

Uni

2015-2016  
**Curriculum  
Guide**

UNIVERSITY OF ILLINOIS LABORATORY HIGH SCHOOL

## University Laboratory High School Curriculum Guide

This curriculum guide includes graduation requirements for Uni High students, a planning guide for the five-year program, descriptions for courses being offered in the curriculum of Uni High for the 2015-2016 school year, independent study guidelines, and concurrent enrollment guidelines.

Uni High provides a high-quality academic program with a wide range of curricular offerings. Because Uni High offers such a rich and diverse program for a small student population, **it is impossible to meet the first choices of all students**. In creating a schedule, Uni High looks to guarantee that graduation requirements will be met and then attempts to meet as many of the elective choices of students as possible. Some courses have enrollment limits. If more students are able to be scheduled for a course than there is capacity, we will generally determine who is able to take the course by random draw starting with seniors, then juniors, etc. until the class is filled. If a different method is used to select students, that method is included with the course description, or we will inform the students and families involved. When scheduling courses with multiple sections, every effort is made to create similar class sizes in order to provide the best educational experience for each student enrolling in that course. Final decisions about offerings will be made after student interest and enrollment in each course are determined.

When students make decisions about course selection, we ask that they consider the entire five-year program. Uni High recommends that students make course selections that correspond with their interests but also represent the best possible preparation for the next step in their education. Students and parents are encouraged to consult with the faculty and counselors at Uni High about possible selections.

Please save the Curriculum Guide for each year until your child graduates.

## **SUBFRESHMAN YEAR REQUIREMENTS**

Subfreshmen are required to take the following courses: Subfreshman English, Foreign Language, Introduction to Social Studies, Science (the Earth Studies semester and the Nature of Science semester), Math 1, Computer Literacy 1, Physical Education, and Interrelated Arts. Students may elect to enroll in any of the following classes: Mixed Chorus, Orchestra, and Jazz Band.

## **GRADUATION REQUIREMENTS**

All students are required to complete 19 3/4 units for graduation at Uni High. Students are required to enroll in a minimum of 6 courses each semester, with at least 300 minutes per day of supervised instruction. Each year students must earn a graded unit from at least four different academic departments at Uni High (English, computer science, fine arts, foreign languages, mathematics, science and social studies).

English	4 units
Foreign Languages	2 units (of the same language) (includes subfreshman year)
Mathematics	3 units (beyond Math 1) - including a) Math 2 b) Algebra II/ Trigonometry c) Advanced Topics in Math, Calculus I (Acc.), or Statistics
Science	3 units (including required courses Intro Bio, Intro Chem, Intro Physics) – all science courses are semester-long; ½ unit each
Social Studies	3 units (including U.S. History)
Physical Education	2 ½ units (4 year sequence at ½ unit per year); in addition, ½ unit of Health is required
Driver Education	¼ unit
Fine Arts	1 unit
Computer Science	1 unit (includes ½ unit subfreshman year)
Health	½ unit
Consumer Education	required online course; not included in unit count

It should be noted that most courses taken in the subfreshman year do not earn any units for graduation but are required during that year. Only computer science and foreign language units from subfreshman year count toward the required departmental units. Students may take elective courses outside of University Laboratory High School. Consult your counselor or page 3 for more information.

**UNIVERSITY LABORATORY HIGH SCHOOL**

**TYPICAL COURSE PLAN**

(Exceptions to this typical schedule must be discussed with a counselor and appropriate department heads.)

	SUBFRESHMEN	FRESHMEN	SOPHOMORES	JUNIORS	SENIORS
<b>ENGLISH</b>	Subfreshman English	Freshman English	Sophomore English	Jr./Sr. Special Topics Courses 1 Unit	Jr./Sr. Special Topics Courses 1 Unit
<b>SOCIAL STUDIES</b>	Introduction to Social Studies	World History	Modern History	U.S. History	Elective
<b>SCIENCE</b>	Fall - Nature of Science Spring - Earth Studies	Intro Biology Biology A	Intro Chemistry Chemistry A	Intro Physics Physics A	Elective
<b>P.E.</b>	P.E.	P.E.	P.E.	P.E.	P.E.
<b>COMPUTER SCIENCE</b>	Computer Literacy 1	Computer Literacy 2	Elective	Elective	Elective
<b>MATHEMATICS</b>	Math 1	Math 2	Algebra II/Trig	Advanced Topics in Math, Acc. Calc. 1, or Statistics	Elective
<b>HEALTH</b>		Health			
<b>FOREIGN LANGUAGES</b>	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Elective (All levels of foreign language instruction are electives after the initial 2-year sequence requirement is fulfilled.)		
<b>FINE ARTS</b>	Interrelated Arts	Electives as available per grade. 1 unit required for graduation.			
<b>DRIVER ED</b>	Driver Education courses taught by JR's Driving School are offered once each semester after school and four times during the summer. Students must be 15 years old by the end of the course to enroll. Course dates, times, and registration forms are available in the Student Services Office.				

# UNIVERSITY LABORATORY HIGH SCHOOL

## 2015-2016 COURSE DESCRIPTIONS

### COMPUTER SCIENCE

The Computer Science curriculum is intended to give all students the background in computer and communications technology they need to be successful in their high school and college courses, and to help students with special interests in information technology explore advanced opportunities in the computer field. The goal is to contribute to both the personal development and educational success of students and to help them to, as required by Illinois learning standards, "use appropriate instruments, electronic equipment, computers and networks to access information, process ideas and communicate results." Uni High's computer and publishing courses focus directly on these technology objectives through a required two-semester Computer Literacy course sequence and five elective courses for advanced students.

All students are required to take two one-semester courses, Computer Literacy 1 and 2, usually during their subfreshman and freshman years. These courses introduce computers and the Internet as tools for communications, research and creativity, and emphasize practical applications that will be useful to students in their future Uni High and college classes.

The elective courses (Computer Programming, Computer Technology, World-Wide Web Development, Yearbook, and Advanced Yearbook) allow students to pursue special interests in software development, computer and electrical engineering and hardware, online and print publishing, computer operating systems and software tools. All of these courses are oriented toward practical applications using modern software and equipment similar to those used in real-life university and commercial settings.

Throughout the computer science curriculum, we stress communication between individuals, cooperation in group work and the ethical use of information technology as foundations for computer applications. It is the human side of computing that is both the most interesting and the most difficult, and we hope that our students will learn to be comfortable with computer and communications technology and appreciate what it allows them to accomplish, both individually and together, while understanding both its capabilities and limitations.

#### **Computer Literacy 1 (Fall or Spring)**

(Subfreshmen)  
(1/2 unit)

The Computer Literacy program is a sequence of two one semester courses, usually taken in the subfreshman and freshman years. The subfreshman level course focuses on skills essential to success in future high school classes, with a minimum of theory or programming. It emphasizes solid proficiency in important personal computing "survival" skills, including basic word processing, electronic mail, library resources, Internet research, online and print design and publishing, ethical use of technology, and basic use of the Microsoft Windows and MacOS operating systems.

#### **Computer Literacy 2 (Fall or Spring)**

(9th grade)  
(1/2 unit)

*Prerequisite: Computer Literacy 1 or equivalent*

Computer Literacy 2 is the second-semester course in introductory computer applications for freshmen (and other new students). It complements Computer Literacy 1, and focuses on group work completing a major project involving computers to research and present information on a topic chosen by the students. Students will use their skills in online research, desktop publishing, presentation software, web authoring, and data manipulation acquired during the Computer Literacy 1 course, while gaining new experience in group cooperation, self-teaching about new computer software, and integrating many different computer skills. Formal units on legal and ethical issues in information science, advanced use of library and online information resources, web development and presentation design are also included.

In 2015-2016, we will offer two slightly different sections of Computer Literacy 2 in the fall and spring semesters. One will be oriented toward computer technology projects (programming, electronics, networks, robotics, etc.), and the other will emphasize creative and media projects such as audio, video, photography, design, social media, etc. Students can choose which of these interests them most on the course selection form, but enrollment will not be guaranteed, depending on how many students pick each option.

#### **Computer Programming**

(10<sup>th</sup> - 12<sup>th</sup> grade)  
(1 unit)

*Prerequisite: Computer Literacy 2 or equivalent*

Computer Programming is a full year, in-depth introduction to modern computer languages and programming. It will introduce students to structured programming techniques including procedures, functions, data structures, important algorithms, program design and object-oriented programming, using C and C++ as the example languages. Students will also explore related aspects of the UNIX operating system, including shell scripts and programming tools. The curriculum includes a minimum of computer theory and history necessary to understand the programming concepts. Students must have a computing applications background equivalent to the Computer Literacy 2 course, but need not have any previous experience in computer programming.

### **Computer Technology (Spring)**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Computer Literacy 2 or equivalent*

This course is intended as an introduction to electrical and computer engineering for students who have an interest in the hardware aspects of computer technology. It provides an overview of computer and communications technology and history, electronic logic and computer design, hardware, software development, installation and computer operations through hands-on exercises. Laboratory activities include designing and building electronic circuits, interfacing with and programming microprocessors to perform useful tasks, and experimenting with computer logic circuits. (Offered in 2015-2016, then alternating years.)

### **World-Wide Web Development (Fall and/or Spring)**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit – can enroll more than once)

*Prerequisite: Computer Literacy 2 or consent of department*

This course is intended for students interested in the technology used to produce documents for the World-Wide Web, as well as those interested in researching, writing and editing information for electronic publication. Students in this course will be responsible for maintaining and expanding Uni High's school Web site, and will produce and organize both existing and new material for our school's electronic publications. The course content includes producing, manipulating and preparing photographs and graphics for Web presentation; the use of both simple and advanced HTML authoring tools; using HTML in a UNIX environment; writing scripts and programs to manipulate databases and produce interactive forms, and application development languages such as Java, Perl, PHP and SQL. Content, design, legal and editorial issues relating to the World-Wide Web and other interactive media are emphasized.

### **Yearbook**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1 unit – can enroll more than once)

This elective course focuses exclusively on the production of the Uni High yearbook and can be taken multiple years with the permission of the instructor. Students are exposed to both traditional publishing on paper and on-line electronic publishing. Students are involved in all aspects of production including: photo manipulation, layout, and advertising. Students desiring to advance their desktop publishing and electronic photography skills should enroll in this course. Yearbook must be taken for a full year.

### **Advanced Yearbook: Editorship**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1 unit – can enroll more than once)

*Prerequisite: Yearbook or Journalism and Consent of Instructor*

Students are admitted into this course only with special permission of the instructor. It meets concurrently with the Yearbook class. Yearbook editors make a yearlong commitment to the production of the school's yearbook. Editor's duties include: determining the yearbook's content, managing staff, writing, photography, editing, designing layouts, and meeting deadlines.

## **ENGLISH**

University High's English program is a sequential five-year study of literature, writing, public speaking, and media. The curriculum begins with a three year core sequence focused on broad geographic, cultural, and historical themes, then moves into a final two years made up of four semesters of required but choice-oriented courses. These semester-long classes center on a variety of specific themes and topics that build on foundations laid in the first three years of English classes and are open to both juniors and seniors. In addition to the five-year program, the English department offers electives: Creative Writing, Journalism, Current Topics in Social Justice, and Gender Studies. Seniors have the option of taking one additional semester-long Junior/Senior Special Topics class in addition to their two required semesters of English in the senior year. (Interested seniors should check with the SSO on the process for signing up for an extra Junior/Senior Special Topics class, which may be completed once all juniors and seniors have been placed in their required English classes, and must also consult with the English Executive Teacher.)

In all of our core courses, literary selections are either classics (ancient and modern) or contemporary selections of high literary merit. Every year, students study works in a variety of literary forms: prose fiction (novels, short stories), non-fiction (essays, autobiographies, and memoirs), drama, poetry, and film. Teachers take care in selecting literature appropriate to the developmental level of students and works that complement other offerings in terms of theme, historical time period, and cultural diversity. Students acquire not only knowledge and understanding of literature but also the tools to critically analyze new texts in a variety of forms and genres.

Writing is a central focus of the English department curriculum. The English faculty approaches writing as a process--one that is creative and work intensive, initially messy but evolving toward ever greater levels of focus. We teach students to aspire toward an end product that is detailed, unified, and coherent. We emphasize content and clarity over length. Most importantly, we encourage writing that expresses a fresh, individual voice. We stress the fundamentals – structure, mechanics, research, documentation, and citation – as crucial steps toward developing a distinctive and original voice and articulating an individual point of view. At each level of the curriculum we emphasize purpose, audience, thesis, invention, organization, drafting, providing support, seeking feedback, and intensive revision.

In the course of our five-year curriculum, students will gain an awareness of their own strengths as writers and the flexibility to write successfully in a wide variety of contexts, from composing a concise, well supported essay for the SAT or AP exam to crafting an incisive piece of literary criticism, a persuasive letter to the editor, or a compelling report of scientific findings. Students will graduate with the understanding that they have something worthwhile to say and the skills to say it with authority and panache.

**Subfreshman English (World Literature)**  
(Subfreshmen)  
(1 unit)

Subfreshman English emphasizes the languages needed for academic success.

Subfreshman English deals with the language of writing. The focus moves from paragraph development to expository essays, including the basics of academic research. Students learn to fully support a specific, focused thesis. Creative and personal essays also play a role in the language of writing.

Subfreshman English deals with the language of literature through the study of genre. Students learn the basics of literary analysis with short stories, novels, memoirs, drama (including Shakespeare), poetry, and film from international sources. A unit on classic mythology will provide the students with a frame of reference for much of Western Literature. Thematically the literature will focus on coming-of-age stories from around the world.

Subfreshman English deals with the mechanics of language through the study of grammar. With a goal of improving their own writing, students learn grammar descriptively through analysis of sentences and their own writing. Particular emphasis falls on parts of speech, clauses, basic sentence types and various phrases.

**Freshman English (American Literature)**  
(9<sup>th</sup> grade)  
(1 unit)

Freshman English focuses primarily on American literature. Students learn how to appreciate the historical context of specific literary works; describe the technical qualities of important American short stories, novels, plays, biographies, essays, and poems; explain how theme, character, and setting contribute to meaning; describe the characteristics of a specific writer's style; respond to literature from personal, creative, and critical points of view; and analyze literary passages.

Student writing is essential to the course. Students compose summaries, critiques, essays, research papers, journal entries, short narratives, and poems. Grades reflect how well students prepare unified and coherent essays; paraphrase, summarize, and make generalizations; use evidence to support assertions; locate, evaluate, organize, and synthesize information from various sources; use correct grammar, spelling, punctuation, and capitalization; edit and revise for word choice, organization, consistent point of view, and coherence; and create original poems, monologues, reports, plays, and stories.

Freshman English also reinforces listening and speaking skills. Students learn how to critique an oral presentation; convey complex ideas during class discussion; design and produce oral reports and multi-media compositions; ask relevant questions; deliver a formal speech; and debate.

**Sophomore English (British Literature)**  
(10<sup>th</sup> grade)  
(1 unit)

The sophomore year in English reinforces the critical reading, essay drafting, and creative writing skills developed in earlier years and introduces students to more advanced tools of essay organization. Students have ample opportunity to develop their skills of public speaking and oral interpretation of texts. The Sophomore English curriculum emphasizes writing as a process, including multiple levels of drafting, peer review, and revision. Major multi-draft papers students write during the sophomore year include a poem explication and a literary comparison essay. Grammar instruction occurs in the context of writing.

The primary focus of the sophomore literature curriculum is British literature. Students study works of literature from ancient to modern, engaging with multiple genres, including the short story, the non-fiction essay, the novel, poetry, film, and drama. Major works include William Shakespeare's *A Midsummer Night's Dream*, Christopher Marlowe's *Doctor Faustus*, John Milton's *Paradise Lost*, Mary Shelley's *Frankenstein*, Oscar Wilde's *The Importance of Being Earnest*, Jean Rhys's *Voyage in the Dark*, and Jamaica Kincaid's *Lucy*. Students in Sophomore English explore works of literature in their larger historical and cultural contexts and are encouraged to make connections between texts. At the same time, they get daily practice examining texts in detail and learning the invaluable skills required for close reading. Every week, the course also gives students opportunity to nurture their passion for literature during days reserved for silent, independent reading.

**Junior and Senior Special Topics Courses (Fall and Spring)**  
(1/2 unit per semester, 2 semesters each year)

**The Nineteenth-Century British Novel (Two sections, Fall)**  
(1/2 unit)

In nineteenth-century England, the novel was in its heyday; it was a wildly popular genre that reached a large and increasingly literate audience. Nineteenth-century readers became educated about the evolving social realities of their world in part through the fiction they read, which often tackled complex issues of romantic love, marriage and family relationships, shifting class distinctions, and changing gender roles. Our study of the novel's development throughout the century will be grounded in a basic understanding of the history of the novel and its emergence from a new, artistically uncertain and at times morally suspect form to the preeminent literary genre of the nineteenth century. We will explore how the concepts of realism, romance, sentimentalism, didacticism, and gothic horror inform British novels spanning the century. Throughout the course, we will consider how the novels we study portray historical trends arising from industrialization and the growth of urban centers and consider how each reflects changes in the conventions and perceptions of class and gender as the century proceeds. The reading list will include Jane Austen, Charlotte Brontë, Charles Dickens, Wilkie Collins, Elizabeth Gaskell, and Thomas Hardy.

### **The Twentieth-Century Novel (Two sections, Fall)**

(1/2 unit)

The novel emerged as the dominant literary form of the twentieth century—a century marked by remarkable social and scientific progress as well as genocide, war, postcolonial tensions, and ecological devastation. Literary fiction in this century tended to be experimental in nature, as writers tried to account for what it means to be a human individual amid an increasingly dehumanizing world. This course will focus on some of the most notable and innovative fictional experiments that emerged in the aftermath of the first and second World Wars and during the Cold War. The reading list will include *Mrs. Dalloway*, by Virginia Woolf; *The Sun Also Rises*, by Ernest Hemingway; *The Metamorphosis*, by Franz Kafka; *The Stranger*, by Albert Camus; *Wide Sargasso Sea*, by Jean Rhys; and *Song of Solomon*, by Toni Morrison.

### **History as Fiction (Two sections, Spring)**

(1/2 unit)

This course will explore some of the ways that postmodern American fiction has made history its subject—not only incorporating characters and plotlines and settings from historical events, but interrogating and drawing attention to the constructed nature of historical narrative itself. Narrative fiction based upon historical events is nothing new, but in the latter half of the twentieth century, novelists began to blur the boundaries between imaginative fiction and factual history in increasingly playful ways. In the postmodern era, fiction and history intersect to an unprecedented degree, and this course will engage students in some of the challenging questions this intersection raises: What are the consequences of acknowledging the degree to which the traditional methods of writing history overlap with those of imaginative fiction? How might an imaginative novel compel its readers to reexamine our understanding or interpretation of a historical era or event? In what ways might such fiction generate more active interest in history as an interpretive, critical discipline? And in what ways does the use of history enhance the fiction's illusion of reality, the sense that “this really happened”?

The reading will include the following novels: *Ragtime*, by E. L. Doctorow (1975); *Mumbo Jumbo*, by Ishmael Reed (1972); *Libra*, by Don Delillo (1992); *Slaughterhouse-Five*, by Kurt Vonnegut (1968); and *Kindred*, by Octavia E. Butler (1979).

### **Non-Fiction Writing (Fall and Spring)**

(1/2 unit)

This course focuses on writing in a variety of non-fiction genres. The course will allow students to concentrate more fully on their individual writing style and concerns. Even as the course will build on the academic writing already a part of the English curriculum, it will allow for incorporating 21<sup>st</sup> Century Literacies – writing with video, podcasting, blogging, etc. In this way, it will bridge the traditional with the innovative. Emphasis will be placed on developing personal writing habits that take into account a variety of methods and audiences. As in all the English Seminar courses, research techniques will be covered. Assignments will vary in length and cover both formal and informal situations. The exact content of the course will vary depending upon both the teacher and the students.

### **Poetry: British and American (Two sections, Spring)**

(1/2 unit)

This course begins by exploring a sample of contemporary poets and considering the current state of poetry, and proceeds by considering the importance of poetry to cultures throughout human history and exploring the role of poetry in the modern English-speaking world. The semester will include a brief survey of British poetry from Shakespeare to the Romantics and a look at the increasing importance of American and Irish voices in English poetry as the twentieth century progresses. As we read, we will explore the central role poetry once played in American life – poetry being published in newspapers and popular magazines, people of all ages learning poetry by heart as a matter of course both in and beyond school – and question why poetry has become less of a central feature of modern American life. To this end, we look closely at recent projects that aim to increase poetry's visibility and vitality in contemporary American life (specifically Robert Pinsky's Favorite Poem Project and Billy Collins' Poetry 180 project), and analyze their respective levels of success. Students end the semester by creating their own multimedia project aimed at publicizing and promoting poetry in their community (either the Uni community or the entire C-U community).

### **The Short Story (Fall and Spring)**

(1/2 unit)

This course will look at the short story as a genre, exploring a diverse range of styles and approaches from its emergence in the nineteenth century to recent developments in the twenty-first. We will read individual stories from a range of authors from various backgrounds, and we will also look at published collections of stories by a single author, to explore how stories grouped together can take on a distinctive identity as a book, with thematic and stylistic coherence. In addition to a photocopied packet of individual stories, required texts may include James Joyce's *Dubliners*, Ernest Hemingway's *In Our Time*, Tim O'Brien's *The Things They Carried*, J. D. Salinger's *Nine Stories*, Flannery O'Connor's *A Good Man Is Hard to Find*, Lorrie Moore's *Self-Help*, James Baldwin's *Going to Meet the Man*, Jhumpa Lahiri's *Interpreter of Maladies*, George Saunders's *The Tenth of December*, and the recent collection of short fiction written by veterans of the wars in Iraq and Afghanistan, *Fire and Forget*. The course will be discussion-based, with a strong emphasis on participation, and written assignments will include both literary-critical analysis and creative writing.

### **Other English Electives**

#### **Creative Writing I (Fall)**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 - 1 unit)

Creative Writing is an elective course, which focuses on the analysis and composition of various literary genres. By offering some class time to engage in directed writing or free writing each day, this course encourages students to develop a daily writing practice. Creative writing also provides opportunities to read works by contemporary and classic authors and to discuss these texts *as* writing. Throughout the semester, students have the chance to experiment with narrative, poetic, dramatic, and mixed-genre forms in their writing. A workshop approach with regular sessions of peer and instructor review gives students the benefit of multiple perspectives on their writing and allows students to develop their critical capacities by reading other students' writing. The first semester focuses on prose and poetry. Students have the opportunity to participate in National Novel Writing Month in November during fall semesters when the class as a whole elects to do so.

**Creative Writing II (Spring)**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 - 1 unit)

The second semester continues work on prose and poetry, and adds an additional focus on drama and other performance-oriented writing.

**Students may enroll in either semester or for the full year of Creative Writing.**

**Journalism**

(9<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit, may be repeated for credit)

The journalism class is a hands-on, writing-intensive class where students participate in every aspect of producing Uni High's school newspaper, the *Gargoyle*. Students learn to tell compelling stories in traditional and multimedia formats, to edit their own and others' work, to conduct research and interviews and to take photos. In addition to the hands-on work, there is a classroom component that involves reading both good and bad journalism, discussing current issues in the media and exploring the First Amendment and media law. Students can also choose to compete at the IHSA Journalism sectional and state championships. This class may be taken fall semester, spring semester, or both semesters.

**Advanced Journalism: Editors**

(11<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit, may be repeated for credit)

After two semesters, students may sign up for advanced journalism and apply to be an editor. Editors will continue to work on their writing skills while exploring more complex journalism topics such as narrative journalism, broadcast and other areas according to students' interests. They may also serve as Gargoyle editors, where they will be responsible for the content of the Gargoyle, Facebook and Twitter, and will learn advanced editing skills. Students can also choose to compete at the IHSA Journalism sectional and state championships. This class may be taken fall semester, spring semester, or both semesters.

**Gender Studies (Fall)**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

This semester-long elective for Sophomores through Seniors will provide an introduction to Gender Studies as an academic subject, offering an overview of the history of feminism, delving into biological versus cultural aspects of sex and gender, and considering the ways that an issue of gender affects education, family life, and popular culture in the US. Assignments will include weekly reading and vigorous participation in discussions, a written gender analysis of a historical, literary, or cultural text, a gender fieldwork project, and a presentation of a creative project relating to gender.

**Current Topics in Social Justice (Spring)**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

Current Topics in Social Justice I is a semester elective open to seniors, juniors and sophomores. Students enrolled in Current Topics in Social Justice do weekly volunteer work in community social service agencies. Students must be interested in and committed to the volunteer component. Various readings, lectures, guest speakers, and special assignments add to the students' experiences. Group discussion and journal writing play a key role. (*Enrollment limit: 16 students*)

**FINE ARTS**

The offerings of the Fine Arts Department foster awareness of the elements common to all the arts as well as of the distinctive characteristics of the various visual, verbal, and performing arts. We want students to cultivate an awareness of and appreciation for the various art forms while developing their own criteria for making informal value judgments. When students learn to create and/or perform in images, gestures, sounds and words, they discover new ways to shape and share their ideas with others. As a result of these experiences, the students are challenged to continue to experience the arts as creator, re-creator, and/or intelligent consumer. Whenever possible and appropriate, we will use appropriate instruments, electronic equipment, computers and networks to access information, process ideas and communicate results.

**Film Study (Fall)**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

The Film Study elective course engages students in analysis and appreciation of the history of film, the art of film, and film as literature. Students will learn how to "read" a film looking at plot, character, theme, and tone along with the influence of lighting, sound, camera, acting, and audience. In addition to learning film language, units of study include: film history, film criticism, and specific genres such as film noir, westerns, musicals, independent and international films, and documentary. Meets graduation requirement.

### **Public Speaking (Spring)**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

Public speaking covers the basics of presentational speaking in a variety of settings. Students will learn relaxation techniques, vocal projection, application of Aristotle's Poetics, materials preparation and small group presentation in the first quarter. In the second quarter students will build upon those skills and move to speaking in larger settings. Throughout the semester each student will be required to be the announcer for Uni athletic/public events, create an interesting power point presentation, and lead class discussion.

### **Interrelated Arts (Fall and Spring)**

(Subfreshmen)

(1/2 unit)

Interrelated Arts is a team-taught course for subfreshmen which includes drama, music, and visual arts.

### **Jazz Band**

(Subfreshmen - 12<sup>th</sup> grade)

(1/4 unit - can enroll more than once)

Jazz Band is open to any student at University Laboratory High School. In addition to studying various forms of jazz literature, the study and utilization of improvisation is strongly encouraged. Jazz Band currently meets once a week and can be taken multiple years. All enrollees are further divided into two jazz bands of different levels. Does not meet the Fine Arts graduation requirement.

### **Madrigals**

(9<sup>th</sup> - 12<sup>th</sup> grade)

(1/4 unit - can enroll more than once – by audition only)

Madrigals is a year-long course open to students by audition. Madrigals meet after school and students must also be enrolled in chorus. Madrigals may be taken multiple years. This group performs frequently. Does not meet the Fine Arts graduation requirement.

### **Mixed Chorus**

(Subfreshmen - 12<sup>th</sup> grade)

(1/2 unit - can enroll more than once)

Mixed Chorus is open to any student at University Laboratory High School. The objectives are (1) to give students experience in performing in a large choral group, (2) to provide an opportunity to learn from others and (3) to learn to submerge individual goals in order to attain unity in the larger group. Mixed Chorus may be taken multiple years. Meets graduation requirement.

### **Music Theory**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 or 1 unit)

Music Theory is an introductory study of the structure of music. It is an elective course planned for those students desiring a more thorough understanding of music based on a knowledge of the techniques and skills involved in its structure. The course is conducted in a laboratory manner, with emphasis on listening, singing, writing, and harmonic analysis. Students may take this course as fall semester only, OR as a year-long course. Meets graduation requirement.

### **Orchestra**

(Subfreshmen - 12<sup>th</sup> grade)

(1/2 unit - can enroll more than once)

Orchestra is open to any student at University Laboratory High School. The objectives are very similar to the ones listed for Mixed Chorus, with the only exception being that the orchestra studies representative literature from the orchestral (including separate wind and string literature when possible) genre. Orchestra may be taken multiple years. Meets graduation requirement.

### **Studio Art I**

(1/2 unit)

(9<sup>th</sup> - 12<sup>th</sup> grade )

This project-based, hands-on course explores the following:

- Introduction to principles of design, emphasizing composition
- Drawing from observation, emphasizing linear perspective
- Painting - ink wash and watercolor
- Ceramics
- Mythology - mixed media sculpture

The course may be repeated with permission of the instructor. Meets graduation requirement.

### **Two-Dimensional Art**

(9<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Studio Art I or Permission of Instructor*

Designed to build upon Art I experiences, this course would address mixed media drawing, painting, color theory, printmaking, and digital imaging. Contemporary and historical art practices will be addressed that relate to each unit. Critiques and presentations will help familiarize students with the vocabulary and concerns of the visual arts. The course may be repeated with permission of the instructor. Meets graduation requirement.

### **Three-Dimensional Art**

(9<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Studio Art I or Permission of Instructor*

This course is designed to provide a firm grounding in the rudiments of sculptural practice. Major media include ceramics, paper mache, found object art, assemblage, and model making. Figurative and architectural units are to be included but other units such as fiber, puppetry, craft art may change from session to session. Readings, slide presentations, discussions and critiques will provide context and grounding for projects. The course may be repeated with permission of the instructor. Meets graduation requirement.

### **Theatre Arts I**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

Theatre Arts I is an introductory course focusing on an actor's approach to a role, including improvisation, scene and monologue work. This course will also cover personnel of the theatre and the elements of production, including make-up, costume, lighting and scene design. Internet research will be part of some assignments. Meets graduation requirement.

### **Theatre Arts II**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Theatre Arts I or Permission of Instructor*

Theatre Arts II covers history of the theatre, periods and styles with units on the *Commedia del Arte* and Shakespeare. In the last quarter, the techniques of story theatre will be explored and will include performances for local school children. In working with elements of production, students will be assigned an area of responsibility for each semester's production. The class will include additional activities such as attending local theatre productions. This course may be repeated with the permission of the instructor. Internet research will be part of some assignments. Meets graduation requirement.

### **Dramatic Topics Exploration**

(11<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Theatre Arts I and II; career interest in the Dramatic Arts*

This class will meet at the same time as Theatre Arts II. This class allows the student to explore the aspect of the dramatic arts that most appeals to them (encompassing Theatre, Television, Film, Etc.). Through academic study and concrete practice, the student will gain new knowledge and skill in conjunction with an understanding of how the dramatic arts use similar concepts. Students may study one area in depth, or choose to look at related jobs. Students will, in conjunction with the teacher, develop a focused plan of study in their area of interest. Each student will present 4 project updates over the course of the semester, and a final paper, or equivalent at the end of the semester.

## **FOREIGN LANGUAGES**

The Foreign Languages curriculum offers a four-year sequential program in French, German, Japanese, Spanish, and Latin. Two years of one foreign language are **required for all students**. Although only two are required, the vast majority complete four years of study in one language and many begin a second language. One may begin (with permission) a second foreign language after completing two years of a first language.

It is also the goal of the department to provide students an opportunity to travel in the target country during their course of study. Trips and exchanges are conducted in the following languages: German, Japanese, French, Latin, and Spanish. The primary goal of the Foreign Languages curriculum is to help students develop proficiency skills in listening, reading and writing. The curriculum's purpose is to increase the student's knowledge and appreciation of diverse cultures of the countries whose languages they are learning. Perhaps the best summations of our department's goals are made by the proposed National Foreign Language Goals and Standards:

#### Communication in Languages Other Than English

- Students engage in conversations, provide and obtain information, express feelings and emotions, and exchange opinions.
- Students understand and interpret written and spoken language on a variety of topics.
- Students present information, concepts, and ideas to an audience of listeners or readers on a variety of topics.

#### Gain Knowledge and Understanding of Other Cultures

- Students demonstrate an understanding of the relationship between the practices and perspectives of the culture studied.
- Students demonstrate an understanding of the relationship between the products and perspectives of the culture studied.

#### Connect With Other Disciplines and Acquire Information

- Students reinforce and further their knowledge of other disciplines through the foreign language.
- Students acquire information and recognize the distinctive viewpoints that are only available through the foreign language and its cultures.

#### Insight into the Nature of Language and Culture

- Students demonstrate understanding of the nature of language through comparisons of the language studied and their own.
- Students demonstrate understanding of the concept of culture through comparison of the cultures studied and their own.

#### Participate in Multilingual Communities at Home and Around the World

- Students use the language both within and beyond the school setting.
- Students show evidence of becoming life-long learners by using the language for personal enjoyment and enrichment.

## ***Foreign Language Placement Procedures***

### Subfreshmen Placement

- Incoming students will be assigned to a Level 1 language class. Levels 1 and 2 in the assigned language must be completed before switching to a new language. (This assignment will be indicated on class schedules which will be sent to you prior to school registration.). Students who have had only one year of study of a language in middle school or junior high school are not eligible for a Level 2 class at Uni High. These students may wish to begin another language at Uni High. Placement for students with more than one year of prior study will be decided on an individual basis. Please remember that language study out of sequence with the rest of one's grade level will result in future scheduling conflicts.
- Much of the success of Uni High's foreign languages program derives from our policy of limiting class sizes so that there will be ample time for individual practice during class. We intend to hold fast to this policy and not overload any language section.

### Transfer Students

Placement of transfer students with prior language experience will be made on an individual basis. (Consultation with language instructor and department chair).

### Current Students

Placement of students taking language instruction outside of University High School will be done on an individual basis. (Consultation with language instructor and department chair)

### **French, Spanish, and German 1**

(1 unit)

First year French, Spanish, and German students will take the first steps toward learning how to communicate in another language. They learn how to greet people and what to say in everyday situations. They learn to talk about themselves, their friends and their family in the foreign language--to describe them, to tell what they like and don't like to do, how old they are, how they feel, what jobs they have or the courses they take, and the things they own. They learn how to pronounce the sounds of the language correctly and with the appropriate accent and intonation. Depending upon the language, they will be able to write lists, simple sentences, questions, and later paragraphs and short compositions. Basic word processing in the target language will also be introduced. They are able to understand what they hear others say or what they see written about these same topics. They learn ways to read some things that are new to them.

In class, students may from time to time see videos and movies, glean information from language specific web sites, play games, listen to guest speakers, sing, give reports, and perform skits and role-plays. In each language class, students become acquainted with everyday life of the people whose language they are learning. They will also become familiar with the geography, national landmarks, traditions, and history of the country.

### **French, Spanish, and German 2**

(1 unit)

In their second year of language study, French, Spanish and German students learn to express their ideas on a wider range of topics and with improved pronunciation, accent and intonation. They learn how to talk comfortably about ordinary events that happened in the past, and about what they would like to see happen in the future. They learn ways to make their ideas understood even if they may not know the exact word. They learn how to listen to the spoken language in order to follow the main message being communicated. They learn strategies for reading a text in the foreign language that may contain some unfamiliar words. They learn how to get their message across when writing paragraphs and short compositions and the elements of grammar that will enable them to express themselves clearly. Word processing in the target language, as well as the use of on-line reference materials will be covered. As in the first year class, classroom activities include games, skits, songs, reports, and films. Students continue the process of discovering the everyday life, customs, and culture of the people through the use of on-line materials and e-mail.

### **French, Spanish, and German 3**

(1 unit)

Level 3 students become increasingly more able to use the language to communicate a variety of messages for more extended periods of time, and with more confidence. They become more comfortable with listening to native speech and with reading unfamiliar material. They learn to express their opinions, to summarize, to give more detailed explanation and descriptions, and to create with the language. As in all levels, they learn the vocabulary and language structures necessary to express themselves clearly. Students begin to read samples from the literature of the country whose language they are learning, as well as a variety of other kinds of written texts, such as magazine articles and advertisements. Role-playing games, discussions, oral reports, and films are classroom activities typical of a third-year French and German language class. Students learn to research topics on the web and make presentations to the class using presentation software such as PowerPoint.

### **French, Spanish, and German 4**

(1 unit)

In the fourth year of language study, French, German and Spanish students are able to deal with more complicated situations in the foreign language. They begin to be able to analyze what they hear and read, and to write well-organized, more detailed, and lengthier compositions. They read and discuss well-known works of literature and also read the kinds of materials that native speakers in the foreign culture might read, such as magazine and newspaper articles. They may view and discuss foreign films and television/radio broadcasts. Many of the television/radio broadcasts are accessed via the Internet. In short, Level 4 students learn that they can get along in the foreign culture with some ease.

### **Japanese 1**

(1 unit)

Students will take the first step toward learning how to communicate in Japanese. They will learn how to greet people and what to say in everyday situations. They will learn to talk about themselves, their friends and their family, and they will be able to understand what others say about these same topics. Students will learn to read, pronounce and write the two basic writing systems (hiragana and katakana) and will also learn a limited number of the most commonly used kanji (characters borrowed from Chinese). They will be able to write words, lists, and simple sentences. They will read familiar material, and will learn ways to read some things that are new to them. They will begin to gain an understanding of the cultural aspects of the language, such as using the appropriate level of formality. Many everyday aspects of Japanese culture will be explored via the web.

In class, Japanese 1 students may from time to time view videos and slides, play games, practice calligraphy, sing, and perform skits. Students will become acquainted with everyday life in Japan and will also become familiar with the geography, national landmarks, foods, festivals, school and family life, and traditions and values of the Japanese people.

### **Japanese 2**

(1 unit)

In Japanese 2, students can expect to increase their communicative ability in the five basic areas of reading, writing, listening, speaking, and cultural awareness. Knowledge of the two syllabaries (hiragana and katakana) is assumed. Knowledge of kanji (Chinese characters) covered in Japanese 1 is also assumed. Emphasis will be placed on expanding vocabulary, comprehending and utilizing formal and informal forms of grammar, and on writing skills. Kanji instruction will continue at the rate of 50 per semester. A special emphasis will be placed on oral communication as well. Classroom activities will be similar to those described for Japanese I.

### **Japanese 3**

(1 unit)

Japanese 3 involves the continued and expanded study of the written and spoken language. Japanese 3 assumes mastery of the hiragana and katakana syllabaries and of the 150-200 kanji covered in Japanese 1 and 2. Approximately 100 new kanji will be learned. Students will be expected to function in class entirely in Japanese. They will learn to express their opinions, to summarize, and to give more detailed explanations and description. They will begin to learn the appropriate uses of honorific speech as well. Students will begin to read a book, *A Homestay in Japan: Nihon no Deai*, that relates the day-to-day experiences of an American exchange student in Japan. Students will continue to gain an appreciation for Japanese culture through language activities, films, video programs, on-line materials, slides, songs, games, campus events, and guest speakers.

### **Japanese 4**

(1 unit)

Japanese 4 is a yearlong course designed for students who have completed Japanese 3 or who have an equivalent ability in the Japanese language. The course involves the continued and expanded study of the written language, vocabulary, and contextual usage of appropriate sentence patterns designed to enhance the students' interactive skills in Japanese. Japanese 4 will assume mastery of the approximately 300 kanji covered in Japanese 1, 2, and 3. Students will be expected to function in class entirely in Japanese, in culturally and linguistically appropriate ways. Students will learn to express their opinions, to summarize, and to give more detailed explanations and descriptions. They will continue to learn the appropriate uses of honorific speech. Students will read longer pieces of writing in Japanese, and they will learn about Japanese culture in the context of their language study. The Web will be used to read current news articles, explore culture topics, and Japanese story reading.

### **Latin 1**

(1 unit)

The Latin Program at University Laboratory High School normally occupies four years. The objective of the first three years of the program is to prepare students to read and enjoy authentic Latin authors in the original. This training both introduces them to a civilization from which the Founding Fathers drew inspiration at the very beginning of the Republic, and accustoms them to close and accurate understanding of much vocabulary still in common use in everyday English.

The *Ecce Romani!* Series will introduce students to the Latin language, as well as to Roman history, civilization and culture. In the first year, students will begin their study of the language by reading simple Latin prose that presents basic grammatical patterns and vocabulary. Grammatical patterns will include: regular and irregular verbs, the function of the case system, word order, and the declensions of nouns, pronouns, and adjectives. Stress will be placed on oral delivery.

### **Latin 2**

(1 unit)

In Latin 2, students will further their control of the language through additional work on Latin grammar and the study of more complex prose. The readings in Latin 2 are designed as an introduction to the politics of the Roman world as seen in the provinces and in the imperial capital. Grammar covered in the second year will include: a variety of subordinate clauses featuring participles, gerundives, infinitives, and subjunctives. Toward the end of the year, students will be introduced to easy passages drawn from the classical authors. Students will be required to use the Internet to get information on important Latin authors and leaders, Greek sculptors and artists, etc.

### **Latin 3**

(1 unit)

In Latin 3, The *Ecce Romani* Series (book 5) will be completed, and the grammar, syntax and vocabulary presented in the preceding volumes reviewed. Occasional presentations on background, history and literature will provide a context in which further reading is developed. Choice of texts will vary and may include passages from Cicero's Speeches, extracts from Pliny's Letters, or selections from a Roman poet such as Ovid. The texts will be read with careful attention to questions of more advanced grammar and to the art of translation into English. At the end of the third year, students should have acquired the basis for reading authentic Latin authors with appreciation. As in Latin 3 students will be required to use the Internet to get information on important Latin authors and leaders, Greek sculptors and artists, etc.

#### Latin 4

(1 unit)

Latin 4 will build on skills in Latin syntax and morphology already acquired. Continued emphasis will be on the reading of actual authors. In particular, Books 1, 2, 4 and 6 of Virgil's Aeneid will be studied. Methodology will be: translation of the text, grammatical explanation, discussion of the poetic merits of the work, and background and civilization. Further readings of prose authors, such as Cicero and Livy, and of poets including Catullus, Ovid and Horace, will be introduced as appropriate. Sight passages will be assigned in order to foster understanding of grammatical and rhetorical structure. During second semester, students will choose a relevant topic. With the guidance of their teacher, students will write both a rough and finished draft, and will make an oral presentation to the class. Students are encouraged to use internet resources to research their topics and presentation software such as PowerPoint to deliver their presentation. Students may take Advanced Placement tests as appropriate.

## MATHEMATICS

The Mathematics Department is committed to providing a quality program in college preparatory mathematics. Our goal is to equip all students graduating from Uni High with the prerequisites in mathematics to succeed in their chosen course of study at any university in the United States. We are also committed to using the NCTM Standards and the Common Core State Standards as guidelines for our curriculum. At all course levels, we emphasize approaching problems from the numerical, geometric, and analytic points of view and developing the student's ability to communicate about mathematics both orally and in writing. We want the students to value the role of both investigation and proof in mathematics, and we use technology where it is helpful in supporting these aims. Calculators are used in all courses, and students use specialized technology such as spreadsheets, dynamic geometry, computer algebra systems, the internet, and other software packages at various times to represent information, form conjectures, solve problems, and communicate results.

Mathematics is a language for describing patterns in the world around us. We believe that when students recognize that mathematics comes from a rich historical development, and that new mathematical ideas, applications, and algorithms are continually being generated, they will learn to value mathematics not only for what it can do but for what it is. If students experience the wonder of mathematics and are intrigued by a mathematical curiosity, they will come to appreciate and even enjoy the process. Although mathematics is a useful subject that helps us find the amount spent on groceries, communicate scientific relationships, and model problems involving interest, it is also a wonderful subject in itself, with startling relationships and connections that are fascinating to think about.

#### **Math Department Placement Procedures**

All subfreshmen entering Uni will automatically be placed into Math 1. Freshmen entering Uni will be placed into Math 1 unless they take and pass the equivalent of the final exam for Math 1. Students entering in sophomore, junior, or senior years may automatically place out of a Uni math course only if they have received a grade of C or better on a high school transcript for a substantially equivalent course. Otherwise, they must take placement exams. A passing score on a placement exam qualifies the student to take the next course in the Uni sequence. Placement exams (multiple-choice/short answer format) are available in the following subjects:

- Algebra I (un-timed, graphing calculator allowed, but not required)
- Geometry (50 minute, graphing calculator allowed, but not required)
- Algebra II (50 minute, graphing calculator required)
- Trigonometry (50 minutes, graphing calculator required)
- **In addition**, new students with grades of B or better in an Algebra 2-equivalent courses who wish to enter Calculus must take and pass **both** Algebra 2 and Trigonometry proficiency exams.

Note: These proficiency guidelines are directed towards students just entering University High School. Please contact a member of the Mathematics Department (tel. 333-6034, or email hcrussel@illinois.edu) if these guidelines do not answer your questions, or to arrange for placement tests.

#### Math 1

(Subfreshman)

(1 unit)

This first math course for Uni students introduces them to key ideas and skills. This course integrates topics from algebra, geometry, and statistics, with topics that include facility with basic operations on real numbers, modeling, systems of linear equations and inequalities, an introduction to matrix arithmetic, work with linear and exponential functions, the function concept, recursion, congruence, coordinate geometry, geometric proofs, linear regressions, and residual analysis. Use of a graphing calculator and spreadsheets is taught and encouraged throughout the course.

#### Math 2

(9<sup>th</sup> grade)

(1 unit)

This second integrated course continues the functions strand from Math 1 by adding quadratic functions and radical expressions, absolute value, piecewise, and inverse functions. In the algebra strand, students learn algebraic and graphical techniques for solving quadratic equations, are introduced to complex numbers, and use inverse matrices. In the geometry strand, students work with properties of geometric figures including polygons and circles, similarity, and right triangle trigonometry. They also undertake a study of probability. Students continue to use graphing calculators, spreadsheets, *Mathematica*, and geometry software.

### **Algebra 2 with Trigonometry**

(1 unit)

*Prerequisite: Math 2*

Algebra 2 provides an in-depth grounding in elementary functions, as well as skill development in classical algebraic topics. Many ideas from Algebra 1 are extended to more complex applications. New topics include: matrices, complex numbers, rational exponents, radicals, rational functions and expressions, inequalities, logarithms, power functions, conic sections, solving systems, and various application problems. The course also includes a study of trigonometry focusing on modeling with periodic functions and trigonometric identities and equations. Graphing calculators are used extensively throughout the course, and students may use other technologies at times.

### **Advanced Topics in Mathematics**

(1 unit)

*Prerequisite: Algebra 2 with Trigonometry*

This course will give students further preparation for a successful study of calculus and will introduce students to concepts of discrete mathematics which are vital in the study of computer science, social sciences, and other fields. Precalculus topics include vectors, complex numbers, polar graphs, and polynomial theory, with extensive work on trigonometric identities, rational functions, and function algebra. Discrete topics include mathematical induction, elementary logic, fractals, combinatorics, and probability. Graphing calculator use is integral to the course.

### **Statistics**

(1 unit)

*Prerequisite: Algebra 2 with Trigonometry*

This course is roughly equivalent to Statistics 100 at UIUC, and incorporates all topics on the Advanced Placement Statistics syllabus. The major theme of the course is "interpreting the world around us;" tools developed include the design of experiments, hypothesis testing, and analysis of variation. Students use graphing calculators, statistical software packages, spreadsheets, and simulation software to explore concepts and analyze results. Individual and team projects each semester, as well as several analyses of articles in the media, help students both to apply the concepts and to see how others have applied them.

### **Accelerated Calculus 1**

(1 unit)

*Prerequisite: Algebra 2 with Trigonometry, successful performance on a mastery exam, and permission of the Math Department Chair.*

This course is offered to qualified students who have shown consistently strong performance throughout their first three math courses, to include mastery of additional topics in the Geometry and Algebra 2 curricula, and have demonstrated a facility with calculations and swift recall of previously-learned skills. The syllabi for the University of Illinois and Parkland College first semester calculus and for the Advanced Placement Exam in Calculus (AB) will be used as a guide for course content, but additional topics of a more theoretical nature, such as a more careful consideration of limits are also included. Content includes techniques and applications of differentiation and integration.

### **Calculus 1**

(1 unit)

*Prerequisite: Advanced Topics in Mathematics*

The syllabi for the University of Illinois and Parkland College first semester calculus and for the Advanced Placement Exam in Calculus (AB) will be used as guides for course content. Emphasis will be placed on an understanding of concepts and mastery of the techniques and applications of differentiation and integration. Students use graphing calculators as well as computer algebra systems and other software.

### **Accelerated Calculus 2/3 (Fall and/or Spring)**

(Each 1/2 unit)

*Prerequisite: Acc. Calculus 1*

Accelerated Calculus 2 includes polar coordinates and conic sections, parametric curves in the plane and in space, vectors and surfaces in space, and partial differentiation. Accelerated Calculus 3 is the second semester of this course, with content including multiple integrals, vector analysis, differential equations, infinite sequences and series (convergence, Taylor series, power series) Taylor's formula, advanced techniques of integration, indeterminate forms and improper integrals. The syllabi for the University of Illinois second and third semester calculus courses and the Advanced Placement Exam in Calculus (BC) serve as guides for course content. Technology used includes graphing calculators and computer algebra systems.

### **Calculus 2/3 Calculus & Mathematica (Fall and/or Spring)**

(Each 1/2 unit)

*Prerequisite: Calculus 1 or Acc. Calculus 1*

Calculus 2/3 can be taken through the Calculus & Mathematica Distance Education Program for college credit at the University of Illinois. Calculus II (Math 231) can be taken the first semester or over two semesters for 3 hours credit. If Math 231 (or Accelerated Calculus 2) is completed during the first semester, Multivariable Calculus (Math 241) can be taken the second semester for 3 hours credit. Students wishing to take C&M must indicate their preference on their Uni High course request form and complete the Distance Education registration form available from the Student Services Office. Fees for each course are separate from normal "concurrent enrollment" tuition, and most likely will NOT be waived for the 2015-2016 school year.

## PHYSICAL EDUCATION

### PHYSICAL EDUCATION

(1/2 unit)

#### ***Policy Statement***

Illinois state law requires enrollment in Physical Education every semester. University High School seeks to physically educate its students through the development of physical fitness and a variety of sport offerings.

#### ***Sports and Fitness***

The fitness component of the P.E. program is an individualized, progressive program emphasizing cardio-respiratory development. One goal of the program is to teach students the skills necessary to live an active lifestyle that promotes health and physical fitness. Students will also learn how to develop their own personal workout routine based on fundamentally sound exercise principles. A second major goal is to provide each student adequate, physical training necessary for the completion of a 5K run at the end of the year. To ensure progress towards this goal, students will undergo complete testing at the beginning and end of the school year, and an abbreviated test version at the end of each quarter. The Uni High fitness test components include: height, weight, mile run, 100 yard dash, sit-ups, pull-ups, flexed-arm hang, shuttle run, standing broad jump, vertical jump, grip strength, and the sit and reach flexibility test.

The sports component of the P.E. program consists of activities from a variety of sports and games. A holistic approach is followed with mental, social, and physical domains addressed. Written assessments may be utilized to evaluate comprehension of basic rules and strategies of each unit. Attention will be directed toward the development of social skills such as: communication, cooperation and sportsmanship in a competitive environment. Classes will be structured to provide opportunity for individual skill improvement in each sport offering. Activities may include: badminton, basketball, cageball activities, floor hockey, pickleball, soccer, speedball, team handball, ultimate frisbee, volleyball and wiffleball. This exposure to a diverse array of activities will allow students to explore the many options available to them, discovering an appreciation of sport, and hopefully, encouraging a lifetime of enjoyable participation.

#### ***Subfreshman Program***

The fitness component will consist of a progressive, running program structured to allow students to work at individualized levels. The primary focus will be to gradually increase the students' running endurance building up to the completion of the 5K at the end of the school year.

The sports component will be presented in unit format, covering approximately eight units during the year. At the beginning of each unit, time will be allotted for skill development and the progression through drills and lead-up activities prior to the start of the actual sport.

#### ***Freshman/Sophomore Program***

The fitness component during the Fr./So. years is still primarily a running based program but with the inclusion of a wider variety of training methods: circuits, pyramids, relays & interval training.

The sports component during these years will also be presented in a unit format but will be shorter in duration and will include additional activities not covered in the subfreshman year. A brief review of skills, rules and strategies will open each unit and will quickly progress to actual game play.

#### ***Junior/Senior Program***

The Junior/Senior fitness program will be a combination of running, strength and flexibility exercises, and workouts on the cardio-respiratory equipment. The framework of each class is provided by the instructor but students will have more options to choose from so as to allow for individual preferences. With this greater freedom of choice, students gain increased responsibility of ensuring that their exercise effort is of a beneficial intensity.

Along with Fitness, a second major component of the Jr./Sr. program will be strength training. Students will be introduced to the major aspects of a sound strength training regimen, learning basic principles, safety guidelines, terminology and proper lifting techniques. Students will be presented with instruction utilizing selectorized machines then progressing onto free weights. Upon satisfactory completion of these units, students will have the opportunity to further their workouts with additional, supplemental pieces of equipment or by completing group video workouts. Students will maintain a record of their work to demonstrate proper progression.

To complement the fitness and strength training programs, students will participate in seminar style classes that revisit health topics. These classes will meet several times a semester and will allow subjects to be covered in greater depth that is better suited for the Jr./Sr. maturity level. These sessions will take the form of lectures, guest speakers, videos, class activities, or small group discussions. The nature of topics will vary depending on current issues and student interest and could include but are not limited to areas such as: body image, eating disorders, reproductive health, preventing drug and alcohol abuse, mental health, nutrition, weight management, safety and first aid procedures. This additional focus is meant to supplement Freshman Health class topics and current life experiences. This is intended to reinforce healthy practices and behaviors thereby having a positive impact on students' overall health and wellness in these later adolescent years.

***Petitioning out of P.E.***

Juniors and Seniors may petition out of P.E. when:

- The athlete is enrolled in 6 classes per day plus P.E. (The student must be in class 300 minutes per day.)
- The athlete has received a passing grade in P.E. during the school year.
- The athlete has no unexcused absences in P.E. for the school year.
- The athlete has completed all the necessary forms, paid the participation fee and turned them into the Main Office.
- The athlete fully participates as a member of an IHSA sanctioned sport by attending all practices and competitions unless excused by the coach.
- The athlete completes all physical fitness testing as required by the P.E. department.
- The petition has been validated by the athletic director.

**Freshman Health (Fall and Spring)**

(9<sup>th</sup> grade)

(1/2 unit)

This 1/2 credit course is required for all freshmen. Topics include, but are not limited to: human anatomy and physiology, function and development of the human body, causes and prevention of diseases, mental health, social health, nutrition, reproductive health and substance abuse.

**SCIENCE**

The Science Department curriculum offers students the opportunity to explore science according to their individual interests and abilities through enrollment in a minimum of six semester-long courses. The goals of the science curriculum are:

- to enable students to master a broad set of scientific facts, theories and natural laws in the core sciences;
- to promote critical and independent thinking;
- to develop laboratory skills of students;
- to learn to use a range of technologies including computer software and hardware, on-line services and communication networks;
- to instill an appreciation for and ability to utilize discipline-specific technologies and the information they yield; and
- to demonstrate the role of communication in scientific disciplines.

The desired outcome of these goals is that students will be able to use a scientific method when confronted with problems that involve evidence, numbers, logical arguments, uncertainties, ethics and societal implications. Students will learn how technology is the result of a scientific design process that includes continual refinements and improvements. In addition, students leaving the introductory courses will be equipped with sufficient background to intelligently read and understand scientific literature, to evaluate accompanying data, and to grasp the implications of that research. Advanced courses allow students to continue investigating particular areas of interest in greater depth and complete their own scientific investigations using many of the same tools used by practicing scientists.

The science program begins with two semester-long background courses, the Nature of Science and Earth Studies, during the subfreshman year. The science graduation requirement is three units (six semester courses) beyond the subfreshman year. Each student must successfully complete the three required introductory semester classes: Introductory Biology, Introductory Chemistry, and Introductory Physics. Additionally, each student must complete three elective semester courses beyond the introductory courses listed above. **It is strongly recommended that all students considering applying to a four-year university or majoring in the sciences or engineering take a minimum of Introductory Biology, Biology A, Introductory Chemistry, Chemistry A, Introductory Physics and Physics A.**

Broader scheduling issues, in combination with facility limitations and fairness in class placement, limit our flexibility in enrolling freshman, sophomores, and juniors in more than one first year science course.

**Nature of Science (Fall)**

(Subfreshmen)

(1/2 unit)

This required course focuses on scientific and engineering world views. Students will participate in scientific investigations and learn about aspects of engineering design. The course promotes basic laboratory skills such as observing, measuring, using laboratory equipment, recording data, and graphing and communicating lab results. Students will be exposed to basic scientific information about measurement, matter and energy.

**Earth Studies (Spring)**

(Subfreshmen)

(1/2 unit)

This required course focuses on various aspects of our dynamic planet including the atmosphere, lithosphere and hydrosphere. Science, Technology, Engineering, and Mathematics (STEM) careers will be investigated.

### **Introductory Biology (Fall)**

(9<sup>th</sup> grade)

(1/2 unit)

Introductory Biology is a one-semester course required of all students. The main goal of the course is to introduce students to a wide variety of biological topics and current areas of biological research. Introductory Biology begins with a "macro" emphasis, focusing on properties of life and diversity of life forms. The course then moves to a "micro" emphasis, examining basic biochemistry, cell structure and function, cell division, transmission genetics, DNA structure and function, gene expression, genetic engineering and evolution. Laboratory activities, simulations, discussions and computer/Internet resources play an integral role in this course.

### **Biology A: Organismal Biology (Spring)**

(9<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Introductory Biology*

Organismal Biology, an elective one-semester course, introduces students to a wide variety of organismal biology topics and current areas of biological research. The course begins by examining principles of population biology, Hardy-Weinberg equilibrium, ecosystems, nutrient cycling and competition. The latter half of the course involves examination of comparative structure and evolutionary relationships of various taxa of microbes, fungi, protists, plants, invertebrates, and vertebrates. Laboratory activities, simulations, discussions, and computer/Internet resources play an integral role in this course.

### **Biology C: Field Biology (Fall)**

(11<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Introductory Biology, Biology A: Organismal Biology*

Field Biology, an elective one-semester course, is a laboratory and fieldwork intensive experience which focuses on biodiversity, environmental monitoring of terrestrial and aquatic ecosystems, and diversity of structure, function and ecology within the largest group of organisms, the arthropods. The course meets four days per week; laboratory activities are performed in a variety of natural areas throughout central Illinois every other Sunday afternoon.

### **Biology D: Human Genetics and Society (Spring)**

(11<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Introductory Biology, Biology A: Organismal Biology*

Human Genetics and Society is an elective one-semester course. Topic coverage centers around traditional and molecular genetics, including cell structure, development, transmission of traits, DNA structure and function, population genetics, genetic engineering, biotechnology, the Human Genome Project, and ethical dilemmas caused by recent technological advances. Course format includes labs, field trips, computer-based simulations, discussion, and lecture.

### **Introductory Chemistry (Fall)**

(10<sup>th</sup> grade)

(1/2 unit)

Introductory Chemistry is a one-semester course required of all students. Chemistry is considered by some to be the central science because the study of matter and its changes is fundamental to understanding all other sciences. This course will introduce the major concepts of chemistry with special attention being given to the language, symbols and models of chemistry. Students will explore these concepts via classroom demonstrations, laboratory experiments and computer modeling.

### **Chemistry A: General Chemistry (Spring)**

(10<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Introductory Chemistry*

General Chemistry is an elective one-semester course that further develops the concepts of chemistry and allows the student to investigate their application within modern contexts. More emphasis will be placed on laboratory investigation, communication and decision-making based on a more complete understanding of the scientific principles and facts of chemistry. This course provides a foundation for a continued study of chemistry at the high school or college level.

### **Chemistry B: Accelerated Chemistry (Fall)**

(11<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Chemistry A (or consent of instructor)*

Accelerated Chemistry is an elective one-semester course designed to cover the most important theories and topics in chemistry at a more rigorous pace. The first half of the course will be primarily lectures, demonstrations and problem solving. Students taking this course will be prepared to take standardized placement or proficiency exams. The second half of this course will be spent mostly in the laboratory performing experiments supporting the topics in the first half of the course.

### **Chemistry D: Organic Chemistry (Spring)**

(11<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Chemistry A: General Chemistry (or consent of instructor)*

Organic Chemistry is one-semester survey of nomenclature, structure, properties, reactions, and mechanisms of hydrocarbons and their derivatives. The course will have a lecture/discussion format with an emphasis on problem solving and laboratory work.

### **Introductory Physics (Fall)**

(11<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

Introductory Physics is a one-semester course required of all students. The goal is to introduce the field of physics through the study of Classical Mechanics, emphasizing concepts and basic analytical methods. It begins with the relationship of force to motion; then covers Newton's Laws and their implications, especially conservation laws. Momentum and impulse, energy and work are defined and discussed. In the last part of the semester, this knowledge is applied to the study of solid structures and to fluids. Being a self-contained course, Introductory Physics serves all students as an introduction to the field; for those who intend to continue the study of physics, the methods and concepts covered in this course compose the foundation of all further development. Whenever appropriate, applications of physical concepts to engineering and other fields of science are discussed.

### **Physics A: Topics in Basic Physics (Spring)**

(11<sup>th</sup> - 12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Introductory Physics*

This one-semester elective covers a variety of topics associated with classical physics: electricity (the properties of electric charge, the definition of electric fields and potential, capacitance, electric current, resistance, elementary circuits), magnetism (the magnetic force, induction), geometric optics, wave phenomena, and thermodynamics. This course emphasizes problem solving at a slightly greater level of difficulty than Introductory Physics.

### **Physics B: Intermediate Mechanics (Fall)**

(12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Physics A*

This one-semester elective reviews and builds on the first year of physics by covering in greater depth classical mechanics. Topics may vary based on student interest, but typically include: Newton's laws, friction, reference frames and center of mass, rotation, the Universal Law of Gravitation, scaling relationships in structures, and Bernoulli's Principle. Time permitting, a review of thermodynamics and an introduction to statistical mechanics and entropy will also be covered. Assessments will require both numerical problem-solving and formal developments. Because derivatives of polynomials and transcendentals are used, prior or concurrent enrollment in calculus, or consent of the instructor, is required.

### **Physics C: Modern Physics (Spring)**

(12<sup>th</sup> grade)

(1/2 unit)

*Prerequisite: Physics A*

This one-semester elective builds on Physics A, stressing current applications in science. Topics may vary with student interest, but typically include: electricity and magnetism (Maxwell equations, radiation), wave phenomena (lumped-circuit analogies, diffraction), relativity, and quantum mechanics. Formal development, rather than numerical problem solving, is emphasized. Because derivatives of polynomials and transcendentals are used, prior or concurrent enrollment in calculus, or consent of the instructor, is required.

### **Engineering Explorations (Fall)**

(12<sup>th</sup> grade)

(1/2 unit)

*Prerequisites: Introductory and A: Biology, Chemistry and Physics*

This elective, laboratory, one-semester course introduces students to engineering by examining the 14 world issues that have been identified by The National Academy of Engineering (NAE) as awaiting engineering solutions in the 21<sup>st</sup> century. The challenge of providing access to clean water will be investigated in detail. Civil engineering hydrology, chemical engineering water purification, as well as flow and watershed will be covered. The class will coordinate with University of Illinois departments. Students will learn about research performed at the University; faculty will talk to the students about the research and will provide some access to their laboratories.

### **Sustainable Energy (Spring)**

(12<sup>th</sup> grade)

(1/2 unit)

*Prerequisites: Introductory: Biology, Chemistry and Physics*

This elective, non-laboratory, one-semester course develops a systems approach to energy by investigating the science, economics, and externalities (such as infrastructure, environmental effects, and political policies) of energy. The course will begin by developing an understanding of the history of energy. The current production, uses, and economics of fossil fuels will be examined. The majority of the course will look at three types of renewable energy: wind, solar, and biomass.

## SOCIAL STUDIES

The Social Studies Department has a two-fold mission and commitment to students: (1) to help them understand and process the forces of history that have shaped our times and the world in which we live; and (2) to develop within students the skills and facility to understand and conduct historical research.

The first task is designed to provide students with knowledge and information so that they are familiar with the events of history, the concepts and ideas that have influenced and resulted from the course of events and the actions of people, and the patterns that have emerged among diverse peoples over time. From the subfreshman through junior year, courses survey the sweep of history from the emergence of humans to modern times. The places are varied – from the riverine civilizations in Africa and Asia to the plains of Europe to the shores of New England.

Having focused on developing this proficiency over several years, students then have several options as juniors and seniors. A course on race, class and gender in American popular culture examines the construction of these concepts in the context of early and later 20<sup>th</sup> century American history. A course on the world since 1945 examines the political and economic foundations of relationships between nations and peoples in the contemporary world. For seniors who are interested, the seminar in American history offers the chance to engage in independent research, employing the techniques and thinking of historians in pursuing an extended research and writing project. In all of these ways, the department challenges students to deepen their understanding of research and writing across the social sciences, by engaging in those practices themselves.

### **Introduction to Social Studies**

(Subfreshmen)

(1 unit)

This course is designed to introduce students to various ways of studying and thinking about the histories and cultures of human societies, past and present. In the first part of the year, we explore the U. S. constitution and the history of rights in the United States. We will also learn more about how historians work: what kinds of evidence they look for, and how they use it to make sense of the past. In order to further develop skills in historical inquiry, we then work for several months on an extensive oral history project. This involves interviewing people from our local community who have been involved in struggles for equal rights, putting individual experiences into a broader context, and preparing these materials to be used in a student-produced radio documentary, which will be broadcast on public radio. In the last part of the year, the focus shifts to the histories and cultures of other peoples. As part of the sequence of world history courses offered at Uni, we study the development of early humans and the emergence of ancient civilizations (primarily in ancient Mesopotamia, Egypt and the Levant). Throughout the course, students are asked to consider different kinds of evidence and arguments, to ask and answer questions thoughtfully, and to think about the causes and consequences of forces that have shaped people's lives in different times and places.

### **World History (c.1000 BCE-c.1500 CE)**

(9<sup>th</sup> grade)

(1 unit)

This course will cover the histories of Ancient Greece and Rome, Western Europe through the Age of Exploration, Islam from its beginnings through the Ottoman Empire, and the civilizations of Africa and the Americas with particular emphasis on their contact with Europeans and Muslims. The focus will be on the political, economic, social, religious, and cultural factors shaping these civilizations. Emphasis is also placed on the cause and effect processes of history so that students can understand the larger and cross-cultural forces that shape our world.

### **Modern History (c.1500-1945)**

(10<sup>th</sup> grade)

(1 unit)

This course continues with the rise of Western Europe to global prominence from the Renaissance and Protestant Reformation through the democratic and industrial revolutions and colonial expansion of the nineteenth century up to 1945. Special emphasis will be placed on the development of the characteristics and forces of modernity and their spread to the rest of the world, as well as the problems of modernity as seen in the two world wars and the Holocaust.

### **U.S. History**

(11<sup>th</sup> grade)

(1 unit)

This course is designed to give juniors a basic understanding of American history and an introduction to selected interpretative questions derived from such study. The major chronological periods surveyed include: the pre-colonial and colonial periods, the American Revolution, the early National period, the Age of Jackson, Civil War and Reconstruction, the Populist and Progressive periods, the New Deal, the period of the World Wars, and the post 1945 period.

### **Race, Class, and Gender in 20<sup>th</sup> Century American Popular Culture (Fall and/or Spring)**

(11<sup>th</sup> – 12<sup>th</sup> grade)

(1/2 unit)

This class will use the approaches of cultural history and the interdisciplinary field of American Studies to investigate 20<sup>th</sup> century American history. Using evidence from film, television, music, sports and periodical literature, this class will give students a deeper understanding of race, class and gender in American society. Just as importantly, it will help students develop crucial historical interpretation skills and introduce them to theoretical concepts such as historical memory, representation, and postmodernism. The class will be offered as a two-semester sequence. The first semester will roughly cover 1900 – 1954 and the second semester the rest of the 20<sup>th</sup> century. As each semester will cover distinct material, *students may sign up for either or both semesters.*

### **World Since 1945 (Fall and/or Spring)**

(11<sup>th</sup> – 12<sup>th</sup> grade)

(1/2 unit)

This course focuses on the Cold War, the stresses of rapid modernization, in both the United States and developing world, and on the movement towards globalization since the end of World War II. Through readings, videos, and discussion, the course will examine the integration of national economies, the blending of cultures, and the impact of technological change. *Students may sign up for either or both semesters.*

### **American History Seminar**

(12<sup>th</sup> grade)

(1 unit)

*Prerequisite: U.S. History*

This elective course introduces students to the practice of historical research and methodology in a seminar setting. For their research, students will follow one of a small number of broadly related topics involving contemporary issues with long histories. The first semester consists of lectures on methodology, library training, and research. The second semester revolves around the preparation of finished manuscripts and group discussions. A prerequisite for this course is U.S. History.

## **SPECIAL INSTRUCTIONAL OPPORTUNITIES**

### **Senior Project (Spring)**

(12<sup>th</sup> grade) (by accepted proposal only)

(1/2 unit)

The senior project will be offered in spring semester of senior year. The course provides the opportunity for Uni High seniors to explore alternative learning experiences outside the traditional classroom. As a self-directed learning experience, the senior project enables students to build upon the rigorous classroom-based curriculum they have experienced at Uni High and to make creative decisions about their education that are based on their own choices and interests.

The students selected to work on a senior project will work with University of Illinois faculty, Uni High faculty, and/or members of the Champaign-Urbana business, cultural, or activist/charity communities to develop and pursue an original, self-directed project of their own design. The intention is that students will take this opportunity to build upon their Uni education to pursue further research in an academic or laboratory context, to explore a possible career path with hands-on experience in the field, to conceive and develop an ambitious creative or artistic project, or to contribute significantly to their wider community. Students who participate in the Senior Project will be encouraged to see learning as a lifelong, real-world process not limited to the classroom, over which they have a significant measure of control. It will contribute not only to their preparation for college but to their career development.

Information regarding the Senior Project proposal process is maintained and distributed to students/parents by Dr. Karl Radnitzer.

### **Independent Studies**

(9<sup>th</sup> – 12<sup>th</sup> grade)

Students may elect to take independent study courses with Uni faculty or with professors at the University of Illinois. Independent studies usually involve studying specific topics more in-depth than what one would experience in a regular course.

#### **Criteria for Independent Study**

- The independent study proposal must represent a study opportunity that is above and beyond the courses offered in the Uni High curriculum.
- Independent study proposals that duplicate courses offered at Uni will not be considered.
- The independent study proposal should enhance curriculum innovation consistent with the laboratory mission of Uni High.
- Independent study courses **will not satisfy** the “300 minute rule.”
- Students must complete the paperwork in order for an Independent Study to be registered.

Information regarding the Independent Study process is maintained and distributed to students/parents by the Student Services Office.

### **High School Concurrent Enrollment (Parkland College and the University of Illinois)**

(10<sup>th</sup> – 12<sup>th</sup> grade)

Students may take elective courses outside of University Laboratory High School through the University of Illinois and/or Parkland College. This is an opportunity for students to earn college credit while simultaneously attending high school. Courses taken at either institution may count toward the 300 minute rule, with required approval of the Assistant Director. Students should only select courses that fit into their Uni course schedules. The course(s) may not duplicate a University Laboratory High School course unless there is an irreconcilable schedule conflict, as judged by the Assistant Director. Neither the course grade nor the credit will be included on the student’s transcript from Uni. A placement exam may be required by the institution.

Information regarding concurrent enrollment opportunities is maintained and distributed to students/parents by the Student Services Office.