ILLINOIS MATHEMATICS AND SCIENCE ACADEMY

A Pioneering Educational Community

COURSE OFFERINGS 1995/96

MATHEMATICS

1112(F) Geometry I/II

Grade Level: Sophomore/Junior/Senior
Length: One Semester (Fall)
Credit: .50
Prerequisite: Recommendation of Instructor

This is a one semester accelerated course in Euclidean Geometry for students with a solid background in Algebra. In addition to the content of a standard year long Geometry course, problem solving and proof are emphasized.

1120(F) Analysis

Grade Level: Sophomore
Length: One Semester (Fall)
Credit: .50
Prerequisite: Recommendation of Instructor

A one semester course that investigates pre-calculus concepts and skills. The material is drawn primarily from advanced and college algebra.

1121(F) Mathematical Investigations I
1122(S)

Grade Level: Sophomore/Junior
Length: One Semester
Credit: .50
Prerequisite: Analysis and Geometry I/II, or Recommendation of Instructor

Mathematical Investigations is a three-semester sequence of courses which integrates topics from all areas of pre-calculus mathematics. Throughout the sequence, students will be expected to explore mathematical concepts, make conjectures and present logical, valid arguments for mathematical assertions. Both written and oral forms of communication are emphasized. Prior to entry into the Mathematical Investigations sequence, the student must demonstrate a strong background in Algebra, including a thorough understanding of the underlying concepts, a demonstrated ability with algebraic skills, and schemata which encourages mathematical thinking. The first course in this sequence, MI-1, will concentrate on the study of matrices, linear thinking and relationships, and functions, both discrete and continuous, with an emphasis on logarithmic and exponential functions.

1123(F) Mathematical Investigations II
1124(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .50
Prerequisite: Mathematical Investigations I or Recommendation of Instructor

MI-2 is the second semester of the Mathematical Investigations sequence. In addition to the emphasis and content from MI-1, this course will concentrate on extending the concept of function and applications to include polynomials, rational functions, and trigonometric functions.

1125(F) Mathematical Investigations III
1126(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .50
Prerequisite: Mathematical Investigations II or Recommendation of Instructor

MI-3 is the third semester of the Mathematical Investigations sequence. This semester will emphasize sequences and series, vectors, applications of trigonometry, trigonometric identities, cis functions, mathematical modeling, conics, the Binomial Theorem, mathematical induction, and introductory combinatorics.

1130(F) PreCalculus
1131(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .50
Prerequisite: Mathematical Investigations III or Recommendation of Instructor

This is a one semester course designed to reinforce the skills and concepts needed for successful completion of a college level calculus sequence. The course will revisit a number of topics with more depth and from new perspectives. Topics will be chosen from: functions, coordinate systems, trigonometry, vectors, and limits. Additional topics from discrete mathematics may also be discussed including logic, sequences, algorithms, recursion, induction, combinatorics, and graphs and networks. This course is designed to provide support for students who may experience difficulty moving directly into the Calculus sequence.

1132(F) AB Calculus I
1133(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .50
Prerequisite: PreCalculus or Recommendation of Instructor

The first of a two semester sequence which will include the introductory concepts presented in the Advanced Placement AB Calculus syllabus.

1134(F) AB Calculus II
1135(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .50
Prerequisite: AB Calculus I or Recommendation of Instructor

The second of a two semester sequence which will include topics from the Advanced Placement AB Calculus syllabus. Students completing AB Calculus I and AB Calculus II will have completed the equivalent of a semester of college level calculus.

1140(F) BC Calculus I
1141(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .50
Prerequisite: Mathematical Investigations III or 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.

1142(F) BC Calculus II
1143(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .50
Prerequisite: BC Calculus I

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 and indeterminate forms. Polynomial, rational and transcendental functions will be studied.

1144(F) BC Calculus III
1145(S)

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .50
Prerequisite: BC Calculus II

The third of a three semester sequence which will conclude the material covered in the Advanced Placement BC Calculus syllabus. Topics will include concepts and applications of hyperbolic functions, parametric and polar equations and sequences and series.

1150 Advanced Geometry

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisites: Mathematical Investigations III or Recommendation of the Instructor

A study of advanced topics in geometry selected from such areas as: points of concurrence, cevians, the golden mean, fractals, matrix transformations, geometric averages, non-Euclidean geometries, geometric probability, modelling, spirals, the theorems of Ceva, Menelaus, Pascal, Desargues, and Pappus. The course emphasizes mathematical connections through individual and group explorations, discussions and problem solving.

1151 Data Analysis

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Mathematical Investigations II

A study of exploratory data analysis, descriptive statistics, and measures of central tendency and dispersion on both discrete and continuous variables. Additional topics will be taken from the following: normal, binomial, and poison distributions, probability, Chi-square distributions, curve fitting, regression, correlation, and hypotheses testing. Several group and individual projects will be required.

1153 Exploring Math Topics Using *Mathematica*

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Mathematical Investigations III or Recommendation of the instructor. Familiarity with a Macintosh computer is advisable.

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 because the course will include training on the software. Enrollment will be limited by the size of the computer laboratory.

1154(F) Multi-Variable Calculus
1155(S)

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: BC Calculus III

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

1156 Number Theory

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: BC Calculus I or Permission of Instructor **and** Team Leader

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.

1157 Problem Solving

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Mathematical Investigations II

In this course, students will learn how to apply a broad range of problem solving techniques and strategies while making connections with the social and environmental sciences, business and economics, mathematical games, and mathematical systems. The course will emphasize both individual and group investigations and explorations.

1158 Advanced Problem Solving

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: BC Calculus I, or permission of Instructor **and** Team Leader, and a score of 90 or above on a previous AHSME exam

The course will emphasize advanced techniques and strategies used at the national and international levels of problem solving, including the Mathematical Olympiads. Methods of proof and validation will be highlighted in presenting formal mathematical solutions to problems. The course content will focus upon topics from advanced geometry, combinatorics, theory of equations, series, sequences, and number theory. **Students may not register for both Problem Solving and Advanced Problem Solving.**

1159 Discrete Mathematics

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Mathematical Investigations II

The main emphasis of study will include topics of social applications, matrices, graph theory, recursion, techniques of counting, permutations, combinations, and probability. A major emphasis will be both individual and group investigations and explorations.

1160 Introduction to Algebraic Structures I

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fall option
Prerequisite: Multi-variable Calculus and/or Advanced Problem Solving and/or Number Theory and permission of instructor

This course will introduce the students to abstract algebraic concepts such as sets, groups, homomorphisms, group actions, Sylow Theorems and their interactions. Students will master appropriate algorithms, explore and prove basic theorems, and develop the vocabulary and understanding which provides the foundation for applications in a variety of disciplines. The concept of *symmetry* will serve as a unifying concept for the course.

1161 Introduction to Algebraic Structures II

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Algebraic Structures I or permission of instructor

This course builds on the concepts and techniques of abstract algebra and develops understanding of linear algebra. It will include explorations of vector spaces, basis and dimension, rings, fields, unique factorization domains, principal ideal domains, Euclidean domains, polynomial rings, and Galois theory.

1170 Introduction to Pascal

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Mathematical Investigations II

An introduction of programming and computer science using the Pascal language. Top down approach to algorithmic design and structural programming will be emphasized. A significant amount of the AP Computer Science AB syllabus will be discussed.

1171(S) AP Computer Science

Grade Level: Junior/Senior
Length: One Semester (Spring)
Credit: .50 Pass/Fail option
Prerequisite: Introduction to 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.

1172(F) Computer Seminar

Grade Level: Junior/Senior
Length: One Semester (Fall)
Credit: .50 Pass/Fail option
Prerequisite: Introduction to Pascal or Recommendation of Instructor

This course includes a study of advanced programming techniques using C++. Students will be expected to complete several group and individual projects, including a major program.

1173 Assembly Language Programming

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Introduction to Pascal or permission of Instructor

This course will introduce the students to the specifics of assembly language programming in the context of the 80x88 family of computers. Approximately half of the semester will be spent learning the language by writing programs which manipulate text and numeric data. The remainder of the semester will be spent writing application programs. Depending on student interest and background, those applications might include, but are not limited to, the following: a communications program between two computers, an interactive game using ASCII characters on the display, controlling an L.E.D. clock, controlling the traffic lights in an intersection, a disk utility program, and interfacing assembly language routines with high level programs.

SCIENCE

1200 Integrated Science I

Grade Level: Sophomore
Length: Two Semesters
Credit: 1.0 per semester
Prerequisite: None

This two semester sequence satisfies all but one year of the Academy core science requirement. The presentation is interdisciplinary throughout taking its content from chemistry, physics, biology, earth science, and technology. Learning occurs in a context which emphasizes the way science is done, the usefulness of science concepts in understanding the way both natural and designed things work, and applications to current and future problems. The course is taught by an interdisciplinary team of teachers.

1201 Sophomore Chemistry

Grade Level: Sophomore
Length: Two Semesters
Credit: .50 per Semester
Prerequisite: None

This entry level core course is required for all first year students at the Academy except those students taking Integrated Science I. It introduces students to such scientific processes of observation, experimentation, communication, and information retrieval as related to chemistry. From these activities, concepts are developed and used in problem-solving. Course content includes environmental chemistry, periodicity, atomic structure, chemical reactions, and equilibria.

1202 Advanced Chemistry

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Sophomore Chemistry

This course continues the study of inorganic chemistry that began in Sophomore Chemistry. Topics such as electrochemistry structure, bonding, molecular geometry, and equilibrium are reviewed and expanded upon. In addition, several new concepts will be presented, including crystal structures, colligative properties of solutions, spontaneity, and reaction rates. Emphasis is on demonstration/discussion, problem-solving, as well as laboratory experiences. This course is strongly recommended for those students who plan on taking the AP Chemistry examination.

1203 Survey of Organic Chemistry

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Sophomore Chemistry

This course introduces the student to the chemistry of carbon compounds that are essential to living things. Students learn how organic compounds are classified and named as well as typical reactions. An investigation into polymer chemistry is included. There will be a strong emphasis on laboratory work that will coordinate with concepts presented. This course is designed for the student who will only take one semester of organic chemistry.

1204 * Organic Chemistry I

Grade Level: Junior/Senior
Length: One Semester (Fall)
Credit: .50 Pass/Fail option
Prerequisite: Sophomore Chemistry

1205 * Organic Chemistry II

Grade Level: Junior/Senior
Length: One Semester (Spring)
Credit: .50 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.

1206 Biochemistry

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Organic Chemistry I or Survey of Organic Chemistry

This introductory course in biochemistry emphasizes several unifying concepts: three dimensional structure and biological activity; storage and transmission of information determining structure; generation and storage of energy; integration and regulation of biochemical processes and metabolic pathways. Many of the concepts developed in the course are connected to various disease states such as diabetes mellitus. Problem-based learning experience modules are utilized to place the student in the role of an active biochemistry investigator.

1208 Facets of Thermodynamics

Grade Level: Junior/Senior
Length: One Semester (Spring)
Credit: .5 Pass/Fail option
Prerequisite: One semester of Calculus (either BC1 or AB1)

Facets of Thermodynamics is an introduction to the analysis of several thermodynamic machines: heat engines, refrigerators, computers, cells, and Universe. We build the principles from the probable behavior of large numbers of particles and play with the first order differential equations which describe their dynamics. We see what happens if the states of the particles are quantized. We take paths which lead to smooth and to chaotic dynamics. We look for the origin of times's arrow.

1221 Sophomore Physics

Grade Level: Sophomore
Length: Two Semesters
Credit: .50 per Semester
Prerequisite: None

This entry-level core course is required for all first year students at the Academy except those students taking Integrated Science I. It presents the foundational concepts of physics and the skills needed to investigate physical systems using a laboratory approach. It involves observation, data analysis, model building, and prediction. It emphasizes conceptual development to be used in problem-solving. Basic course content: mechanics, wave phenomena and light, kinetic theory, geometrical optics, electricity, and magnetism.

1222 Advanced Physics

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Sophomore Physics

This course continues the study of basic physics concepts begun in Sophomore Physics. It reviews some previously covered topics and presents additional material on conservation laws, rotational mechanics, statics, wave phenomena, electricity, and magnetism. The emphasis throughout is on laboratory-based discovery, problem-solving techniques, and laboratory analysis. This course, in addition to TMP, is strongly recommended for students who intend to take the AP Physics B exam.

1223(F) * Calculus-based Physics - Mechanics

Grade Level: Junior/Senior
Length: One Semester (Fall)
Credit: .50 Pass/Fail option
Prerequisite: Sophomore Physics and AB Calculus I or
BC Calculus I

1224(S)* Calculus-based Physics - Electricity/Magnetism

Grade Level: Junior/Senior
Length: One Semester (Spring)
Credit: .50 Pass/Fail option
Prerequisite: Sophomore Physics and AB Calculus I
or BC Calculus I

* 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. Since the learning environment in this class varies from section to section, examine the description of learning environment for each section and choose the one you prefer.

1225 Astrophysics

Grade Level: Junior/Senior
Length: One Semester (Spring)
Credit: .50 Pass/Fail option
Prerequisite: Sophomore Physics

The conceptual 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.

1226 Observational Astronomy

Grade Level: Junior/Senior
Length: One Semester (Fall)
Credit: .50 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 CCD imaging will be utilized extensively to examine the universe around us. There will be one evening meeting per week.

1228 Electronics

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Sophomore Physics

This is an introductory course in electronics designed for students with interest in "hands on" experience with basic electronics. Students are encouraged to discover basic electrical concepts through laboratory experiences, derive various formulas and conclusions describing their observations, and test their theories with appropriate experimentation in the lab. Projects, incorporating the knowledge gained through guided discovery, provide a culminating experience for the students. Students are encouraged to choose projects which interest them and provide them with the appropriate level of challenge based on their current level of understanding. Course Topics include: Ohm's Law, Series/Parallel Circuits, Superposition Theorem, Capacitors - AC & DC Analysis, Inductors, Diodes, Transistors, Op Amps and Basic Digital Circuits.

1229 Topics in Modern Physics

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 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: quantum and atomic physics, relativity (special/general), cosmology, holography, accelerators and detectors, particle physics, nuclear physics, symmetry, and superconductivity. This course is strongly recommended for students who intend to take AP Physics B exam.

1230 Geophysics

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: Sophomore Physics, Chemistry

This course will challenge students to develop models of how the earth functions. Using concepts from physics, chemistry, and biology, relationships and connections between the lithosphere, hydrosphere, biosphere, and atmosphere will be explored. The causes and effects of Global Warming, earthquakes, hurricanes, and other phenomena will be explored using actual up-to-the-minute data from the internet and computer models. Satellite images, computer-aided learning materials, and problem-based methods are used.

1240 Integrated Science II

Grade Level: Junior
Length: One Semester
Credit: 1.0 per Semester
Prerequisite: Integrated Science I

This two year sequence satisfies all but 1.0 credit of the Academy science requirement. The presentation is interdisciplinary throughout taking its content from chemistry, physics, biology, earth science, and technology. Learning occurs in a context which emphasizes the way science is done, the usefulness of science concepts in understanding the way both natural and designed things work, and applications to current and future problems. The course is taught by an interdisciplinary team of teachers.

1241 University Biology

Grade Level: Junior
Length: Two Semesters
Credit: .50 per Semester
Prerequisite: Sophomore Chemistry and Sophomore Physics

This core course is required for all Junior students at the Academy except those students taking Integrated Science II. It is a survey course for students with a background in chemistry and physics. Topics include molecular biology, cell biology, ecology, and the evolution and diversity of life. Extensive laboratory experiences are provided and concepts are developed by the inquiry method.

1242 Ecology

Grade Level: Senior
Length: One Semester (Fall)
Credit: .50 Pass/Fail option
Prerequisite: University Biology

Interrelationships among organisms, and their environments, and the diversity of the Earth's ecosystems, communities, and populations are covered in the course. The course considers both theoretical and applied aspects of ecology including current environmental issues. The course spends most lab days off campus examining field problems with several optional activities offered to supplement the regular course material.

1243 Human Anatomy and Physiology

Grade Level: Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: University Biology

This course covers the structure and function of the human body. Emphasis is placed on the cardiovascular, respiratory, nervous, and endocrine systems. Laboratory work utilizes the open-ended investigative format. Computers are used for data acquisition and analysis. Ethical issues activities covering various aspects of human biology are included in discussion sections. A class project and oral presentations are integral parts of the course.

1244 General Microbiology

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: First Semester of University Biology

This course examines microbial diversity, emphasizing the interrelationships of bacteria with their environments. This includes aspects of cell structure, metabolism, growth, genetic structure/change in microorganisms, immunology, and medical microbiology. Laboratory exercises will include microscopy, staining techniques, pure culture techniques, control of microbial growth, quantitative techniques, physiological testing and serology. A series of unknown cultures will be presented to the student to test their mastery of the above techniques.

1245 Pathogenic Microbiology

Grade Level: Senior
Length: One Semester (Spring)
Credit: .50 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. A library research paper dealing with some disease-causing microbe will be required.

1246 Genetics

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: First Semester of University Biology
Coverage of traditional and modern aspects, including developmental genetics, Mendelian genetics, sex linkage, mutation, population genetics, statistical applications, and ethical dilemmas posed by recent technological advances. Varied activities, including labs, field trips, discussions, and lectures are used in the course format.

1248 Patterns of Biological Diversity

Grade Level: Senior
Length: One Semester (Spring)
Credit: .50 Pass/Fail option
Prerequisite: University Biology

This course explores the diversity of living organisms, their structure and organization, and their patterns across space and time. Emphasis is given to plant and animal groups that students are able to observe in the field. Topics include animal behavior, animal and plant taxonomy, animal and plant phylogeny, biogeography, biological and environmental conservation, and an exploration into the natural history of many local plants and animals. An appreciable amount of time is dedicated to field work.

1249 Cell Biology

Grade Level: Junior/Senior
Length: One Semester (Fall)
Credit: .50 Pass/Fail option
Prerequisite: First Semester of University Biology

In this course students will explore the structure, growth, chemistry, metabolism, regulation, genetics, and organelle function of biological cells. Students will study these processes through traditional and open-ended lab activities. Time also will be spent on reading scientific literature, writing, library research, and oral presentations.

1262 Scientific Writing and Data Analysis

Grade Level: Junior/Senior
Length: One Semester (Fall)
Credit: .50 credit Pass/Fail option
Prerequisite: None

The principal goal of this course is to provide the student with the skills needed to analyze data and present research work in a publishable format. It involves an introduction to the system of information dissemination used in science, instruction and practice in scientific 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.

1278(F) Junior Project in Science
1279(S)

Grade Level: Junior
Length: One - Two Semester(s)
Credit: .50 - 2.00 Pass/Fail option
Prerequisite: Science Team and Director of Academic Programs 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.

1440 Science, Society and the Future

Grade Level: Senior
Length: One Semester
Credit: 1.00**(.50 Social Science & .50 Science)**
Pass/Fail option

If taking this course both semesters, please be advised that of the 2.00 credit granted, only .50 can be applied toward fulfilling the science graduation requirement.

Prerequisite: World Studies and University Biology

Exploration of issues which result from the interaction of science and society is the focus of this course. The investigations will be lead by a team of instructors from science 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. Attention is also given to the potential impact each solution might have on society. **This course will count as two academic courses towards the minimum five academic classes required each semester.**

ENGLISH

1310 Sophomore English

Grade Level: Sophomore
Length: Two Semesters
Credit: .50 per semester
Prerequisite: None

This course introduces students to a variety of genres in literature, to the processes of effective aesthetic reading, to the work of discussion and performance as a responses to literature, and to the processes of writing in a variety of forms and for a variety of purposes. All sophomores will read OEDIPUS REX, THE ODYSSEY (in a poetry translation), ADVENTURES OF HUCKLEBERRY FINN and a Shakespeare play. Additional readings for this year-long core course will be selected by individual instructors from a variety of authors from many cultural traditions.

1320 Junior English

Grade Level: Junior
Length: Two Semesters
Credit: .50 per semester
Prerequisite: Sophomore English

The work of developing skill in aesthetic reading and in discussion, performance, and writing continues at higher levels. Students are expected to develop greater independence as readers and writers, to be more conscious of their own processes as readers and writers, to be more conscious of their own processes as readers and writers. All juniors will read selections from The Bible, a Shakespeare play, Dostoevsky's Crime and Punishment, Kafka's "The Metamorphosis", Beckett's Waiting for Godot, Wright's Native Son, and Voltaire's Candide. Additional works for this year-long core course will be selected by individual teachers.

Senior English (Required)

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

FIRST SEMESTER SENIOR ENGLISH OFFERINGS

1330 Topics in American Literature: Modern Poetry
Grade Level: Senior
Length: One Semester (Offered both semesters)
Credit: .5
Prerequisite: Junior English

In this course students will look extensively at writings (both poetry and prose) of a variety of American poets. Students will explore what the poetic genre entails and what poets say about their craft. Students will examine their own and others' approaches to poetry through discussion, group projects, a number of writing assignments, and, perhaps, their own writing of poetry. The particular poets to be read will vary with the instructor.

1331 The Short Story: Theory and Practice

Grade Level: Senior
Length: One Semester (Offered both semesters)
Credit: .5
Prerequisite: Junior English

This course leads students to develop their own theory of the short story by exercising their critical and creative thinking skills in a workshop setting. Students read and discuss short stories by modern authors demonstrating a wide range of approaches to the art of storytelling; each student composes her or his own short story and presents it to the class for critical response. (A caution to students primarily interested in science fiction: the theoretical and practical focus of the course is literary realism.)

1332 The Idea of the Individual

Grade Level: Senior
Length: One Semester **(Offered First semester only)**
Credit: .50
Prerequisite: Junior English

This is an autobiography studies course that raises the question of whether or not the personal self is an adequate narrating principle for existence. The course addresses the gradual splintering of the notion that the self and the soul are synonymous, as well as the accompanying idea that the self and its personal narrative are synonymous with national history. Primary works may include Faulkner's The Sound and the Fury, Franklin's Autobiography, Rousseau's Confessions, and major autobiographical long poems by T.S. Eliot and Wallace Stevens.

1339 Portraits of Creativity

Grade Level: Senior
Length: One Semester (Offered both semesters)
Credit: .50
Prerequisite: Junior English

We will examine the lives and work of creative people in several of the arts (including literature, music, and painting) and the sciences, posing questions concerning the nature of artistic and scientific work, the roles of the artist and scientist in our culture, and the relationship between Apollonian order and Dionysian spontaneity in creative work. Through discovery, students will consider issues of creativity in their own lives.

1340 Topics in World Literature: Fiction

Grade Level: Senior
Length: One Semester (Offered both semesters)
Credit: .50
Prerequisite: Junior English

The readings for this class will include short stories and novels by European, African, and Latin American, and Asian authors. Students will have an opportunity to see how different cultural traditions, historical experiences, and political systems have influenced imaginative writing during the twentieth century. We will ask, too, whether contemporary writers have some identity in common--a set of conceptions or impulses or literary techniques that can assist in defining their otherwise diverse achievements. The writers to be read will vary with the instructor.

1341 Modern Irish Literature

Grade Level: Senior
Length: One Semester **(Offered First semester only)**
Credit: .50
Prerequisite: Junior English

Irish artists sing songs of rage and rapture that are a forming force in twentieth century literature. In listening to them we will engage with an often comic cultural vision that is oddly energized by a fear of sex and a love of death. The course will explore the fiction and poetry of seminal authors James Joyce and W.B. Yeats, and the drama of Synge and O'Casey. In addition, we will read, discuss, and write about some of their descendants in contemporary Irish literature: fiction writers William Trevor, Edna O'Brien; poets Thomas Kinsella, Seamus Heany, Eavan Boland, Michael Longley; dramatists Brian Friel, Samuel Beckett. We will also examine the recent flowering of Irish film (e.g., "In The Name of the Father", "The Crying Game") and Irish rock music (e.g., "U2", "Black 47".)

SECOND SEMESTER SENIOR ENGLISH OFFERINGS

1350 Topics in American Literature: Modern Poetry

Grade Level: Senior
Length: One Semester (Offered both semesters)
Credit: .50
Prerequisite: Junior English

In this course students will look extensively at writings (both poetry and prose) of a variety of American poets. Students will explore what the poetic genre entails and what poets say about their craft. Students will examine their own and others' approaches to poetry through discussion, group projects, a number of writing assignments, and, perhaps, their own writing of poetry. The particular poets to be read will vary with the instructor.

1351 The Short Story: Theory and Practice

Grade Level: Senior
Length: One Semester (Offered both semesters)
Credit: .50
Prerequisite: Junior English

This course leads students to develop their own theory of the short story by exercising their critical and creative thinking skills in a workshop setting. Students read and discuss short stories by modern authors demonstrating a wide range of approaches to the art of storytelling; each student composes her or his own short story and presents it to the class for critical response. (A caution to students primarily interested in science fiction: the theoretical and practical focus of the course is literary realism.)

1358 Belief in Question in Modern Literature

Grade Level: Senior
Length: One Semester **(Offered Second semester only)**
Credit: .50
Prerequisites: Junior English

In this course we will raise the human experience of belief as a complex of attitudes that has stimulated the literary imagination. Works by Jorge Luis Borges, Graham Greene, Bernice Rubens, John Updike, William James, and Sigmund Freud, among others, will allow us to look at belief as a phenomenon that has served to radicalize thought as well as enslave it. We will see that while belief is commonly conceived and often expressed in religious terms, it is also a human stance secured by non sacral tethers.

1359 Portraits of Creativity

Grade Level: Senior
Length: One Semester (Offered both semesters)
Credit: .50
Prerequisite: Junior English

We will examine the lives and work of creative people in several of the arts (including literature, music, and painting) and the sciences, posing questions concerning the nature of artistic and scientific work, the roles of the artist and scientist in our culture, and the relationship between Apollonian order and Dionysian spontaneity in creative work. Through discovery, students will consider issues of creativity in their own lives.

1365 Galileo, Science and the Church

Grade Level: Senior
Length: One Semester **(Offered Second Semester only)**
Credit: .50
Prerequisite: Junior English

This course treats the evolution of science and philosophy, and the emergence of disparate literary genres as a complex, unified web that is itself imbedded in the matrix of the historical continuum. We consider how habits of mind among the Greeks and Hebrews unexpectedly inform the linguistic nominalism of medieval philosophers and its outgrowth in the Protestant Reformation. We examine the complicity of the Protestant world view with that of modern science as it evolves into the Enlightenment Project of modernity. Primary works include selections from the writings of Petrarch, Montaigne, Galileo, Bacon and Descartes. More modern texts include Brecht's Galilio, Carpentier's The Lost Steps, and the poetry of Walt Whitman and Baudelaire. There will be a variety of guest presentations by members of the science, mathematics, and history teams.

1366 Topics in World Literature: Fiction

Grade Level: Senior
Length: One Semester (Offered both semesters)
Credit: .50
Prerequisite: Junior English
The readings for this class will include short stories and novels by European, African, Latin American and Asian authors. Students will have an opportunity to see how different cultural traditions, historical experiences, and political systems have influenced imaginative writing during the twentieth century. we will ask, too, whether contemporary writers have some identity in common--a set of conceptions or impulses or literary techniques that can assist in defining their otherwise diverse achievements. The writers to be read will vary with the instructor.

HISTORY AND SOCIAL SCIENCE

1410 American Studies

Grade Level: Sophomore
Length: Two Semesters
Credit: .50 per Semester
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.

1420 World Studies

Grade Level: Junior
Length: Two Semesters
Credit: .50 per Semester
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.

1431 International Relations

Grade Level: Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: World Studies

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.

1432 Psychology

Grade Level: Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisite: World Studies

Psychology, the scientific study of behavior and mental processes, organizes and investigates information regarding the inherently fascination 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, 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.

1433 Topics in Psychology

Grade Level: Senior
Length: One Semester (Spring)
Credit: .50 Pass/Fail option
Prerequisite: World Studies

Topics in Psychology is designed to deal with some of the most pressing and interesting social concerns of the day. The approach will be multidimensional, with investigation proceeding through such methods as observations of people and media in our surroundings, discussion of fictional accounts, debates, public policy simulations, data collection, reviews of current status of knowledge, and research critiques. The topics to be studied include mental illness; prejudice, discrimination, and stereotypes; gender issues, cognitive psychology and artificial intelligence. This class is designed to provide in-depth consideration of a limited number of subjects. It will not duplicate the broader experience of the survey course, but may be taken in addition or as an alternative to Psychology.

1434 Macroeconomics

Grade Level: Senior
Length: One Semester (Fall)
Credit: .50 Pass/Fail option
Prerequisite: World Studies

Macroeconomics is an issues oriented course in which basic macroeconomic concepts and theories (scarcity, supply and demand, inflation, unemployment, fiscal and monetary policy) are presented through the exploration and analysis of specific political and social realities. The issues themselves are ordered so as to facilitate a logical and systematic development of macroeconomic principles, concepts and theories. An exploration of economic thought provides the background for debates, discussions, simulations, and research which will be the tools for analysis. Students will also have an opportunity to participate in a mock international currency and interest rate vehicle trading exercise which should give their newly acquired knowledge of macroeconomics concepts a certain immediacy.

1435 Microeconomics

Grade Level: Senior
Length: One Semester (Spring)
Credit: .50 Pass/Fail option
Prerequisite: World Studies

Microeconomics is an issues oriented course in which basic microeconomic concepts and theories (demand and consumer choice, the firm, monopoly, oligopoly, capital, interest, profits, labor unions and collective bargaining) are presented through the exploration and analysis of specific political and social realities. The issues themselves are ordered so as to facilitate a logical and systematic development of microeconomic principles, concepts, and theories. An exploration into the historical development of the modern corporation and capitalism provides the background for debates, discussions, simulations and research which will be the tools for analysis.

Students will have an opportunity to guide the fortunes of a fictitious multinational conglomerate through the hazards of a simulated international business environment which should give their newly acquired knowledge of microeconomic concepts a certain immediacy.

1436 Topics in Recent United States History

Grade Level: Senior
Length: One Semester (Spring)
Credit: .50 Pass/Fail option
Prerequisite: World Studies

This course will focus on the years 1945 to the present. Recent U.S. History will present many of the topics, themes, issues, personalities, and events which are often not covered because time runs out in regular History courses. Therefore, this course will permit greater flexibility within the IMSA American Studies curriculum. The teacher and students will select units from among various themes and topics, a few of which include: The Cold War, Diversity: Counter-culture movements, Justice and Equality: Civil Rights and Civil Liberties in Post-War America, Power: Who Runs America?, The Seventies and the Issues of Scarcity and Limitations, The Significance of the Vietnam War in American History, American Post-War Popular Culture, Literature, and Movies, Evaluating the Reagan-Bush 80's: The Good or Bad Decade? and many other possible options. The themes and topics will be presented, in many instances, from an inter-disciplinary perspective incorporating Science, Literature, Political Science, International Relations, Sociology, Economics, and Art and Music.

1437 European History

Grade Level: Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisites: World Studies

Our contemporary world was forged in the heat of Europe's twentieth century wars. By 1900, Europe stood astride the globe, and from this apex she slid into a fiery maelstrom of extremism, greed, and horror sucking the rest of the world with her. Fed by the blood of tens of millions, the fires of two great wars and the hammers of dictatorship destroyed Europe and changed the world. Phoenix like she rose from the ashes but now, yielding much to others, reclaimed only part of her former position of power and glory in a very different world. In this world, from East Jerusalem to England's once again green and pleasant hills, the "White Man's Burden" has made boom boxes everyman's bitter-sweet joy.

The course will explore several dimensions of the birth, and development of the modern in Europe, and its purported death at the hands of a global and non-national, nomadic power elite. Both the history and the historiography of these phenomena will be addressed. Moreover, the investigation of this specific subject matter will lead into an exploration of the nature of the historical process and will facilitate students in their acquisition of a historical consciousness, a prerequisite for leadership in any field.

1438 Politics and Society
(Political Science)
Grade Level: Senior
Length: One Semester
Credit: .50 Pass/Fail option
Prerequisites: World Studies

"Politics and Society" will examine the relationship between the the American political process and a number of major ideological, social, economic, and governmental issues which confront American society today.

In this non-election year, we will examine the ideology aned policy proposals of the new Republican Conservative Congressional majority, note how the Clinton Presidency and Democratic Liberalism react to their historic 1994 MidTerm election defeat, and observe how national policy and legislation takes place between a deeply divided federal government. We will also review several key areas of Political Science such as political ideology, civil liberties, civil rights, and the making of public policy. We will look at how the various political ideologies organize their vision of American society around the concepts of Liberty, Equality, and Community. Finally, a number of contemporary political, policy, and social issues will be presented and debated such as Political Correctness, the Feminist political agenda, the Republican Contract with America, the proposed Prayer in the Public Schools Amendment, National Health Care, "Does the Bill of Rights Coddle Criminals?", Affirmative Action/Quotas, Censorship, and "What Are Traditional Family Values?"

1440 Science, Society and the Future

Grade Level: Senior
Length: One Semester
Credit: 1.00**(.50 Social Science and .50 Science)**
Pass/Fail option
If taking this course both semesters, please be advised that of the 2.00 credit granted, only .50 can be applied toward fulfilling science graduation requirement.
Prerequisite: World Studies and University Biology

Exploration of issues which result from the interaction of science and society is the focus of this course. The investigations will be lead by a team of instructors from science 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. Attention is also given to the potential impact each solution might have on society. This course will count as two academic courses towards the minimum five academic classes required each semester. **This course will count as two academic courses towards the minimum five academic classes required each semester.**

FOREIGN LANGUAGE

1503 Latin III

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: Latin II **and** consent of the Instructor

This advanced prose course is based on Cicero's orations and selected works of other classical authors. Roman government, architecture, and societal mores are incorporated into classical studies.

1504 Latin IV

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: Latin III **and** consent of the Instructor

This prose course is based on Cicero's orations and selected works of other classical authors. Roman government, architecture, and societal mores are incorporated into classical studies.

1511 French I

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

Students are expected to read, write and speak about their immediate world, which would include their interests, school life, family, friends and self. They will be able to ask for and understand basic information to be able to survive in the language.

1512 French II

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: French I and/or placement exam

Students will build on the survival skills attained in French I, while moving toward developing greater fluency in speaking and writing. The concept of the student and her or his "immediate world" will be expanded to the larger concept of "I and my extended world." Spoken and written language will progress from short sentence level to a more cohesive paragraph level. In a similar fashion, reading and listening comprehension will also be developed. The course will include units on Francophone poetry and Asterix.

1513 French III

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: French II and Teacher Recommendation **or**
Placement Exam and Teacher Recommendation

Students will be expected to be able to read, speak, and write about various topics such as the education system, professions, family, women in society, and current events. They will be able to analyze French poetry and prose taken from authentic sources.

Advanced French (Two Year Option)

1514 French IV (Advanced French, Year One)

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: Teacher recommendation and French III **or**
Teacher recommendation and Placement Exam

1515 French V (Advanced French, Year Two)

Grade Level: Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option,
Prerequisite: Teacher recommendation and French IV (Advanced French, year one)

French IV and V have been redesigned and combined in order to create a two year curriculum, entitled Advanced French.

The focus of the course will be continued development of the major skills of listening, speaking, reading, writing and seeing. Topics, interdisciplinary in nature, will include Francophone literature and culture, art, history, cinema, philosophy, science and ethics, as well as current events. Students will be expected to read authentic texts and to do research on an advanced level. Individual and team projects will be an integral part of this course.

Level IV and Level V students will be in the same class, doing the same work. Students have the option of completing only one year of the course, thereby receiving credit for French IV. Those who wish to continue will take the course the following year (different topical selections), receiving credit for French V.

1521 Spanish I

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

Students are expected to read, write and speak about their immediate world, which would include their interests, school life, family, friends and self. They will be able to ask for and understand basic information to be able to survive in the language. In addition this course will seek to enhance an understanding of the diverse cultures of the Spanish speaking world.

1522 Spanish II

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: Spanish I and/or placement exam

Students will build on the survival skills attained in Spanish I, while moving toward developing greater fluency in speaking and writing. The concept of the student and her or his "immediate world" will be expanded to the larger concept of "I and my extended world." Spoken and written language will progress from short sentence level to a more cohesive paragraph level, and will include past tense narration. In a similar fashion, reading and listening comprehension will also be developed.

1523 Spanish III

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: Spanish II and Teacher Recommendation **or**
Placement Exam and Teacher Recommendation

Students will be expected to be able to read, speak, and write about topics such as the differences of culture and customs between the Spanish-speaking countries and the American way of life, famous people of Spanish-speaking countries, current events and various selections of authentic literature.

1524 Spanish IV

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: Spanish III and Teacher Recommendation **or**
Placement Exam and Teacher Recommendation

Students will be expected to be able to read, speak, and write about topics in Spanish and Latin American literature, art, science, history, and/or current events.

1525 Spanish V

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: Spanish IV and Teacher Recommendation **or**
Placement Exam and Teacher Recommendation

This year long course will focus on authentic literature of Spanish-speaking countries and Hispanic-American literature. Emphasis will be on oral, reading, and written skills.

1531 German I

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

Students are expected to read, write and speak about their immediate world, which would include their interests, school life, family, friends and self. They will be able to ask for and understand basic information to be able to survive in the language.

1532 German II

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: German I and/or placement exam

Students will build on the survival skills attained in German I, while moving toward developing greater fluency in speaking and writing. The concept of the student and his or her "immediate world" will be expanded to the larger concept of "I and my extended world." Spoken and written language will progress from short sentence level to a more cohesive paragraph level. In a similar fashion, reading and listening comprehension will also be developed. Historical and cultural topics such as fairy tales, children's literature and film will be included.

1533 German III

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per year Pass/Fail option
Prerequisite: German II and Teacher Recommendation **or**
Placement Exam and Teacher Recommendation

The students will build and elaborate on skills developed in Level 2 in order to explore their world in relation to that of the German speaking world. Each semester students will be expected to complete a project which requires them to gather and process the information in the target language. Students will read selected authentic texts of fictional and non-fictional natures which will provide the impetus for discussions.

1534 German IV

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: German III and Teacher Recommendation **or**
Placement Exam and Teacher Recommendation

Students will continue to explore German in the context of their personal world in relationship to the broader German speaking world. Students speaking and writing will be guided by the cultural elements as represented by the literature, the media and film of the German speaking world.

1535 German V

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: German III and Teacher Recommendation **or**
Placement Exam and Teacher Recommendation

Students will continue to explore German in the context of their personal world in relationship to the broader German speaking world. Students speaking and writing will be guided by the cultural elements as represented by the literature, the media and film of the German speaking world.

1541 Japanese I

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

Primary emphasis is on oral proficiency in Japanese, although students will master katakana and hiragana as well. Focus is on building good pronunciation and listening skills. Students will learn to communicate in culturally appropriate ways, using basic sentence structures, and will be able to do such things as tell time, and ask for and give directions. They will also begin to learn how the structure of Japanese culture is reflected in the Japanese language.

1542 Japanese II

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: Japanese I
Students will continue to develop oral and aural proficiency, as well as begin to learn to read and write kanji (Chinese characters). Students will continue to learn about Japanese society by learning how to speak both more casually and more politely. They will also learn to communicate in a more sophisticated way, using more compound sentence structures, and will learn to, for example, explain the cause for something or tell what they think.

1543 Japanese III

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per year Pass/Fail option
Prerequisite: Japanese II and Teacher Recommendation

A continuation of Japanese II, and while oral communication will remain very important, more and more emphasis will be placed on reading and writing, and students will continue to expand their kanji knowledge.

1551 Russian I

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

Students are expected to read, write and speak about their immediate world, which would include their interests, school life, family, friends and self. They will be able to ask for and understand basic information to be able to survive in the language.

1552 Russian II

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: Russian I

Students will build on the survival skills attained in Russian I, while moving toward developing greater fluency in speaking and writing. The concept of the student and her or his "immediate world" will be expanded to the larger concept of "I and my extended world." Spoken and written language will progress from short sentence level to a more cohesive paragraph level. In a similar fashion, reading and listening comprehension will also be developed.

1553 Russian III

Grade Level: Sophomore/Junior/Senior
Length: One Year
Credit: 1.0 per Year Pass/Fail option
Prerequisite: Russian II and Teacher Recommendation

The students will build and elaborate on the skills developed in Russian II. Students will be expected to read selections from Russian literature, which will include plays and stories by Checkov and Zoshenko. The course will also include units on Russian art, history and social issues.

1600(F) Symphonic Band
1601(S)

Grade Level: Sophomore/Junior/Senior
Length: One - Two Semester(s)
Credit: .50 - 1.00 Pass/Fail option
Prerequisite: Play traditional wind/percussion instrument at basic level

Students enrolled in Symphonic 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 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 this course are eligible to participate in any music sponsored co-curricular activity.)

1602(F) Symphonic Wind Ensemble
1603(S)

Grade Level: Sophomore/Junior/Senior
Length: One - Two Semester(s)
Credit: .50 - 1.00 Pass/Fail option
Prerequisite: Participation in IMSA Symphonic Band; play traditional wind/percussion instrument at an advanced level. Admission by instructor's approval required.

Students enrolled in Symphonic Wind Ensemble will be provided the opportunity to examine, rehearse and perform varied styles of wind ensemble literature in a laboratory setting. In most cases, only the most technically and musically advanced students will be admitted to this course. The literature to be considered for this course will include large chamber music, pieces written specifically for wind ensemble (small chamber band) and orchestral transcriptions. Certain students enrolled in this course are also entitled, with instructor's approval, to perform as wind and percussion players for the IMSA Symphony Orchestra. (Students enrolled in this course are eligible to participate in any music sponsored co-curricular activity.)

1604(F) Symphony Orchestra
1605(S)

Grade Level: Sophomore/Junior/Senior
Length: One - Two Semester(s)
Credit: .50 - 1.00 Pass/Fail option
Prerequisite: Play stringed instrument (violin, viola, 'cello, or string bass) at basic level

Students enrolled in the Symphony 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 any music sponsored co-curricular activity.)

1610(F) Concert Choir
1611(S)

Grade Level: Sophomore/Junior/Senior
Length: One - Two Semester(s)
Credit: .50 - 1.00 Pass/Fail option
Prerequisite: Basic level ability of matching pitches

This course will provide students with an overview of the visual, auditory, physiological, historical, and aesthetic dimensions of choral music. Emphasis will be on the development of healthy and proper vocal production, music reading and aural skills, and ensemble singing in the context of rehearsal and performance. (Students enrolled in the Music Program are eligible to participate in any music sponsored co-curricular activity.)

1612(F) Chamber Choir
1613(S)

Grade Level: Sophomore/Junior/Senior
Length: One - Two Semester(s)
Credit: .50 - 1.00 Pass/Fail option
Prerequisite: Participation in IMSA Concert Choir or by audition; moderate to good music reading skills. Instructor's approval required.

This course provides students with opportunities to explore and perform advanced choral literature including multiple voiced and acapella works. Included will be continued emphasis on developing musicianship in multiple aspects of ensemble performance: tone, diction, phrasing, intonation, balance, precision of execution, and interpretation of the score. Opportunities for student conducting and solo, small and large ensemble performing will be provided. (Students enrolled in the Music Program are eligible to participate in any music sponsored co-curricular activity.)

1620 Advanced Placement Music Theory

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

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 functins, 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.

1630 Art Design I

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .50 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.

1631 Ceramics

Grade Level: Sophomore/Junior/Senior
Length: One Semester
Credit: .50 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 techniques, and use the elements and principles of design as a basis for creating and evaluating ceramic ware.

1633 Photography

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 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.

WELLNESS

1710 Sophomore Wellness

Grade Level: Sophomore
Length: Two Semesters
Credit: 1.00 Pass/Fail Only
Prerequisite: None

This course is designed as an integrated class combining Health Education, Physical Education and Life Skills Management. The focus is on promoting the habits of mind identified in the Standard of Significant Learning which relates to "establishing and committing to a personal wellness lifestyle in the development of the whole self." Content includes health-related physical fitness, ethics, self-esteem, values, decision-making, stress management and tension control, safety and first aid, nutrition, human sexuality, substance abuse, contemporary issues in health, and skill-related sport activities. Students will design and implement an individualized Wellness Plan which includes goal statements and activities.

1715 Junior Wellness

Grade Level: Junior
Length: Two Semesters
Credit: Pass/Fail Only
Prerequisite: None

This course is designed as an independent, year long implementation of the wellness concepts and practices learned during the Sophomore Wellness course. Students will design and follow an individualized Wellness Plan which emphasizes the physical dimension of wellness as well as one "other" dimension of wellness (i.e. spiritual, social, emotional, or intellectual). Students will be required to attend class one day per cycle to demonstrate progress towards meeting the individualized Wellness Plan goals. Any co-curricular, school-sponsored activities are acceptable for wellness credit.

1725 Senior Wellness

Grade Level: Senior
Length: Two Semesters
Credit: Pass/Fail
Prerequisite: None

This course is designed as the third stage of a developmental process to prepare students for personal wellness at IMSA and beyond. Students in Senior Wellness will be placed in autonomous Wellness groups with other seniors in their residential hall wings. A wing representative will meet with the Wellness staff twice per semester to dialogue about wellness concerns and to submit logs, plans, and other assessments for members of their wing. Each individual senior will be responsible for modifying their personal Wellness Plan and participating in activities to meet the goals of the plan.

Independent Study Project

Grade Level: Junior/Senior
Length: One Semester
Credit: .50 Pass/Fail **Project may not be used to satisfy a graduation requirement**
Prerequisite: Team Leader and Director of Academic Programs approval

Team	Fall	Spring
Mathematics	1180	1181
Computer Science	1182	1183
Science	1280	1281
Chemistry	1282	1283
Physics	1284	1285
Biology	1286	1287
English	1380	1381
Social Science	1480	1481
Foreign Language	1580	1581
Music	1680	1681
Art	1682	1683
Wellness	1780	1781
Academy	1880	1881

Independent Study projects enable students to investigate an approved academic topic of their choice under the sponsorship of a faculty advisor. The study may be started as early as the summer preceding the junior year; however, it must be completed by 2 weeks before the end of the semester. The process of this study is as important as the product: a journal-record and where appropriate an annotated bibliography must, therefore, precede submission of the final product, which may be experimental results, a performance, a lecture, a work of fine or applied art, or a paper. Interested students should pick up a packet of materials in the Academic Programs Office. (The credit received for this project may not be applied toward graduation requirements.)

Senior Research Project

Grade Level: Senior
Length: One - Two Semester(s)
Credit: .50 - 2.00 Pass/Fail option
Prerequisite: Team Leader and Director of Academic Programs approval

Team	Fall	Spring
Mathematics	1190	1191
Computer Science	1192	1193
Science	1290	1291
Chemistry	1292	1293
Physics	1294	1295
Biology	1296	1297
English	1390	1391
Social Science	1490	1491
Foreign Language	1590	1591
Music	1690	1691
Art	1692	1693
Wellness	1790	1791
Academy	1890	1891

Senior Research Projects 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 instructional team must be approved by all participating teams prior to the completion of the student's junior year. Each participating team 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.

(January 11, 1996)