ENGLISH

010 Sophomore English

Grade Level: Sophomore
Length: One Year
Credit: 1.0 credit
Prerequisite: None

This course will introduce students to a variety of genres in literature, to the processes of effective aesthetic reading, to the work of discussion and performance as a response to literature, and to the processes of writing in a variety of forms and for a variety of purposes. In the first semester, all students will read THE ODYSSEY and OEDIPUS REX. In the second semester, all students will read THE TEMPEST and a second major work. The other readings for the course, including the major works from which individual instructors may choose, include THE WASTELAND, ANTIGONE, I KNOW WHY THE CAGED BIRD SINGS, HUCKLEBERRY FINN, A DEATH IN THE FAMILY, DEATH OF A SALESMAN, as well as a selection of poetry, short stories, and essays.

020 Junior English

Grade Level: Junior
Length: One Year
Credit: 1.0 credit
Prerequisite: Sophomore English

The work of developing skill in aesthetic reading and in discussion, performance, and writing will continue at higher levels. Students will be expected to develop greater independence as readers and writers, to be more conscious of their own processes as readers and writers. All students will read a core of poems selected by all of the instructors and HAMLET in the first semester. In the second semester, all students will read a major novel. Other literature will be selected from such works as CRIME AND PUNISHMENT, A PORTRAIT OF THE ARTIST AS A YOUNG MAN, THE NORTON ANTHOLOGY OF POETRY, THE NORTON ANTHOLOGY OF SHORT FICTION, the ALCESTIS, and Biblical selections.
FIRST SEMESTER OFFERINGS

Senior English (Required)

Students must be enrolled in an English class each semester of their senior year.

030 American Fiction: 1850 to the Present

Grade Level: Senior  
Length: One Semester  
Credit: .5 credit  
Prerequisite: Junior English

This course is concerned with the development of the American short story and novel, both as historical, social, and philosophical commentaries and as literary genres. Of particular concern will be those literary movements that have defined and continue to influence American fiction: namely, Romanticism, Realism, Naturalism, and Existentialism. Primary readings will focus upon Sherwood Anderson, William Faulkner, Ernest Hemingway, and John Steinbeck.

031 Galileo: Science and Religion

Grade Level: Senior  
Length: One Semester  
Credit: .5 credit  
Prerequisite: Junior English

One of the major issues in Western thought--the conflict between science and religion--will be studied by focusing on the trial of Galileo in the 17th Century. The backgrounds in science, art, and literature of the Renaissance, and the subsequent exploration of the theme in such works as Brecht’s play Galileo will be considered.

032 Literature of War

Grade Level: Senior  
Length: One Semester  
Credit: .5  
Prerequisites: Junior English

Through the reading and discussion of works such as THE ILIAD, TROJAN WOMEN, THE AENEID, TROILUS AND CRESSIDA, ARMS AND THE MAN, THE SUN ALSO RISES, and CATCH 22, students will examine the essential questions of war (what it is, what it means, how it ought to be conducted, what part--if any--it ought to play in our existence); questions of the uses of imaginative literature as an integrating, humanizing power; and questions concerning the pain, the fear, the privation, the glory and bravery, the guilt, and victimizations of both those who make and suffer war.
033  **Portraits of Creativity**

Grade Level: Senior  
Length: One Semester  
Credit: .5  
Prerequisite: Junior English

Students will examine the work and lives of a number of creative people from a variety of fields, including both the arts and the sciences. Readings will include accounts of the work and lives of James Joyce, Sylvia Plath, Einstein, Picasso, the mathematician Poincare, Mozart, and Van Gogh. Students will also read about creativity from a variety of perspectives, including that of the psychiatrist Rollo May.

034  **The Russian Consciousness in Literature**

Grade Level: Senior  
Length: One Semester  
Credit: .5 credit  
Prerequisite: Junior English

What qualities, what perceptions in the Russian consciousness might account for Russia’s rapid and significant change from an apparent backwater of Europe to a major world power in the twentieth century? To explore these and other questions, students will study a variety of pre- and post-Revolutionary Russian writers, as well as study the country’s art, music, and film, as such works may express and give insight into the Russian consciousness.

SECOND SEMESTER OFFERINGS

040  **Americans in Paris**

Grade Level: Senior  
Length: One Semester  
Credit: .5 credit  
Prerequisite: Junior English

"Paris in the Twenties" has become famous for the American expatriates such as Hemingway, Fitzgerald, Gertrude Stein, and others who made a trip to Paris a necessary pilgrimage for the American artists. But what was Paris before World War I? Students will read works by and about Americans in Paris before and after the War to gain a balanced picture of the arts and letters in America and Europe in this most important and exciting period.
041 Dramatic Literature: The Theater as Microcosm

Grade Level: Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Junior English

This course will study a variety of dramatic literature, ranging over many countries and historical periods, in an attempt to discover why the theater experience seems so often to present a microcosm of our world, a microcosm often seeming to be more real, more alive than our own world. In addition to printed literature, the course will examine film, and if possible, students will attend live theater performances to increase their understanding of the compelling qualities of dramatic expression.

042 Images of Horror

Grade Level: Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Junior English

To determine what understanding art seeks in images of horror, students will read typical pieces of horror literature as well as traditional literature not ordinarily classified as horror stories, but nonetheless involving monstrous beings and actions. A partial list of readings includes Frankenstein by Mary Shelley, Prometheus Bound by Aeschylus, Dracula by Bram Stoker, The Turn of the Screw by Henry James, Conrad's Heart of Darkness, and Shakespeare's Macbeth.

043 Modern American Poetry

Grade Level: Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Junior English

This course is concerned with the evolution of American poetry from Walt Whitman to the present, and particularly with the development of a distinctive American voice. Students will begin with a review of prosody (i.e., denotation, connotation, figurative language, tone, symbol, etc.), providing the tools to examine confidently recent, experimental poetic expression. The course weaves two poetic threads: the masters (Walt Whitman, T.S. Eliot, Ezra Pound, Wallace Stevens, Robert Frost) and the contemporaries (Robert Bly, Sylvia Plath, Galway Kinnell, William Stafford, Denise Levertov, Robert Lowell, Elizabeth Bishop).
**Utopia/Anti-Utopia**

Grade Level: Senior  
Length: 2nd Semester  
Credit: 1.0 (.5 in English/.5 in Social Studies)  
Prerequisites: Junior English/World Studies

This course, formerly offered as only an English elective, will be offered as a team-taught course, scheduled for five periods in a six-day cycle. **This course will meet both English and Social Science Senior graduation requirements.** Students will read classical and modern fiction and factual materials that examine the best of all possible worlds and the worst. Early in the semester, students will write a description of their own idea of utopia. The course will move from there to consider the ideas and experiences of others: examining those ideas from the perspectives of literature, sociology, psychology, history, and political philosophy. Readings will include selections from FAMOUS RENAISSANCE UTOPIAS (including More’s UTOPIA), BRAVE NEW WORLD, WALDEN, the REPUBLIC, LORD OF THE FLIES, and a number of other works from which students will choose independently.

**Yeats and the Irish Tradition**

Grade Level: Senior  
Length: One Semester  
Credit: .5  
Prerequisite: Junior English

This course will concern itself less with a specific ethnic literature than with an important dimension of modernism. We will read works by W.B. Yeats, Sean O’Casey, George Bernard Shaw, J.M. Synge, James Joyce, and Samuel Beckett -- writers who have shaped not only Irish literature but also 20th century literature in all of the western world.

**FINE ARTS**

**110 Advanced Placement Music Theory**

Grade Level: Junior/Senior  
Length: One Year  
Credit: 1.0 credit Pass/Fail option  
Prerequisite: None

This course is designed specifically to prepare students to take the A.P. Music Theory test. Students will learn fundamental terminology and notation of intervals, scales, triads, chords, key signatures, rhythm and meter, transposition, and visual analysis. Students will also learn to make judgments about melody, harmony, tonality, rhythm and meter, texture, small and large forms, and errors in
performance, as well as to recognize particular compositional processes such as harmonic functions, cadence or scale types, motivic transformations, and sequential patterns according to their corresponding historical period. Although the focus of this course is primarily geared toward the study of harmony, basic contrapuntal techniques such as canon, round, fugue, passacaglia, and fantasie will be included. A strong background in music reading is highly recommended.

100(F) Concert Band
Grade Level: Sophomore/Junior/Senior
Length: One - Two Semester(s)
Credit: .5 - 1.00 credit Pass/Fail option
Prerequisite: Play traditional wind/percussion instrument at basic level

Students enrolled in Concert Band will be provided the opportunity to examine, rehearse, and perform varied styles of band music of both Western and non-Western composers in a laboratory setting. Experiences in chamber music, symphonic band, and pep band will be included in the class. In addition, materials pertaining to music history, theory, aural skills, and musicianship will be presented, both from a scientific as well as an artistic approach. (Students enrolled in the Music Program are eligible to participate in Jazz Ensemble and either the Blue or Silver Pep Band.)

104(F) Concert Orchestra
Grade Level: Sophomore/Junior/Senior
Length: One - Two Semester(s)
Credit: .5 - 1.00 credit Pass/Fail option
Prerequisite: Play stringed instrument (violin, viola, ’cello, or string bass) at basic level

Students enrolled in Concert Orchestra will be provided the opportunity to examine, rehearse, and perform varied styles of string music of both Western and non-Western composers in a laboratory setting. Experiences in chamber ensemble, string orchestra, and full symphony orchestra will be included in the class. In addition, materials pertaining to music history, theory, aural skills, and musicianship will be presented, both from a scientific as well as an artistic approach. (Students enrolled in the Music Program are eligible to participate in Strolling Strings.)

106(F) Concert Choir
Grade Level: Sophomore/Junior/Senior
Length: One - Two Semester(s)
Credit: .5 - 1.00 credit Pass/Fail option
Prerequisite: No prerequisite/Music reading skills helpful
This course provides students with the opportunity to explore Music and the Fine Arts in a laboratory setting. Included will be the development of the fundamentals of ensemble performance: tone, intonation, balance and precision of execution; interpretation of the score; tempo, style of enunciation/diction, phrasing, and dynamics. In addition, materials pertaining to music history, theory, aural skills, and musicianship will be presented, both from a scientific as well as an artistic approach. (Students enrolled in the Music Program are eligible to participate in Swing Choir.)

120  
**Art Design I**

Grade Level: Sophomore/Junior/Senior  
Length: One Semester  
Credit: .5 credit  
Pass/Fail option  
Prerequisite: None

This course will provide students with the opportunity to create both two and three dimensional design solutions and the option of studying drawing. Through the examination of various styles of art and the investigation of the elements and principles of design, the course will prepare students to make aesthetic choices throughout life.

121  
**Ceramics**

Grade Level: Sophomore/Junior/Senior  
Length: One Semester  
Credit: .5 credit  
Pass/Fail option  
Prerequisite: None

This course will provide students with the opportunity to explore each of the methods of handbuilding as well as to be introduced to throwing on the potter’s wheel. Students will experience the characteristics of clay, learn terminology, practice proper technique, and use the elements and principles of design as a basis for creating and evaluating ceramicware.

123  
**Photography**

Grade Level: Junior/Senior  
Length: One Semester  *(Offered Second Semester only)*  
Credit: .5 credit  
Pass/Fail option  
Prerequisite: None

This course will provide students with the opportunity to obtain a general overview of the uses and history of photography. The course is specific to black and white photography. Students will learn to use photographic and aesthetic terminology and obtain practice in picture taking, film processing, photo printing, and professional display techniques. Through these experiences, students will gain confidence in both creating and evaluating photography as an
art form. Students must supply their own 35mm SLR cameras and batteries.

FOREIGN LANGUAGE

201 Latin I
Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: None

The student receives a solid foundation in Latin grammar and vocabulary through the study of syntax and etymology. Through reading and translating Latin stories, the student is introduced to Roman mythology and culture in order to gain a sense of his relevant past.

202 Latin II
Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: Latin I

A broader range of vocabulary and the more complex aspects of Latin grammar are studied. Selected Latin phrases, terms, and abbreviations commonly used in English are studied. Through readings from Caesar’s Gallic Wars and Livy, the student comes into contact with achievements of great human significance, such as Roman law, poetry, architecture, and models of government.

203 Latin III
Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: Latin II

This prose course is based on Cicero’s orations and selected stories from other Roman authors. Roman government and society are also studied.

204 Latin IV
Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: Latin III
This poetry course provides for intensive study of the Roman poets Virgil (Books 1-6 Aeneid) and Ovid. Roman daily life and culture in the Age of Augustus are also studied.

211 French II

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: French I

Students will be expected to be able to read, speak, and write about topics such as travel, career interests, personal ailments, car repairs, and official business. The student’s proficiency at the end of the course should be at the middle intermediate level as set down by the ACTFL oral proficiency standards.

212 French III

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: French II

Students will be expected to be able to read, speak, and write about such topics as the comparative political systems of France and French-speaking countries, the educational systems as set up under colonial France and after liberation vs. the American system. The student’s proficiency level at the end of the course should be at the beginning advanced level as set down by the ACTFL oral proficiency standards.

213 French IV

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: French III

Students will be expected to be able to read, speak, and write about topics in French and francophone literature (Quebec, Tahiti, Senegal, and Cameroons). They should be able to converse about science, history, and current events. Individual and team projects will afford the students the ability to research and exchange knowledge with one another. The student’s proficiency at the end of the course should be at the advanced level as set down by the ACTFL oral proficiency standards.
Spanish I

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: None

Students will be expected to be able to read, speak, and write about topics such as school, family, shopping, the weather, and personal interests such as sports, music, or travel. The student’s proficiency at the end of the course should be at an upper beginning level as set down by oral proficiency standards of ACTFL.

Spanish II

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: Spanish I

Students will be expected to be able to read, speak, and write about topics such as travel, career interests, personal ailments, car repairs, and official business. The student’s proficiency at the end of the course should be at the middle intermediate level as set down by the ACTFL oral proficiency standards.

Spanish III

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: Spanish II

Students will be expected to be able to read, speak, and write about topics such as the comparative political systems of Spanish speaking countries, and the Spanish educational system vs. the American system. The student’s proficiency level at the end of the course should be at the beginning advanced level as set down by the ACTFL oral proficiency standards.

Spanish IV

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: Spanish III

Students will be expected to be able to read, speak, and write about topics in Spanish and Latin American literature, science, history, and/or current events. The student’s proficiency level at the end of the course should be at the
advanced level as set down by the ACTFL oral proficiency standards.

230 **German I**

Grade Level: Sophomore/Junior/Senior  
Length: One Year  
Credit: 1.00 credit Pass/Fail option  
Prerequisite: None

Students will be expected to be able to read, speak, and write about topics such as school, family, shopping, the weather, and personal interests such as sports, music, or travel. The student’s proficiency at the end of the course should be at an upper beginning level as set down by the oral proficiency standards of ACTFL.

231 **German II**

Grade Level: Sophomore/Junior/Senior  
Length: One Year  
Credit: 1.00 credit Pass/Fail option  
Prerequisite: German I

Students will be expected to be able to read, speak, and write about topics such as travel, career interest, personal ailments, car repairs, and official business. The student’s proficiency at the end of the course should be at the middle intermediate level as set down by ACTFL oral proficiency standards.

232 **German III**

Grade Level: Sophomore/Junior/Senior  
Length: One Year  
Credit: 1.00 credit Pass/Fail option  
Prerequisite: German II

Students will be expected to be able to read, speak, and write about topics such as the comparative political systems of German-speaking countries, and the German educational system vs. the American system. The student’s proficiency at the end of the course should be at the beginning advanced level as set down by ACTFL oral proficiency standards.

233 **German IV**

Grade Level: Sophomore/Junior/Senior  
Length: One Year  
Credit: 1.00 credit Pass/Fail option  
Prerequisite: German III

Students will be expected to be able to read, speak, and write about topics in German literature, science, history, and
current events. The student's proficiency at the end of the course should be at the advanced level as set down by the ACTFL oral proficiency standards.

240  

**Japanese I**

**Grade Level:** Sophomore/Junior/Senior  
**Length:** One Year  
**Credit:** 1.00 credit Pass/Fail option  
**Prerequisite:** None

The Japanese language is introduced through the basic skills of speaking, listening, reading, and writing. Special emphasis is placed on the development of single grammatical construction necessary for simple communications. Students are given an introduction to Japanese culture.

241  

**Japanese II**

**Grade Level:** Sophomore/Junior/Senior  
**Length:** One Year  
**Credit:** 1.0 credit Pass/Fail option  
**Prerequisite:** Japanese I

A continuation of the first year course not only expands on the basic skills, but places further emphasis on vocabulary building and written and oral self-expression. The study of Japanese culture is continued as an integral part of the course.

242  

**Japanese III**

**Grade Level:** Sophomore/Junior/Senior  
**Length:** One Year  
**Credit:** 1.0 credit Pass/Fail option  
**Prerequisite:** Japanese II

This course will stress oral and written communication. The students will be introduced to literature in Japanese. The study of Japanese culture is continued as an integral part of the course.

250  

**Russian I**

**Grade Level:** Sophomore/Junior/Senior  
**Length:** One Year  
**Credit:** 1.00 credit Pass/Fail option  
**Prerequisite:** None

Students will learn Cyrillic script and Russian phonetics. They will practice reading, writing, and conversation on everyday themes at an elementary level and they will be able to ask and respond to any possible question relative to the content of elementary reading material. Successful completion
of Russian I is required for eligibility for participation in the US/USSR Partnership Program.

251 Russian II

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: Russian I

Students will learn more complex grammatical structures and expand their vocabulary through reading and discussion of literature and popular periodicals. They will practice translating, interpreting, and speech-making at an intermediate level. They will begin to learn the vocabulary and conventions of mathematical and scientific discourse in Russian. High competency in Russian II is required for eligibility for participation in the US/USSR Partnership Program.

252 Russian III

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.00 credit Pass/Fail option
Prerequisite: Russian II

Students will learn advanced Russian grammar and word formation. The course will include reading and discussion of literary and scholarly texts in Russian. The primary emphasis toward the end of the year will be on the vocabulary and conventions of mathematics and scientific discourse.

MATHMATICS

301 Geometry I

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Recommendation of Instructor

This is the first semester of a two semester sequence of study that will include the study of plane and solid geometry. Emphasis will be placed on the concepts of proof and problem solving as well as topics necessary for the advanced study of mathematics.
302  Geometry II

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Recommendation of Instructor

This is the second semester of a two semester sequence that will include the study of plane and solid geometry. Emphasis will be placed on the concepts of proof and problem solving as well as topics necessary for the advanced study of mathematics.

303(F) Analysis I
304(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Recommendation of Instructor

The first of a four semester pre-calculus sequence of courses including content drawn from advanced algebra, trigonometry, college algebra, and analytic geometry.

305(F) Analysis II
306(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Recommendation of Instructor

The second of a four semester pre-calculus sequence of courses including content drawn from advanced algebra, trigonometry, college algebra, and analytic geometry.

307(F) Analysis III
308(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Recommendation of Instructor

The third of a four semester pre-calculus sequence of courses including content drawn from advanced algebra, trigonometry, college algebra, and analytic geometry.

309(F) Analysis IV
310(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Recommendation of Instructor
The fourth of a four semester pre-calculus sequence of courses including content drawn from advanced algebra, trigonometry, college algebra, and analytic geometry.

311(F) AP Calculus I
312(S)
Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Recommendation of Instructor

The first of a three semester sequence which will include the material covered in the Advanced Placement BC Calculus syllabus. In addition to some concepts from analytic geometry, this course will cover the foundations of calculus including concepts and applications of limits, continuity, the derivative, and the integral. Polynomial, rational, and transcendental functions will be studied.

313(F) AP Calculus II
314(S)
Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Analytic Geometry/Introduction to Calculus

The second of a three semester sequence which will include the material covered in the Advanced Placement BC Calculus syllabus. Topics will include concepts and applications of advanced techniques of integration, improper integrals, indeterminant forms, and parametric and polar equations.

315(F) AP Calculus III
316(S)
Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .5 credit
Prerequisite: Advanced Placement Calculus I

The third of a three semester sequence which will include the material covered in the Advanced Placement BC Calculus syllabus. Topics will include concepts and applications of hyperbolic functions, sequences and series, vectors, and solid analytic geometry.

317 Advanced Geometry

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Be enrolled in or have completed Analysis II

A study of advanced Euclidean geometry and non-Euclidean geometries, with topics selected from finite geometry,
spherical and hyperbolic geometries, geometric constructions by Euclidean and Mascheroni methods, conics, the Golden rectangle, and transformational geometry.

319 Differential Equations

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Multi-Variable Calculus or Recommendation of Instructor

The course includes the study of first and higher order differential equations, linear differential equations, homogeneous and non-homogeneous equations, differential operators, and LaPlace transformations.

321 Math Topics, A "Mathematica®" Approach

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail Option
Prerequisite: Enrollment in Calculus. Familiarity with a Macintosh computer is advisable. Permission of the instructor is required.

The focus of this course will be to explore topics found in mathematics. Students and faculty will use the computer environment made possible by the "MATHEMATICA" software to view these topics from multiple perspectives. Prior experience in programming is helpful but not required since the course will include training on the software. Enrollment will be limited by the size of the Macintosh II laboratory.

322 Multi-Variable Calculus

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Advanced Placement Calculus II

Topics will include a study of functions of several variables, applications of partial derivatives, multiple integrals, line integrals, and an introduction to differential equations.

323 Number Theory

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Analysis III Current math teacher’s consent.

The course covers a good part of traditional undergraduate level number theory including the study of prime numbers and
divisibility of integers, solving congruence, Diophantine Equations and introduction of other extended number theory concepts. The material will be delivered with full mathematical rigor including logical proof in addition to intuitive understanding of number phenomena. The presentation can be viewed as a continuation of the algebra portion of the secondary school mathematics.

324 Problem Solving
Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Be enrolled in or have completed Analysis II

A study of various types of problems that occur in mathematics, including MAA problems, Illinois Mathematics League problems, the study of Pascal's Triangle, and selected topics from geometry, number theory, and probability.

350 Introduction to Computer Science
Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Be enrolled in or have completed Analysis II

An introduction of programming and computer science using the Pascal language. A significant amount of the AP Computer Science A/B syllabus will be discussed.

351 AP Computer Science
Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Computer Languages-Pascal or Recommendation of Instructor

This course will complete the AP Computer Science AB syllabus. Topics may include: pointer variables, recursion, stacks, queues, trees, linked lists, advanced programming techniques including advanced sorts and searches. In addition, each student will develop a major program.

352 Computer Seminar
Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Computer Applications or Recommendation of Instructor
This class will explore advanced programming languages, such as C and Prolog. In addition, the class will collectively produce a major program using one of these languages.

399 Geometry/Analysis II

Grade Level: Sophomore
Length: One Year
Credit: 1.0
Prerequisite: Recommendation of Instructor

This course includes the study of plane and solid geometry with an emphasis on problem posing, problem solving and proof. It will merge with Analysis III to continue the topics in the precalculus sequence.

628 Science, Society and the Future

Grade Level: Senior
Length: One Semester
Credit: 1.0 (.5 Social Science and an additional .5 from either Science or Mathematics) Pass/Fail Option
Prerequisite: None

Exploration of issues which result from the collision of science and society is the focus of this course. The investigations will be lead by a team of instructors from science, mathematics and social science. The roots, controversies and ethical implications of each issue will be examined in a "think tank" environment with special attention given to analysis of the behavior of complex systems using basic science knowledge and mathematical modeling as well as the "future" implications of possible solutions.

PHYSICAL EDUCATION

401(F) Physical Education
402(S)

Grade Level: Sophomore or Junior year
Length: One Year if not combined with Health requirement
Credit: Pass/Fail - no credit issued.
Prerequisite: None

This course consists of an integrated curriculum of individual and dual sports, team activities, and the teaching of concepts and exercises promoting health-related fitness. Helping students incorporate physical activities they enjoy into their daily lifestyle is stressed.
Physical Education: Lifetime Activities

403(F) P.E. Lifetime Activities I (1st quarter)
404(F) P.E. Lifetime Activities II (2nd quarter)
405(S) P.E. Lifetime Activities III (3rd quarter)
406(S) P.E. Lifetime Activities IV (4th quarter)

Grade Level: Junior/Senior
Length: Minimum Nine Weeks. Register for one Quarter or one semester
Credit: .25 credit Pass/Fail option
Prerequisite: None

This course will focus on activities which may be pursued and enjoyed for a lifetime, and which will enhance health and fitness. Regular class instruction and practice of skills, independent research study of specific activities, independent practice time, interdisciplinary projects, individualized contracts, and choice of activity will all allow for an in-depth, personalized physical education experience.

Activities Offered:

Students must select one activity from the following for each 4.5 week unit:

First Quarter:  Unit 1 - Golf or Tennis
               Unit 2 - Cycling or Orienteering

Second Quarter:  Unit 1 - Aerobic Super Circuit or Instructional Swimming
                Unit 2 - Racquet Games or Fitness Swimming

Third Quarter:  Unit 1 - Weight Training or Cross-Country Skiing
               Unit 2 - Racquet Games or Aerobic Supercircuits

Fourth Quarter:  Unit 1 - Triathlon or Instructional/Fitness Swimming
                Unit 2 - Golf or Tennis.

410(F) Health
411(S)

Grade Level: Sophomore/Junior
Length: One Semester
Credit: Pass/Fail Only - no credit issued.
Prerequisite: None

Throughout the semester, students will be exposed to a variety of topics relating to personal and community health. This exposure will be accomplished through lectures, group
discussions, other participatory group activities, self-assessment, and research.

420(F) Driver Education (Classroom portion only)
421(S)

Grade Level: Sophomore/Junior
Length: One Semester
Credit: Pass/Fail Only - no credit issued.
Prerequisite: None

This course is designed to help students develop sound judgments and proper mental attitudes for the safe operation of motor vehicles. Students are exempt from this graduation requirement if an approved classroom program is taken at their home high school or from a private state-approved agency.

SCIENCE

501 Sophomore Chemistry

Grade Level: Sophomore
Length: One Year
Credit: 1.0 credit
Prerequisite: None

A complete introductory college course in chemistry investigating topics such as inorganic structure, chemical equilibrium, reaction kinetics, and chemical thermodynamics through extensive laboratory activities. Students use the computer for acquisition and handling of scientific data.

521 Sophomore Physics

Grade Level: Sophomore
Length: One Year
Credit: 1.0 credit
Prerequisite: None

Presents the foundational concepts of physics and the skills needed to investigate physical systems. Involves observation, data analysis, model building, and prediction. Emphasizes problem solving ability as the principal test of understanding. Basic content is mechanics, thermodynamics, light, and electricity and magnetism.

541 University Biology

Grade Level: Junior
Length: One Year
Credit: 1.0 credit
Prerequisite: Sophomore Chemistry, Sophomore Physics
University Biology is a survey course for students with a background in chemistry and physics. Topics include molecular biology, cell biology, ecology, and the genesis and diversity of organisms. Extensive laboratory experiences are provided and concepts are developed by the inquiry method.

502 Advanced Chemistry

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Sophomore Chemistry

This course continues the study of inorganic chemistry that began in Sophomore Chemistry. Concepts introduced in Sophomore Chemistry are reviewed and expanded upon. Emphasis is on lecture and problem-solving as well as laboratory experiments. This course is strongly recommended for those students who plan on taking the AP Chemistry exam.

504 * Organic Chemistry I

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Sophomore Chemistry

505 * Organic Chemistry II

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Organic Chemistry I

* These courses are designed as an introduction to the main functional groups of organic chemistry and their reactions. Emphasis is placed on understanding the theory behind organic reactions. Experiments are included to introduce laboratory techniques as well as demonstrate concepts. State-of-the-art instruments will be utilized in the laboratory.

506 Biochemistry

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Organic Chemistry I

Many fundamental and interesting applications of chemistry to life will be discussed and studied in the laboratory. Topics include the structure of carbohydrates, lipids, amino acids, proteins, and vitamins as well as the metabolic pathways by which these compounds are interconverted.
522 **Advanced Physics**

Grade Level: Junior/Senior  
Length: One Semester  
Credit: .5 credit  
Prerequisite: Sophomore Physics

This course completes the study of basic physics concepts begun in Sophomore Physics. It reviews already covered topics and covers additional material in mechanics, thermodynamics, electricity and magnetism, and modern physics. The emphasis throughout is on problem solving techniques. This course is strongly recommended for students who intend to take the AP Physics B exam.

523 **Calculus-based Physics - Mechanics**

Grade Level: Junior/Senior  
Length: One Semester  
Credit: .25 credit  
Prerequisite: Sophomore Physics/Introduction to Calculus

524 **Calculus-based Physics - Electricity/Magnetism**

Grade Level: Junior/Senior  
Length: One Semester  
Credit: .25 credit  
Prerequisite: Sophomore Physics/Introduction to Calculus

* Calculus-based physics follows the typical sequence of a University Physics course. The first semester is devoted to topics in mechanics, while the second semester develops the ideas of electricity and magnetism. The major emphasis of the course is on problem solving and calculus is used throughout. This course is strongly recommended for students who intend to take the AP Physics C exam.

525 **Astrophysics**

Grade Level: Junior/Senior  
Length: One Semester  
Credit: .5 credit  
Prerequisite: Sophomore Physics

The major content emphasis of Astrophysics is on Stellar Evolution. Techniques from classical mechanics, electromagnetism, nuclear and atomic physics are utilized to examine the inter-relationship between theoretical models and observational evidence. Topics include astronomical instrumentation, stellar characteristics, the interstellar medium and the various models of stellar formation. The evolutionary phases of stars and the manner in which they end their existences are all explored.
Observational Astronomy

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Sophomore Physics

Observational Astronomy is a course for students who wish to gain an understanding of the night sky. The identification of stars and their patterns, the use of coordinate systems, and celestial mechanics are the topics of emphasis. The naked-eye, binoculars, telescopes, and astrophotography will be utilized extensively to examine the universe around us. There will be one evening meeting per week.

Electronics

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Sophomore Physics

Electronics is a laboratory course which utilizes state-of-the-art instrumentation for the examination and processing of electronic signals. Solid state devices such as operational amplifiers, transistors, and integrated circuits will be examined through laboratory activities in this program.

Topics in Modern Physics

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: Sophomore Physics

This course includes topics in physics beyond the scope of Sophomore Physics which relate to phenomena and devices of importance to modern physicists. These include: relativity (special/general), cosmology, accelerators and detectors, particle physics, nuclear physics, symmetry, superconductivity.

Ecology

Grade Level: Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: University Biology

Interactions among organisms, and among organisms and their environments. Theoretical and applied aspects, including current environmental issues. Lectures, field trips, presentations, labs, and other activities.
Human Biology
Grade Level: Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: University Biology

Human anatomy and physiology; cells, tissues, skeletal system, heart & circulation, blood, body fluid and kidney, respiration, central nervous system, senses, and endocrine system.

General Microbiology
Grade Level: Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: University Biology

An examination of microbial diversity which emphasizes the inter-relationships of bacteria with their environment. This includes aspects of cell structure, metabolism, growth, genetic structure/change in microorganisms, immunology, and medical microbiology.

Pathogenic Microbiology
Grade Level: Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: General Microbiology

Survey of the bacteria, protozoa, viruses, and fungi associated with infectious disease, including study of morphology, physiology, immunology, of these host/parasite interactions.

Genetics
Grade Level: Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: University Biology

Coverage of traditional and modern aspects, including population genetics, Mendelian genetics, sex linkage, mutation, DNA manipulation, gene mapping, statistical applications, and ethical dilemmas posed by recent technological advances. Varied activities, including labs, presentations, discussions, and lectures.
Cell Biology

Grade Level: Senior
Length: One Semester
Credit: .5 credit Pass/Fail Option
Prerequisite: University Biology

The focus in this course will be the cell. Topics of exploration include the structure, growth, chemistry, metabolism, regulation, genetics, and organelle function of biological cells. The tools and techniques by which scientists study these processes will also be discussed. Students will gain practical experience in these techniques in the laboratory portion of this class.

Science, Society and the Future

Grade Level: Senior
Length: One Semester
Credit: 1.0 (.5 Social Science and an additional .5 from either Science or Mathematics) Pass/Fail Option
Prerequisite: None

Exploration of issues which result from the collision of science and society is the focus of this course. The investigations will be lead by a team of instructors from science, mathematics and social science. The roots, controversies and ethical implications of each issue will be examined in a "think tank" environment with special attention given to analysis of the behavior of complex systems using basic science knowledge and mathematical modeling as well as the "future" implications of possible solutions.

Technical Writing and Data Analysis

Grade Level: Junior/Senior
Length: One Semester
Credit: .5 credit Pass/Fail option
Prerequisite: None

The principal goal of this course is to provide the student with the skills needed to do and report on original research. It involves an introduction to the system of information dissemination used in science, instruction and practice in technical writing using word processing programs, use of computer data bases and other library research methods to do literature searches, and use of computer programs to collect and analyze data (including, but not limited to, ASYST).
581(F) **Junior Project in Science**

*Grade Level: Junior*

*Length: Variable*

*Credit: .5 - 2.0 credit Pass/Fail option*

*Prerequisite: Science Team approval*

Independent projects or research which enable juniors to investigate an approved science topic of their choice under the sponsorship of a faculty advisor. The project must be designed and appropriate approval granted before the beginning of the project term. The process of this project is as important as the product. The outcome of some of the activities may result in competition with peers or publication.

**SOCIAL SCIENCE**

601 **American Studies**

*Grade Level: Sophomore*

*Length: One Year*

*Credit: 1.0 credit*

*Prerequisite: None*

This course explores the events, trends, personalities, and complex series of connections which help explain the global nature of modern America. Through simulation, problem-solving, and research, students investigate relationships between the past and the present, especially the evolution of an increasingly globalized human experience. All the skills of the social scientist are used during this course with special attention given to the expression of ideas through writing.

610 **World Studies**

*Grade Level: Junior*

*Length: One Year*

*Credit: 1.0 credit*

*Prerequisite: American Studies*

Our world’s history and the major issues confronting its people have assumed an increasingly global character. An understanding of the roots of our global era is developed through a humanities approach which focuses on the ideas, events, trends, ideologies, and the creative expressions of humankind. Students continue using their social science skills and writing ability for investigation and communication.
**International Relations**

Grade Level: Senior  
Length: One Semester  
Credit: .5 credit  
Pass/Fail option  
Prerequisite: None

The theory and conduct of relations between nations will be investigated from a historical and "crisis management" point of view. Of special interest will be America's rise and response to its position as a world power. Examples of cooperation and conflict will be studied to gain insights into the relations between superpowers and the management of international problems such as terrorism, hunger, debt, pollution, racism, and the arms race.

**Sociology**

Grade Level: Senior  
Length: One Semester  
Credit: .5 credit  
Pass/Fail option  
Prerequisite: None

Sociology investigates human relationships within groups and the behavior of social institutions. The investigations of the sociologist are based upon direct observations of society and observations of people in experimental settings. This course will sample a wide range of topics including: society and culture; heredity, environment, and socialization; self-concept; structure of organizations; deviance and conformity; social stratification; race and ethnicity; values and morals; problems related to cities, population, work, and class conflict.

**Psychology**

Grade Level: Senior  
Length: One Semester  
Credit: .5 credit  
Pass/Fail option  
Prerequisite: None

Psychology the scientific study of behavior and mental processes, organizes and investigates information regarding the inherently fascinating subjects of ourselves and the people around us. This course will survey such topics as physiological psychology, sensation, perception, learning, problem solving, memory, motivation, life cycle development, interpersonal relations, stress, and abnormal psychology. The overall goals of Psychology include the development of an awareness of the complexity of human behavior and a concomitant increase in the understanding of self and others. Along with content knowledge and hands-on activities, students in this class will work on developing their abilities to
analyze, interpret, relate and communicate information orally and in writing.

626  Advanced Placement Economics

Grade Level: Senior
Length: One Year
Credit: 1.00 credit  Pass/Fail option
Prerequisite: None

Economics is a rigorous and demanding college level course designed to prepare students for the AP exam. Students will be expected to spend substantial time mastering economic formulas and concepts. All societies--ancient and modern, developed and underdeveloped, capitalist and communist--face the problem of scarcity. This is the central problem from which all other economic problems flow. This course will cover the essentials of microeconomics (supply and demand, price mechanism, competition, and income distribution) and macroeconomics (the economy as a whole, inflation, unemployment, and the role of government in helping the economy run smoothly through monetary and fiscal policy).

628  Science, Society and the Future

Grade Level: Senior
Length: One Semester
Credit: 1.0 (.5 Social Science and an additional .5 from either Science or Mathematics)  Pass/Fail Option
Prerequisite: None

Exploration of issues which result from the collision of science and society is the focus of this course. The investigations will be lead by a team of instructors from science, mathematics and social science. The roots, controversies and ethical implications of each issue will be examined in a "think tank" environment with special attention given to analysis of the behavior of complex systems using basic science knowledge and mathematical modeling as well as the "future" implications of possible solutions.

629  Theories of War - Theories of Peace -

Grade Level: Senior
Length: One Semester
Credit: .5 credit  Pass/Fail option
Prerequisite: None

Christ, Machiavelli, Clausewitz, Gandhi, Mao and Dr. Martin Luther King all had different ideas about how conflicts could and should be resolved. This course will explore the theoretic framework each of these thinkers developed and then go on to assess their theories in the context of specific historical events. In the second part of the course an effort
will be made to examine the impact of technology on war. TV, lasers, computers and industrialization will all be examined. World Wars I and II, Vietnam and the 1973 Arab-Israeli War will provide the context for this portion of the course.

**044 Utopia/Anti-Utopia**

**Grade Level:** Senior  
**Length:** 2nd Semester  
**Credit:** 1.0 (.5 in English/.5 in Social Studies)  
**Prerequisites:** Junior English/World Studies

This course, formerly offered as only an English elective, will be offered as a team-taught course, scheduled for five periods in a six-day cycle. **This course will meet as both English and Social Science Senior graduation requirements.** Students will read classical and modern fiction and factual materials that examine the best of all possible worlds and the worst. Early in the semester, students will write a description of their own idea of utopia. The course will move from there to consider the ideas and experiences of others: examining those ideas from the perspectives of literature, sociology, psychology, history, and political philosophy. Readings will include selections from FAMOUS RENAISSANCE UTOPIAS (including More's UTOPIA), BRAVE NEW WORLD, WALDEN, the REPUBLIC, LORD OF THE FLIES, and a number of other works from which students will choose independently.

**Senior Project**

**Grade Level:** Senior  
**Length:** One - Two Semester(s)  
**Credit:** .5 - 2.00 credit Pass/Fail option  
**Prerequisite:** Departmental approval

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Fall</th>
<th>Spring</th>
<th>Dept.</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>090</td>
<td>091</td>
<td>Health</td>
<td>492</td>
<td>493</td>
</tr>
<tr>
<td>Music</td>
<td>190</td>
<td>191</td>
<td>Science</td>
<td>590</td>
<td>591</td>
</tr>
<tr>
<td>Art</td>
<td>192</td>
<td>193</td>
<td>Chemistry</td>
<td>592</td>
<td>593</td>
</tr>
<tr>
<td>For. Lang.</td>
<td>290</td>
<td>291</td>
<td>Physics</td>
<td>594</td>
<td>595</td>
</tr>
<tr>
<td>Math</td>
<td>390</td>
<td>391</td>
<td>Biology</td>
<td>596</td>
<td>597</td>
</tr>
<tr>
<td>Comp. Sci.</td>
<td>392</td>
<td>393</td>
<td>Soc. Science</td>
<td>690</td>
<td>691</td>
</tr>
<tr>
<td>Phy. Ed.</td>
<td>490</td>
<td>491</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Independent projects or research which enable seniors to investigate an approved topic of their choice under the sponsorship of a faculty advisor. The project must be designed and appropriate approval granted before the close of the student's junior year. Significant progress on the project must be demonstrated to the faculty advisor at the beginning of the student's senior year, at the close of the first quarter of that year, and at the close of the first
semester. The project must be completed by the third quarter of the student's senior year. The process of this project is as important as the product: a journal-record/research notebook and an annotated bibliography must, therefore, precede submission of the final product, which may be a performance, a lecture, a work of fine art, or a paper. Projects to be submitted for credit to more than one department must be approved by all participating departments prior to the completion of the student's junior year. Each participating department will monitor the progress of the project at critical checkpoints.

The student's finished product will be presented to their project review committee during the second semester of the student's senior year for determination of credit. Students may be called upon to present the results of their research in other settings as well.

(September, 1989)