

**0248 A (1cr) 6/6 Seniors Level 5**

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.

## **HONORS AMERICAN GOVERNMENT**

**0246 A (1cr) 6/6 Seniors Level 4**

This course is designed to be the honors level version of Introduction to Civics. Topics to be discussed include: the Constitution, Federalism, Civil Liberties, Civil Rights, Public Opinion and the Media, Political Parties and Elections, the Presidency, Congress, Federal Courts, Government and the Economy, Social Policy, and Foreign Policy and Democracy. Enrollment will be based on teacher recommendation.

## **HISTORY OF PITTSBURGH AND WESTERN PENNSYLVANIA**

**0262 S (1/2cr) 6/6 Seniors Level 3**

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.**

Method: lecture, discussion, guest lectures, tests, readings.

Evaluation: quizzes, tests, internet projects, research paper and class project



## **PSYCHOLOGY**

**0263 S1 (1/2cr) 6/6 Seniors Level 3**

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.

Methods: lecture, video, speakers, cooperative learning

Text: *Psychology in the New Millennium*

Supplemental readings from magazines, newspapers and related books

Evaluation: tests, quizzes, think-tank position papers, cooperative student presentations

## **HISTORY OF MODERN AMERICA**

**0265 S 2 (1/2cr) 6/6 Seniors Level 3**

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.

Methods: lecture, class discussion, and audio-visual materials

Evaluation: tests, quizzes and short research projects

## **SOCIOLOGY**

**0266 S2 (1/2cr) 6/6 Seniors Level 3**

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.

## **ADVANCED PLACEMENT ART HISTORY**

**0260 A (1cr) 6/6 Seniors Level 5**

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.**

## **THE STORY of WORLD WAR II**

**0271 S2 (1/2 cr) 6/6 Seniors Level 3**

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.

## **INTRODUCTION to LEADERSHIP**

**0272 S (1/2 cr) 3/6 double periods Juniors and Seniors Level 3**

*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.

Evaluation: Class participation, student presentations, quiz, final paper.

<b>DEPARTMENT OF MATHEMATICS</b>
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**General Policy Statement** (Applicable to all students):

*In each math class, grades are determined primarily with written tests. In the Honors and Advanced sections, however, the teacher may assign research topics or short papers.*

*Teachers at all levels will assign homework daily and may incorporate it into the final grade.*

*The math program is sequential in nature; therefore, the student must receive departmental approval for any course.*

*If a course is listed as 3/6, it will have double periods.*

**HONORS ALGEBRA I**

**0310 A (1cr) 6/6 Freshmen Level 4**

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 should cover all of Algebra 1 and several topics from an Algebra 2 course as well.

**ADVANCED ALGEBRA I**

**0312 A (1cr) 6/6 Freshmen Level 3**

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.

**ALGEBRA I**

**0315 A (1cr) 6/6 Freshmen Level 2**

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.

**HONORS ALGEBRA II**

**0318 A (1cr) 6/6 Freshmen and Sophomores Level 4**

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 8<sup>th</sup> grade year. The Math Department creates and evaluates this placement exam.

## **ADVANCED GEOMETRY**

**0321 A (1cr) 6/6 Sophomores Level 3**

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.

## **ALGEBRA II**

**0322 A (1cr) 6/6 Sophomores Level 3**

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.

## **ALGEBRA II**

**0323 A (1cr) 6/6 Sophomores Level 2**

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.

## **HONORS GEOMETRY**

**0328** A (*1cr*)      **6/6**      **Sophomores**      **Level 4**

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.

## **HONORS TRIG/PRE-CALCULUS**

**0330** A (*1cr*)      **6/6**      **Juniors**      **Level 4**

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.

## **ADVANCED ALGEBRA II**

**0331** A (*1cr*)      **6/6**      **Juniors**      **Level 3**

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.

## **GEOMETRY**

**0332** A (*1cr*)      **6/6**      **Juniors**      **Level 3**

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.

## **GEOMETRY**

**0333** A (*1cr*)      **6/6**      **Juniors**      **Level 2**

This is the intermediate level of course 332.

## **GEOMETRY**

**0334** A (*1cr*)      **6/6**      **Juniors**      **Level 1**

This course is designed for students of average to below average mathematical ability. Guided proofs augment a deliberately paced presentation of the material.

## **ADVANCED PLACEMENT CALCULUS**

**0350** A (*1cr*)      **6/6**      **Seniors**      **Level 5**      **CiHS**

The Advanced Placement Calculus course is designed to be comparable to a first year college course and closely follows the syllabus for Calculus AB designed by the College Entrance Examination Board which administers the A.P. examination. Topics include a rigorous study of Limits and Continuity of Function; Convergent and Divergent Series; derivation of Derivatives including Slopes, Maximum/Minimum, Inflection points and cusps, Differentials, Implicit Differentiation, Related Rates of Change; Integration Techniques; Application of Integrals - Area under/between Curves, Pressure, Work, Volumes of Revolution, Trapezoidal Approximations, Length of Path; Improper Integrals. Elementary Differential Equations and Partial Differential Equations are included toward the end of the course as time permits. Homework assignments are approximately daily. Bi-weekly tests are administered. Students must take the A.P. Examination at the end of the course. Students also can participate in the CiHS Program in cooperation with the University of Pittsburgh.

## **ADVANCED PLACEMENT CLACULUS 2**

**0351** A (*1cr*)      **6/6**      **Seniors**      **Level 5**

AP Calculus BC focus on students' understanding of calculus concepts and provide experience with methods and applications. Through the use of big ideas of calculus (e.g., modeling change, approximation and limits, and analysis of functions), each course becomes a cohesive whole, rather than a collection of unrelated topics. Both courses require students to use definitions and theorems to build arguments and justify conclusions. The courses feature a multirepresentational approach to calculus, with concepts, results, and problems expressed graphically, numerically, analytically, and verbally. Exploring connections among these representations builds understanding of how calculus applies limits to develop important ideas, definitions, formulas, and theorems. A sustained emphasis on clear communication of methods, reasoning, justifications, and conclusions is essential. Teachers and students should regularly use technology to reinforce relationships among functions, to confirm written work, to implement experimentation, and to assist in interpreting results. Students must take the A.P. Examination at the end of the course.

## **HONORS CALCULUS**

**0340**    **A** (*1cr*)    **6/6**    **Seniors**    **Level 4**

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.

## **HONORS TRIG/PRE-CALCULUS**

**0342**    **A** (*1cr*)    **6/6**    **Seniors**    **Level 4**

The first semester is an accelerated, full course in trigonometry, including circular functions, vectors and polar coordinates.

The second half of this course prepares the student for Calculus. It includes a study of these functions: polynomial, rational, algebraic, exponential and logarithmic. The course will also cover complex numbers, matrices and conic sections.

Students will also receive a brief and informal introduction to limits and derivatives.

## **TRIGONOMETRY**

**0345**    **S1** (*1/2cr*)    **6/6**    **Seniors**    **Level 3**

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.

## **PRE-CALCULUS**

**0341**    **S2** (*1/2cr*)    **6/6**    **Seniors**    **Level 3**

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

## **TRIGONOMETRY**

**0347**    **S** (*1/2cr*)    **6/6**    **Seniors**    **Level 2**

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.

## **AP STATISTICS**

**0360**    **A** (*1cr*)    **6/6**    **Juniors and Seniors**    **Level 5**

AP Statistics is consistent and in keeping with the AP curriculum outline and requirements. This is an entry level college statistics course designed to prepare students for initial data analysis required for many college courses within both the physical and social science disciplines. This course is designed to introduce students to core Probability and Statistics concepts and tools for collecting, analyzing, making inferences, and for drawing conclusions from data collected. Parametric and non-parametric distribution statistics will be explored giving the student the opportunity to experience a wide array of data collections and analysis processes, spanning both the physical and social sciences. Students will experience the iterative technique of statistical model refinement as new questions are formed during the analysis process. To accomplish these goals, students will explore textbook examples and will link these to subjects outside the classroom (real time academic and industrial data bases in need of analysis). A college level textbook will be used and a sophisticated graphics calculator with statistics capability will be required. Assessment will include homework, exams and a class project. Students who register for this class must take the A.P. Statistics exam at the end of the course. Prerequisites: Algebra II with a minimum final grade of 85% or an interview with the instructor for admittance into the class.

## **AP COMPUTER SCIENCE**

**0370**    **A** (*1cr*)    **6/6**    **Seniors**    **Level 5**

The AP Computer Science course will cover the topics in a typical introductory college computer science class with a concentration in problem-solving and algorithm development. This course is a fast-paced advanced level course that focuses 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, looping, and input and output. Advanced topics include searching, sorting and recursion. The objective of this course is to prepare students for the A version of the Advanced Placement (AP) Computer Science examination.

*Prerequisites:* At least one programming course (or some outside introduction to programming through a robotics team), and a strong interest in Computer Science and proven academic record.

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



## **PROBABILITY AND STATISTICS**

**0375 S2 (1/2cr) 6/6 Seniors Level 3**

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.

*The following courses will all meet double periods.*

### **ENGINEERING 1 – Using Math to Engineer a Modern Society**

**0371 S (1/2cr) 3/6 Sophomores and Juniors Level 3 or 4**

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.

The successful completion of this course is a requirement for other higher-level pre-engineering courses that are expected to be offered.

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

**This course may not be taken with EXPERIENTIAL ENGINEERING 377**

## **EXPERIENTIAL ENGINEERING**

**0377 S (1/2cr) 3/6 Sophomores and Juniors Level 3**

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.

Some project work will require meeting outside of class to complete.

**This course may not be taken with Engineering 1 # 371.**

## **PRINCIPLES of ROBOTICS**

**0392 S (1/2cr) 3/6 Sophomores, Juniors and Seniors Level 3 or 4**

Computer programs are everywhere. Whether building the car you drive, filling the prescription vital to your health, helping the military protect our country, or keeping your house clean, automation through robotics is everywhere. By 2020, there will be an estimated 1.4 million jobs requiring a degree in computer science in the United States, but there will only be an estimated 500,000 people with such a degree. 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.

No prior experience is needed nor is a desire to take further computer science courses. However, this course can give 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. 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.

## **COMPUTER AND NETWORK ARCHITECTURE**

**0389 S (1/2 cr) 3/6 Sophomores, Juniors, and Seniors Level 3 or 4**

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 3 or 4 - they sign up for level 3 and then would be moved.

## **ALGORITHMIC THINKING & COMPUTER PROGRAMMING FUNDAMENTALS**

**0394 S (1/2cr) 3/6 Juniors and Seniors Level 3 or 4**

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".

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

## **COMPUTER AIDED DESIGN (CAD) and 3D MODELING**

**0381 S (1/2cr) 3/6 Juniors and Seniors Level 3 or 4**

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.

Certification in AutoDesk Inventor is required of students taking the course for Honors credit.

## **COMPUTER NETWORK FUNDAMENTALS**

**0383**            **S2** (1/2cr)    **3/6**            **Juniors and Seniors Level 3 or 4**

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.

Prerequisite: Permission of teacher.

## **ENGINEERING DESIGN**

**0386**            **S** (1/2cr)            **3/6**            **Seniors Level 4**

The engineering design process of identifying, researching, developing, planning, building, testing, and improving is a core skill that students develop in their progression through previous engineering courses. 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: Must be one of the following:** Engineering I (371) **OR** Experiential Engineering (377) **OR** CAD and 3D Modeling (381), **OR** CNC Programming (387).

## **CNC PROGRAMMING**

**0387 S (1/2cr)**

**3/6 Juniors and Seniors**

**Level 3**

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 throughout in the future. Assessments will include design projects, exams, presentations, and a final project.

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### **DEPARTMENT OF SCIENCE**

*All sciences classes will meet 3/6 with double periods unless otherwise noted.*

## **HONORS BIOLOGY**

**0410 A (1cr)**

**3/6 Freshmen**

**Level 4**

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 88<sup>th</sup> percentile or above in both Reading & Mathematics on the placement test or additional testing in May of the 8<sup>th</sup> grade year is required.

## **BIOLOGY**

**0421 A (1cr) 3/6 Freshmen Level 3**

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.

## **HONORS CHEMISTRY**

**0420 A (1cr) 3/6 Sophomores Level 4**

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: Completion of Honors Biology with a grade of 80%, a math grade of 80% and a teacher recommendation.

## **BIOLOGY**

**0422 A (1cr) 6/6 Freshmen Level 2**

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.

## **CHEMISTRY**

### **0431 A (1cr) 3/6 Sophomores and Juniors Level 3**

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.

## **CHEMISTRY**

### **0432 A (1cr) 6/6 Sophomores and Juniors Level 2**

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

## **CHEMISTRY II**

**0434 A (1 cr) 3/6 Juniors and Seniors**

This is solid content 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.

## **HONORS PHYSICS**

**0440 A (1cr) 3/6 Juniors and Seniors Level 4**

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 (first three quarters) and Honors Chemistry (first three quarters).

Concurrently enrolled in Algebra II or Trigonometry (Honors Level strongly Recommended) Students enrolling in Geometry next year must receive approval from the Honors Physics teacher before enrolling in Honors Physics.

Chemistry teacher recommendation also required

## **PHYSICS**

**0441 A (1cr) 3/6 Juniors and Seniors Level 3**

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).



## **PHYSICS**

**0442 A (1cr) 6/6 Juniors and Seniors Level 2**

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)

## **ADVANCED PLACEMENT PHYSICS**

**0459 A (1cr) 3/6 Seniors Level 5**

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).

## **ADVANCED PLACEMENT BIOLOGY**

**0450 A (1cr) 3/6 Juniors & Seniors Level 5 CiHS**

This course is meant to provide the equivalent education of a full year college introductory biology curriculum. 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.

## **HONORS ORGANIC CHEMISTRY**

**0456** A (*1cr*)      **3/6**      **Seniors**      **Level 4**

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 to 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. Prerequisites: 93% or above in Honors Chemistry and teacher recommendation. Limited to 20 students

## **ADVANCED PLACEMENT CHEMISTRY**

**0458** A (*1cr*)      **3/6**      **Juniors & Seniors**      **Level 5**

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. Teacher recommendation required.

## **ADVANCED PLACEMENT PHYSICS**

**0459** A (*1cr*)      **3/6**      **Seniors**      **Level 5**

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. Approximately  $\frac{3}{4}$  of 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. Both differential and integral calculus are used. Problem solving skills are emphasized. The remaining time is devoted to the study of Electricity and Magnetism. Students must take the Mechanics portion of the Physics "C" A.P. Examination at the end of the year.

Prerequisites: Minimum grade of 90% in 440/441 Physics for first three quarters.

Students must be concurrently enrolled in Calculus and receive the recommendation of 440/441 Physics teacher.

## ENVIRONMENTAL SCIENCE

**0462 A (1cr) 3/6 Juniors and Seniors Level 3**

**Environmental Science is an interdisciplinary subject for juniors and seniors that** 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 (Students may be taking the year-long Physics course concurrently). Class size will be limited.**

*Due to the nature of the course students must have the current instructor's approval and be interviewed by the instructor*

## BIOENGINEERING

**0482 A (1cr) 3/6 Sophomore, Juniors and Seniors Level 3**

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. **Course Criteria – open enrollment.** Honors level recommended for those interested in greater depth and/or workload.

**DEPARTMENT OF LANGUAGE**

**ITALIAN 1 0518 A (1cr) 6/6 Seniors Level 3**

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. Department chair approval is required.

**CHINESE I 519 A (1cr) 6/6 Freshmen Level 3**

This course introduces the student to Mandarin Chinese including the written characters, the Pinyin system for pronunciation, and culture from Chinese-speaking countries. Listening, speaking, reading, and writing skills are reinforced throughout the course. Evaluation includes oral and written assignments, exams, projects, and presentations. The course is open to incoming Freshmen who have shown they have the maturity to handle the complexities of the language. Students must have excellent memory skills to memorize the many Chinese written characters learned in this class. They must also have the aural ability to tell the differences between the four levels of voice pitch, called tones, used when speaking Chinese. Max class size: 15

\*Students who wish to take Chinese must pass a special placement test. Students choosing Chinese should indicate a 2nd choice language as well. Enrollment in Chinese is subject to Department Chair approval.

**ADVANCED SPANISH 1**

**0509 A (1cr) 6/6 All Students Level 3**

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 through oral responses, worksheets, workbook pages, quizzes and tests.

**SPANISH 1**

**0511 A (1cr) 6/6 All Students Level 3**

Spanish 1 introduces the student to four language skills: comprehension, speaking, reading, and writing. The students learn basic grammar and syntactical structures. An active vocabulary of 650 words can be expected by the end of the first year. Culture is taught as an integral part of the course. Students are evaluated daily on their ability to orally respond in class in Spanish. In addition, there are frequent quizzes, exams, oral exams, workbook exercises, and other assignments.

## **EXPLORATORY SPANISH**

**0505**    **A** (*1/2cr*)                      **3/6**    **Freshmen**                                      **Level 1**

This course will be designed to introduce students to basic Spanish vocabulary, phonetics and culture. This course will also aim to introduce empathy to the students about people from different backgrounds.

## **HONORS SPANISH II**

**0520**    **A** (*1cr*)                      **6/6**    **Sophomores**                                      **Level 4**

Honors Spanish 2 has as its goal the preparation of students for the Honors Spanish 3 course. Students enter the course with the assumption that they will study Spanish for four years and will intensively study history, literature, and composition in the fourth year.

Honors Spanish 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 projects, homework, class work, listening comprehension, writing compositions, grammar and vocabulary skills, oral proficiency and participation. Students will also be exposed to the customs and cultural practices of the Spanish speaking world.

Prerequisite: Advanced Spanish I or 96% of higher in Spanish 1 with teacher approval

## **SPANISH II**

**0521**    **A** (*1cr*)                      **6/6**    **Sophomores**                                      **Level 3**

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. Students that successfully complete this course will be qualified to take the Spanish 3 course.

Prerequisite: Spanish I

## **SPANISH II**

**0522**    **A** (*1cr*)                      **6/6**    **Sophomores**                                      **Level 2**

The 522 course follows the same guidelines as the 521 course. 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. Evaluation in this course is based on graded assignments, quizzes, tests, and participation. Students also learn about the key aspects of Hispanic culture. The students can elect Spanish III 531 with 93% and teacher approval.

Prerequisite: Spanish I

### **HONORS SPANISH III**

**0530** A (*1cr*) 6/6 Juniors Level 4

Honors Spanish 3 provides a continuation of advanced grammar and conversation in the target language. The students will attempt to employ vocabulary and grammar in short essays and discussions. There will be emphasis on conversion and verb tenses.

Prerequisite: Honors Spanish 2

### **SPANISH III**

**0531** A (*1cr*) 6/6 Juniors Level 3

Spanish 3 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 oral participation, quizzes class projects and midterm and final speaking exams Prerequisites: Spanish 2 with a 78% average or above and teacher approval.

### **PRE-ADVANCED PLACEMENT (PRE-AP) SPANISH**

**0534** A (*1cr*) 6/6 Juniors Level 4

This course is designed specifically for student desiring to enroll in Advanced Placement Spanish during their senior year, and the class will be conducted in the target language 90% of the time. The main focus of the course will be intensive grammar study of the Preterit, Imperfect, Future, Conditional, and Subjunctive verb tenses, all of which students will need to know for AP Spanish. Students will also be exposed to the specific target language tasks that comprise the AP Spanish Exam. These include analysis of print and audio texts, interpersonal emails and conversations, oral presentations, and persuasive essays.

Prerequisites: Must have a 93% in Honors Spanish 2 and teacher approval.

### **HONORS SPANISH IV: ADVANCED LANGUAGE DEVELOPMENT**

**0541** A (*1cr*) 6/6 Seniors Level 4

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. Spanish and Latin American history are explored. In conjunction with the cultural, historical readings, the student reviews and practices grammar. Evaluation will be based on examinations, daily conversations in Spanish in the classroom, and oral and written work. Prerequisites: Students must have a 93% or higher in Spanish III OR a 78% or higher in Honors Spanish III and teacher approval.

## **HONORS SPANISH V: CULTURE & HISTORY**

**0542 A (1cr) 6/6 Seniors Level 4**

This course has been created for the advanced student who has completed the third- or fourth-year Spanish program. The student has already covered the major grammar points and tenses in the Spanish language. This course which is conducted in the target language will help students to become more fluent in the spoken language through daily conversation. The student will also study the history, literature and culture of Spain, Mexico and Latin America in the target language. The student will also be able to concentrate on specific vocabulary relating to geography, history, and other cultural components.

Prerequisites: Students have completed Honors Spanish 3 with a 93% or higher OR completed Pre-AP Spanish, Honors Spanish IV: Advance Language Development of AP Spanish proficiency and the recommendation of their present Spanish teacher. This course will only be offered if there is a sufficient number of students registering.

## **ADVANCED PLACEMENT SPANISH**

**0550 A (1cr) 6/6 Seniors Level 5 CiHS**

A. P. 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 e-text, *Abriendo paso: Temas y Lecturas* by José M. Díaz is used throughout the year. Students are required to take the AP Spanish Language Exam in May.

Prerequisites: Must have successfully completed Pre-AP Spanish or Honors Spanish 4: Advanced Language Development OR a 96% in Honors Spanish 3 and teacher approval.

## **FRENCH I**

**0515 A (1cr) 6/6 All Students Level 3**

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.

## **FRENCH II**

**0525 A (1cr) 6/6 Freshmen and Sophomores Level 3**

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.

### **FRENCH III**

#### **0535 A (1cr) 6/6 Sophomores, Juniors, and Seniors Level 3**

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 on a daily basis. 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

### **HONORS FRENCH IV**

#### **0545 A (1cr) 6/6 Seniors Level 4**

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.

### **LATIN I**

#### **0517 A (1cr) 6/6 All students Level 3**

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.

### **LATIN II**

#### **0527 A (1cr) 6/6 Sophomores Level 3**

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.



### **HONORS LATIN III**

**0537 A (1cr) 6/6 Juniors and Seniors Level 4**

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.

### **HONORS LATIN IV**

**0547 A (1cr) 6/6 Seniors Level 4**

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.

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<b>DEPARTMENT OF BUSINESS</b>
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### **ACCOUNTING I**

**0635 A (1cr) 6/6 Juniors and Seniors Level 3**

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.

## **HONORS ACCOUNTING**

**0636 A (1cr) 6/6 Seniors Level 4**

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

## **INTRODUCTION to TECHNOLOGY for the 21<sup>st</sup> CENTURY**

**0675 S (1/2cr) 3/6 Freshmen Level 3**

This course gives students 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, Microsoft operating system and 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.

## **FINANCIAL ALGEBRA**

**0648 A (1cr) 6/6 Juniors and Seniors Level 3**

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.

Requirement: 80% or above in Algebra 2

## **PRINCIPLES OF ENTREPRENEURSHIP**

**0631 S (1/2cr) 6/6 Juniors and Seniors Level 3**

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 your 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.

### **PERSONAL FINANCE**

**0632 S (1/2 cr)                      6/6      Juniors and Seniors                      Level 3**

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.

### **BUSINESS LAW and ETHICS**

**0667 S (1/2 cr)                      6/6      Juniors and Seniors                      Level 3**

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.

### **DATA ANALYTICS I**

**677 S1 (1/2 cr)                      6/6      Juniors and Seniors                      Level 3**

Data Analytics is the science of examining raw data. By examination the individual can draw conclusions about the information. Better decisions from the analyzed data will help prove or disprove existing models or theories. The course will cover how different organizations make use of data analytics. The students will learn the stages of analyzing data. The students will use Microsoft Excel as the beginning application for data analysis. Microsoft Access will be used for Open-Ended responses to questionnaires and interviews. Data from the sports, business and sciences will be studied.

Students that have successfully completed Algebra I are permitted to take this course.

### **DATA ANALYTICS II**

**678 S2 (1/2 cr)                      6/6      Juniors and Seniors                      Level 3**

This course will continue the study and use of analyzed data. Students will study statistical analysis, multi-variate regression. Students will learn how to find and clean data for analysis. Students will learn how to present data using Tableau.

Students that have successfully completed Algebra 1 and Algebra 2 or who are currently enrolled in any Statistics course are eligible for enrollment.

**\*\* Seniors will have priority in enrollment in all Business course\*\***

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<b>DEPARTMENT OF ART</b>
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**STUDIO ART I****0710 A (1cr) 6/6 Freshmen Level 3**

Studio Art I 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.**

**STUDIO ART II****0721 A (1cr) 6/6 Sophomores Level 3**

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.**

**STUDIO ART III****0731 A (1cr) 6/6 Juniors Level 3**

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

Prerequisite: Studio Art II

**STUDIO ART IV****0741 A (1cr) 6/6 Seniors Level 4 CiHS**

Studio Art IV is designed to fulfill three goals:

1. Introduce new techniques of intaglio, drawing and design
2. Prepare an acceptable portfolio
3. Produce an opportunity to participate in the scholastic art competition and an opportunity for a “one man show” at the end of the school year.

Students have the opportunity of participating in the College in High School Program in conjunction with LaRoche College. **This meets the fine arts requirement.**

Prerequisite: Studio Art III

**PRINCIPLES OF ART AND DESIGN****0743 S (1/2 cr) 6/6 Sophomores, Juniors, and Seniors Level 3**

Art I 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. Student may not be currently or previously enrolled in a Studio Art level class. **This meets the fine arts requirement.**

<b>DEPARTMENT OF MUSIC</b>
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**VOCAL MUSIC I****0815 A (1cr) 6/6 Freshmen Level 3**

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.**

Prerequisite: None. However, because of the public nature of this course, the prospective student must always demonstrate exemplary conduct.

**INSTRUMENTAL MUSIC (BAND)****0881 A (1cr) 6/6 All students Level 3 or 4**

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. Also, because of the public nature of this course, the prospective student must have exemplary conduct.

**VOCAL MUSIC II (CONCERT CHOIR)****0882 A (1cr) 6/6 Sophomores, Juniors, and Seniors Level 3**

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. Because of the public nature of this course, the prospective student must demonstrate exemplary conduct at all times.

## **HONORS VOCAL MUSIC (CHAMBER SINGERS)**

**0884** A (1cr) 6/6 **Sophomores, Juniors, and Seniors** Level 4

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. Because of the public nature of this course, the prospective student must demonstrate exemplary conduct at all times.

## **HONORS INSTRUMENTAL MUSIC (HONORS BAND)**

**0887** A (1cr) 6/6 **Sophomores, Juniors and Seniors** Level 4

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.

Prerequisites: Approval by the director

**This meets the fine arts requirement.**

Prerequisites: Successfully pass audition

Audition music to be determined by director

## **JAZZ BAND**

**0888** A (1cr) 6/6 **All Students** Level 3 or 4

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.

## FUNDAMENTALS OF MUSICIANSHIP I

**0891 S1 (1/2cr) 6/6 Sophomores, Juniors, and Seniors Level 3**

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 aide 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.** Prerequisite: None.

## FUNDAMENTALS OF MUSICIANSHIP II

**0892 S2 (1/2 cr) 6/6 Sophomores, Juniors, and Seniors Level 3**

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)

## STRING ENSEMBLE

**0893 A (1cr) 6/6 All students Level 3**

*Instruments are not provided by the school.*

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).

## AUDIO ENGINEERING I – LIVE SOUND REINFORCEMENT

**0984 S1 (1/2 cr) 6/6 Juniors and Seniors Level 3**

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. ***Students must have approval from Mr. Wilson to take this course.*** This meets the fine arts requirement.

## AUDIO ENGINEERING 2 - RECORDING and PRODUCTION

**0985 S1 (1/2 cr) 6/6 Juniors and Seniors Level 3**

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. ***Students must have approval from Mr. Wilson to take this course.*** This meets the fine arts requirement.

## DEPARTMENT OF PHYSICAL EDUCATION

### PHYSICAL EDUCATION

**0911 A (1/2cr) 3/6 double period Freshmen Level 1**

The ultimate goal of Physical Education is to facilitate students in improving their quality of life through promotion of lifelong health enhancing physical activity. In today's society, "physical activity is not only a leisure time luxury it is an essential component of a healthy lifestyle for individuals of all ages" (Young 2003). At Central Catholic 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.

### HEALTH

**0924 A (1/2cr) 3/6 double period Sophomores Level 3**

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.

*Health will automatically be added to the schedule of all sophomores. Please do not enter Health on the Course Selection Card.*



## **A PERSONAL APPROACH TO PHYSICAL FITNESS AND NUTRITION**

**0935 S (1/2cr) 3/6 double period Juniors and Seniors Level 3**

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.

## **ADVANCED PHYSICAL FITNESS**

**0936 S (1/2cr) 3/6 double period Juniors and Seniors Level 3**

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.

## **ESSENTIAL CONCEPTS IN ATHLETIC TRAINING**

**0937 S (1/2cr) 6/6 Juniors and Seniors Level 3**

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 is required

## GENERAL REMINDERS

### ELECTIVES

Elective courses for which there are fewer than 10 registrants may be canceled.

### FEE PAYMENTS

Any student who still owes tuition as of June 8, 2020, will not be scheduled for classes for the 2020-2021 school year.

### FAILURES

Any student who fails a total of three full credit subjects, as of June 2020 will not be permitted to return to Central Catholic. Any student with failures totaling less than three credits may return to Central Catholic provided all of the courses failed are passed in an approved summer school program.

### AP COURSES

All students taking an AP course must take the AP exam. This is a course requirement.

## COURSE SELECTION GUIDE

### GRADUATION REQUIREMENTS

Religion	4 credits	Science	3 credits
English	4 credits	Foreign Language	2 credits
Social Studies	3 credits	Health / Phys Ed	1 credit
Mathematics	3 credits	Electives	5 credits
Fine Arts	.5 credit	Technology	.5 credits

One credit is equal to two semesters of course work.

### SENIORS

- a) All seniors must take at least six and a half credits. Every attempt will be made to balance each semester classes, although particular patterns of elective choices may necessitate having an unbalanced course load during one semester.
- b) Requirements:
  - One credit each in Religion and English (English pairings may be adjusted due to course conflicts)
  - Four and a half credits in elective courses

- c) For College in High School (CiHS) courses, the credits granted by the participating colleges are transferable to other colleges in many instances. Each college reserves the right, however, to make its own decision regarding acceptance.
- d) While most colleges/universities grant credit for successful performance (grade 3 or better) on the Advanced Placement exams, not all adopt the exact same policy. If you are enrolling in an AP course, you may wish to investigate the policy of those colleges/universities to which you are planning to apply.

## **JUNIORS**

- a) All juniors must take one credit in each of the following: Religion, English, Social Studies, Math and Science
- b) All juniors must take an equivalent of one and a half credit electives.
- c) For College in High School (CiHS) courses, the credit granted by the participating colleges is transferable to other institutions in many instances. Each college reserves the right, however, to make its own decision regarding acceptance.
- d) While most colleges/universities grant credit for successful performance (grade of 3 or better) on the Advanced Placement tests, not all adopt the exact same policy. If you are enrolling in an AP course, you may wish to investigate the policy followed by those colleges/universities to which you are planning to apply.

## **SOPHOMORES**

- a) All sophomores must take one credit each of the following six subjects: Religion, English, Social Studies, Math, Science, and Language
- b) All sophomores will take Health both semesters and a half credit of any elective.

**CENTRAL CATHOLIC HIGH SCHOOL**  
**SENIOR COURSE CARD 2020-2021**

Seniors must schedule two full credits in each of the academic areas marked with an asterisk, plus an **equivalent of four and a half credits of electives. Seniors will carry a minimum of 6.5 credits total.**

*This card is **due to your counselor by April 7, 2020.** You must register your courses on-line through PowerSchool no later than April 6, 2020.*

Department	Course Title	Course Number	Credit Total	Teacher Approval
<b>*RELIGION</b>			<b>1</b>	
<b>* ENGLISH</b>				
<b>SOCIAL STUDIES</b> <i>(elective)</i>				
<b>MATHEMATICS</b> <i>(elective)</i>				
<b>SCIENCE</b> <i>(elective)</i>				
<b>LANGUAGE</b> <i>(elective)</i>				
<b>ELECTIVE</b>				
<b>ELECTIVE</b>				
<b>ELECTIVE</b>				
<b>ELECTIVE</b>				
<b>TOTAL CREDITS</b>				

*I have reflected on my academic potential and needs and have concluded that the courses listed above represent the best choices for me. I realize that my course selections will be shared with my parent(s) for approval. I also recognize that my schedule will be finalized on August 1, 2020, and I will not be permitted to make any class changes after that date.*

**Student Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

**Parent/Guardian Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

**CENTRAL CATHOLIC HIGH SCHOOL**  
**JUNIOR COURSE CARD 2020-2021**

Juniors must schedule **five year-long courses** in each of the academic areas marked with an asterisk, plus an equivalent of **one and a half credits of electives**. **Juniors will carry a minimum of 6.5 credits total**.

*This card is due to your counselor by April 7, 2020. You must register your courses on-line through PowerSchool no later than April 6, 2020.*

Department	Course Title	Course Number	Credit Total	Teacher Approval
*RELIGION		033	1	N/A
*ENGLISH				
*SOCIAL STUDIES				
*MATHEMATICS				
*SCIENCE				
LANGUAGE (elective)				
ELECTIVE				
ELECTIVE				
ELECTIVE				
ELECTIVE				
<b>TOTAL CREDITS</b>				

*I have reflected on my academic potential and needs and have concluded that the courses listed above present the best choices for me. I realize that my course selections will be shared with my parent(s) for approval. I also recognize that my schedule will be finalized on August 1, 2020, and I will not be permitted to make any class changes after that date.*

**Student Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

**Parent/Guardian Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

**CENTRAL CATHOLIC HIGH SCHOOL**  
**SOPHOMORE COURSE CARD 2020-2021**

Sophomores must schedule **six year-long courses** in each of the academic areas marked with an asterisk. **Additionally, each sophomore will automatically be scheduled for a half credit of Health and an additional half credit elective. Sophomores will carry a minimum of 7 credits total.**

***This card is due to your counselor by April 7, 2020. You must register your courses on-line through PowerSchool no later than April 6, 2020.***

Department	Course Title	Course Number	Credit Total	Teacher Approval
*RELIGION		022	1	N/A
*ENGLISH				
*SOCIAL STUDIES				
*MATHEMATICS				
*SCIENCE				
* LANGUAGE				
*HEALTH		0924	1/2	N/A
ELECTIVE				
ELECTIVE				
ELECTIVE				
ELECTIVE				
<b>TOTAL CREDITS</b>				

*I have reflected on my academic potential and needs and have concluded that the courses listed above represent the best choices for me. I realize that my course selections will be shared with my parent(s) for approval. I also recognize that my schedule will be finalized on August 1, 2020, and I will not be permitted to make any class changes after that date.*

**Student Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

**Parent/Guardian Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

Step 1: Log on to PowerSchool and onto Navigation List and click Course Registration

Step 2: Click the pencil to see course choice- check the appropriate course number for each course

- 10<sup>th</sup> grade- minimum of 7 credits---maximum of 8 credits
- 11<sup>th</sup> grade- minimum of 6.5 credits---maximum of 8 credits
- 12<sup>th</sup> grade- minimum of 6.5 credits---maximum of 8 credits

Step 3: Check your selection---click submit

**PowerSchool**

**Navigation**

- Grades and Attendance
- Grade History
- Attendance History
- Teacher Comments
- School Bulletin
- Class Registration
- My Calendars

**Welcome to the Central Catholic High School Class Registration System for 2020-2021**

View course requests

<b>Religion</b>	Religion II 0022 - 1 credits		
<b>English</b>		Click the edit button to request a course →	
<b>Electives</b>		Click the edit button to request a course →	
<b>Social Studies</b>		Click the edit button to request a course →	
<b>Mathematics</b>		Click the edit button to request a course →	
<b>Science</b>		Click the edit button to request a course →	
<b>Foreign Language</b>		Click the edit button to request a course →	
<b>Health</b>			

Update Available!  
Available on the App Store

## CENTRAL CATHOLIC COURSES APPROVED BY THE NCAA ELIGIBILITY CENTER

As part of the review process, students will need to show adequate levels of academic achievement in high school based on their SAT/ACT scores and the NCAA Core GPA as calculated by the NCAA using only approved high school courses. Below are the Central Catholic courses that have been approved by the NCAA to meet credit requirements and to calculate the NCAA Core GPA. **Any course offered at Central Catholic but not listed below has not been approved by the NCAA and cannot be used to meet NCAA academic requirements.**

### CENTRAL CATHOLIC COURSES APPROVED BY THE NCAA ELIGIBILITY CENTER (2019)

As part of the review process, students will need to show adequate levels of academic achievement in high school based on their SAT/ACT scores and the NCAA Core GPA as calculated by the NCAA using only approved high school courses. Below are the Central Catholic courses that have been approved by the NCAA to meet credit requirements and to calculate the NCAA Core GPA. **Any course offered at Central Catholic but not listed below has not been approved by the NCAA and cannot be used to meet NCAA academic requirements.**

#### English Courses

Exploring Literature and Writing I & II  
Exploring Literature and Writing Honors I & II  
Survey of American Literature  
Honors Survey of American Literature  
AP English Language and Composition  
AP English  
Survey of World Literature  
Honors Survey of World Literature  
World Literature: Elective Courses  
Argument and Debate  
Creative Writing  
British Literature: Elective Courses  
Journalism and Newspaper Design

#### Social Studies Courses

Human Geography  
AP Human Geography  
World History I  
World History II  
Honors World History II  
United States History  
Honors United States History  
AP United States History  
AP European History  
Honors American Government

AP American Government  
History of Pittsburgh and Western PA  
Psychology  
History of Modern America  
Sociology  
Russian History and Culture: 1370-1922  
Story of World War II

#### Mathematics Courses

Algebra I  
Advanced Algebra I  
Honors Algebra I  
Algebra II  
Honors Algebra II  
Advanced Algebra II  
Honors Geometry  
Geometry  
Advanced Geometry  
Trigonometry  
Pre-Calculus  
Honors Trig/Math Analysis  
Honors Calculus  
AP Calculus  
Probability and Statistics  
AP Statistics  
AP Computer Science



## **Science Courses**

Biology

Honors Biology

AP Biology

Biotechnology/Bioengineering

Honors Biotechnology/Bioengineering

Chemistry

Honors Chemistry

Chemistry II

Honors Organic Chemistry

AP Chemistry

Environmental Science

Physics

Honors Physics

AP Physics

## **World Language Courses**

Italian I

French I

French II

French III

Honors French IV

College French

AP French

Latin I

Latin II

Latin III

Honors Latin IV

Spanish I

Advanced Spanish I

Spanish II

Honors Spanish II

Spanish III

Honors Spanish III

Honors Spanish IV

Honors Spanish V

Pre-AP Spanish

AP Spanish

Chinese I