2022-2023

SENIOR SCHOOL COURSE CATALOG

Rev. 03/14/22

Shady Side Academy's mission is to challenge students to think expansively, act ethically and lead responsibly.

The information contained in this course catalog was accurate at the time of publication. Between the date of publication and the opening of the 2022-2023 school year, some of the rules, regulations, policies, course offerings and content may change. Updates will be posted online. The PDF catalog posted online is the most accurate, up-to-date version.

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DIPLOMA REQUIREMENTS

Discipline/Area	Credits
Arts	3 credits
Computer Science	2 credits
English	12 credits
Health	2 credits
History	9 credits
Mathematics	9 credits
Science	9 credits
World Language	9 credits and mastery of Level 3
Elective Courses	Varies by student to achieve 60 credits
Interscholastic Athletic Requirement	Minimum of five seasons: specific yearly requirements
CPR Certification	Required (conducted in Health)
Swimming Safety	Required (conducted in Health)

TOTAL: 60 credits

SPECIFIC REQUIREMENTS

A full-year course is normally three credits, and a one-term course is normally one credit. Students must enroll in five courses each term. Independent studies typically supplement standard course enrollment and do not count towards this requirement, except with permission from the Dean of Studies.

Students must be enrolled in a minimum of 15 credits per year, and may not exceed 18 credits per year, unless exempted by the Dean of Studies.

The Academy's requirements take priority over courses at other schools if such registration conflicts with the student's obligations to the Academy.

The arts requirement can be fulfilled by successful completion of courses in theatre, music or visual arts.

All Senior School students must complete two terms of athletic activity each academic year. Athletic activity offerings are broken into two categories: interscholastic athletics and intramural activities.

Form III and IV:	Two terms, both of which must be Interscholastic Athletics
Form V:	Two terms, one of which must be an Interscholastic Athletic
Form VI:	Two terms, student choice

If a student participates in multiple offerings in a single term, two terms of participation are still required. Please see the Athletic Department section for more information.

Mathematics courses must be at the level of Math I or higher.

Students must take the final year of study of a world language during the school year.

Dropping a course or athletic commitment after the published drop/add period may be recorded on the transcript as a "W" (Withdrawn). Withdrawal is permitted only prior to the final exam or final assessment of the course.

Form VI students must pass the equivalent of four year-long academic courses in order to graduate. Students who fail to fulfill graduation requirements are not permitted to participate in commencement exercises. The diploma will be awarded upon completion of requirements.

It may not be possible to fulfill all preferences due to over or under enrollment, so students are asked to list alternate courses when possible, when they request courses. Courses with fewer than five students enrolled may not run.

Students may not register for independent study classes or senior projects.

All requests for exemption from these requirements or any other special requests must be submitted in writing. Please do not include this information on the course request form. Use the Special Request Form, available on the students page of the website. Students who enter the Senior School in Forms IV, V, or VI may graduate with fewer than the required credits in a specific department with permission from the Dean of Studies.

CURRICULUM CONTENT
The curriculum of each course and its content is considered and deliberate. Families should not expect exceptions or substitutions within the curriculum; all students will be held accountable for that content and their full participation. Parents who have concerns about a component of a course should first speak directly with the teacher, then the Department Chair, then the Dean of Studies or the Head of School.

COURSE NUMBERS
Shady Side Academy uses a course numbering system on the transcript to inform external parties of the sequence of our courses.

COURSE CHANGES
Students are expected to attend the classes listed on their schedules. Course or class section changes are only made in extenuating circumstances, such as incorrect placement in ability level as determined by the department or having had a particular teacher the year immediately prior to the current year.

Course changes must be requested prior to the end of the drop/add period. To change a course, class section or athletics, the student should discuss the change with their parents, advisor, the teacher of the class, the Department Chair and their college counselor, as applicable. The student should complete the drop/add form. The request may or may not be approved.

No credit will be awarded for classes attended without the Dean of Studies' or Registrar's approval.

DROP/ADD POLICY
If a course is dropped after the drop/add period, the course may remain on the student's transcript with the letter grade of W (Withdrawn).

For year-long courses, the drop/add period ends eight (8) school days after the beginning of Term I.

For term courses and athletic activities, the drop/add period ends five (5) school days after the beginning of the term.

Students and their parents must secure permission from the advisor, college counselor (if applicable), Department Chair, and the Dean of Studies to drop a course. The request may or may not be approved.

SUMMER STUDY
Only one graduation requirement in any discipline can be earned through summer study. For example, science requires three years of study, so only one of the required courses may be taken in the summer. Summer tutorial sessions must be approved in advance by the Dean of Studies if the student plans to use the tutorial session to advance in course placement. No credit is given for summer tutorial sessions. The following courses may not be taken for graduation credit through summer study: United States History, Calculus AB, Calculus BC and Advanced Biology. This list is subject to change.

SHADY SIDE ACADEMY SUMMER SCHOOL COURSES
Credit will be awarded for eligible course work successfully completed at Shady Side Academy Summer School. The course title, credit and grade earned will be listed on the official transcript. The grade will be included in the overall GPA calculation, unless it is a P/F course.

NON-SHADY SIDE ACADEMY SUMMER SCHOOL ACADEMIC WORK
Credit may be awarded for summer academic coursework not completed at Shady Side Academy Summer School only if the course has been pre-approved by the Dean of Studies and the Department Chair. Upon successful completion of a pre-approved course, credit will be awarded. The grade will not be included in the overall GPA calculation or appear on the Shady Side transcript.

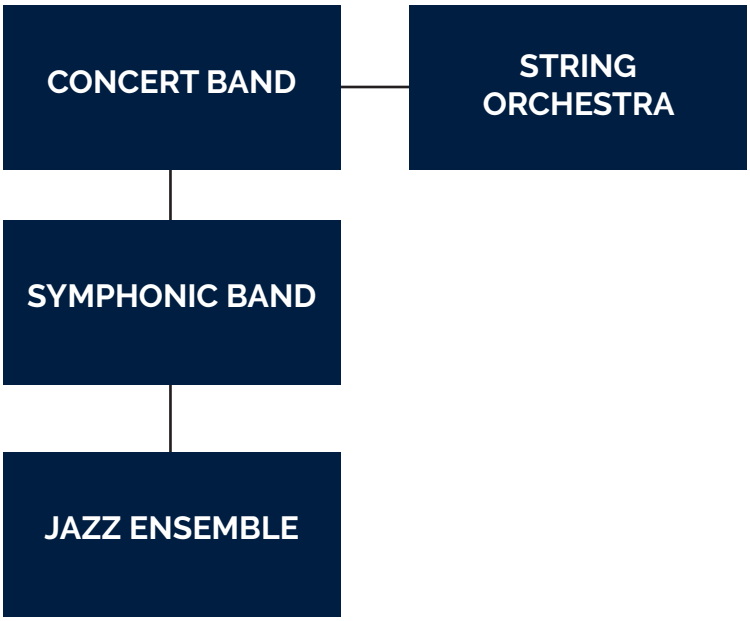
Note: Science courses must be lab-based.

ARTS

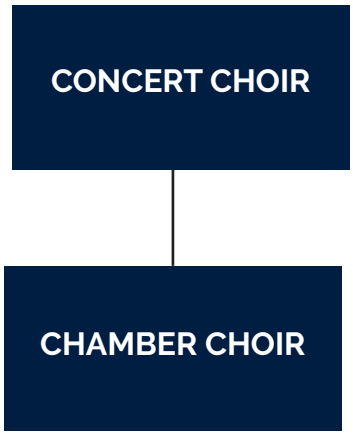
PERFORMING ARTS COURSE SEQUENCE

MUSIC SEQUENCES

INSTRUMENTAL ENSEMBLES



VOCAL ENSEMBLES



ELECTIVES

THEATRE SEQUENCES

PERFORMING ARTS DEPARTMENT MISSION STATEMENT

Mr. Dek Ingraham, Chair

The Senior School Performing Arts Department prepares young artists to be informed and engaged members of their communities; to recognize and respect diversity of culture, identity and opinion; and to live and create sustainably. It offers all students the opportunity to explore and develop their individual talents in a supportive yet challenging community-based environment. The performing arts reinforce the tenets of the Academy, endorsing the balanced development of students analytical, artistic and physical abilities. Through production, rehearsal, performance, critical and analytical thinking, and historical and cultural context, all SSA students are welcome to create and learn in a supportive and intellectually rigorous community. A comprehensive foundational program encourages students to explore the creative process with emphasis on proper protocols, terminology, and safe practice.

PERFORMING ARTS - MUSIC

Concert Band (1.5 credits/year)

All students are welcome to play in the Concert Band. While no previous experience is necessary, typically students have at least two years experience with an instrument. The Concert Band plays all types of instrumental music, including pop, rock, classical, and marches. The Concert Band performs at four concerts, and members are welcome to play with the Symphonic Band at Commencement. Historically, all bands take a spring trip each year for cultural and musically critical experiences to cities like Orlando, New York, Boston, Chicago, Washington, D.C., and Toronto. Extra help through free private lessons is available for each student, no matter his or her level. This is a pass/fail course.

Symphonic Band (1.5 credits/year)

Woodwind, brass, or percussion players (no guitarists) with two or more years of study on their instrument are welcome to enroll for Symphonic Band. Low brass players (French horn, trombone, baritone horn, and tuba) are encouraged to sign up for this band regardless of achievement level. The band plays classical, contemporary and popular music as well as traditional marches. During the year, the band performs at four concerts and Commencement. Historically, the band takes a spring trip each year for cultural and critical experiences to cities such as Orlando, New York, Chicago, Washington, D.C., and Toronto. Private lessons are offered to band students free of charge and are sometimes required by the instructor. This is a pass/fail course.

Jazz Ensemble (1.5 credits/year)

Students who have at least three years of experience on saxophone, trumpet, trombone, piano, guitar, bass guitar and/or drum set are encouraged to audition for Jazz Ensemble. There are limited openings for a vocalist (usually a senior), piano, guitar and drums. Auditions may be necessary. Opportunities for improvisation and soloing are encouraged. The course will enable students to play, listen, and study jazz from 1920 to the present. **Advanced improvisers are asked to play in the Jazz Combo. They perform in concerts and at gigs around the city. They rehearse during the band period and after school.** The Jazz Ensemble performs at four concerts and Homecoming. Historically, the Jazz Ensemble takes a spring trip each year for cultural and musically critical experiences to cities like Orlando, New York, Chicago, Washington, D.C., and Toronto. Auditions will be held in the spring and early in the fall, if necessary. Private lessons are offered to band students free of charge and are sometimes required by the instructor. This is a pass/fail course.

Concert Choir (1.5 credits/year)
Concert Choir is for anyone who loves to sing and wants to have fun and build musicianship skills. The choir performs at a minimum of four concerts per year. Course requirements include performing at the concerts and a sight singing evaluation once per month. Students have the option of participating in the annual trip to New York City. This is a pass/fail course.

Chamber Choir (1.5 credits/year)
Chamber Choir is an advanced, auditioned choral ensemble. The choir prepares students to sing in college and is the featured vocal performance ensemble at Shady Side Academy. They perform at four concerts per year and often are asked to do additional performances (Homecoming, Martin Luther King Jr. Day, Veterans Day). Students have the option of participating in the annual trip to New York City. This is a pass/fail course. Students are able to earn three credits if they choose the letter grade option.

String Orchestra (1.5 credits/year)
Students who have at least two years of instruction on one of the four string family orchestral instruments are encouraged to request String Orchestra. The group accepts one pianist per year, and there are opportunities for percussionists. The String Orchestra plays at least four required concerts, and students are evaluated monthly on duet assignments. They may also elect to play in the pit orchestra for the school musical, and, circumstances permitting, participate in annual trip to New York City. This is a pass/fail course.

ELECTIVES

Electronic Sound Studio (Term I) (1 credit)
This course is designed for students who would like to learn how to record and/or be recorded in a studio. While exploring the recording aspects of music, this class ties back to the Middle School course of General Music and expands on the concepts learned. This hands-on class will afford students a chance to use hard disk recording techniques, mixing boards, microphones and stereos. A field trip to a recording studio will be offered. Students will listen to and create electronic music of their own. Students are encouraged to take the Music Workshop course during Terms II and III. This course is graded.

Music Theory (3 credits)
This course is for students interested in how music is put together. Students will study musical analysis, four-part writing, ear training and some music history. When there is not sufficient enrollment for a full-year class to run, students may propose a music theory independent study with a music faculty member serving as the advisor. Students will be evaluated with nightly homework, papers, tests and projects. This course is graded. Course offered pending sufficient enrollment.

Guitar Workshop (Term II) (1 credit)
Workshop is designed as an introduction to the guitar. While experienced students are welcome, the course will cater to new players. This is a letter-graded course with playing opportunities as well as basic theory and rhythmic introductions. The hope is that we will have a performance opportunity, such as a class recital. We also hope that students will want to continue playing in the Jazz Ensemble or any other advanced opportunity.

Piano Workshop (Term III) (1 credit)
Workshop is designed as an introduction to the keyboard. While experienced students are welcome, the course will cater to new players. This is a letter-graded course with playing opportunities as well as basic theory and rhythmic introductions. The hope is that we will have a performance opportunity, such as a class recital. We also hope that students will want to continue playing in the Jazz Ensemble, accompany a choir or any other advanced opportunity. The class is offered by a teacher who has taught piano for nearly 50 years.

PERFORMING ARTS - THEATRE

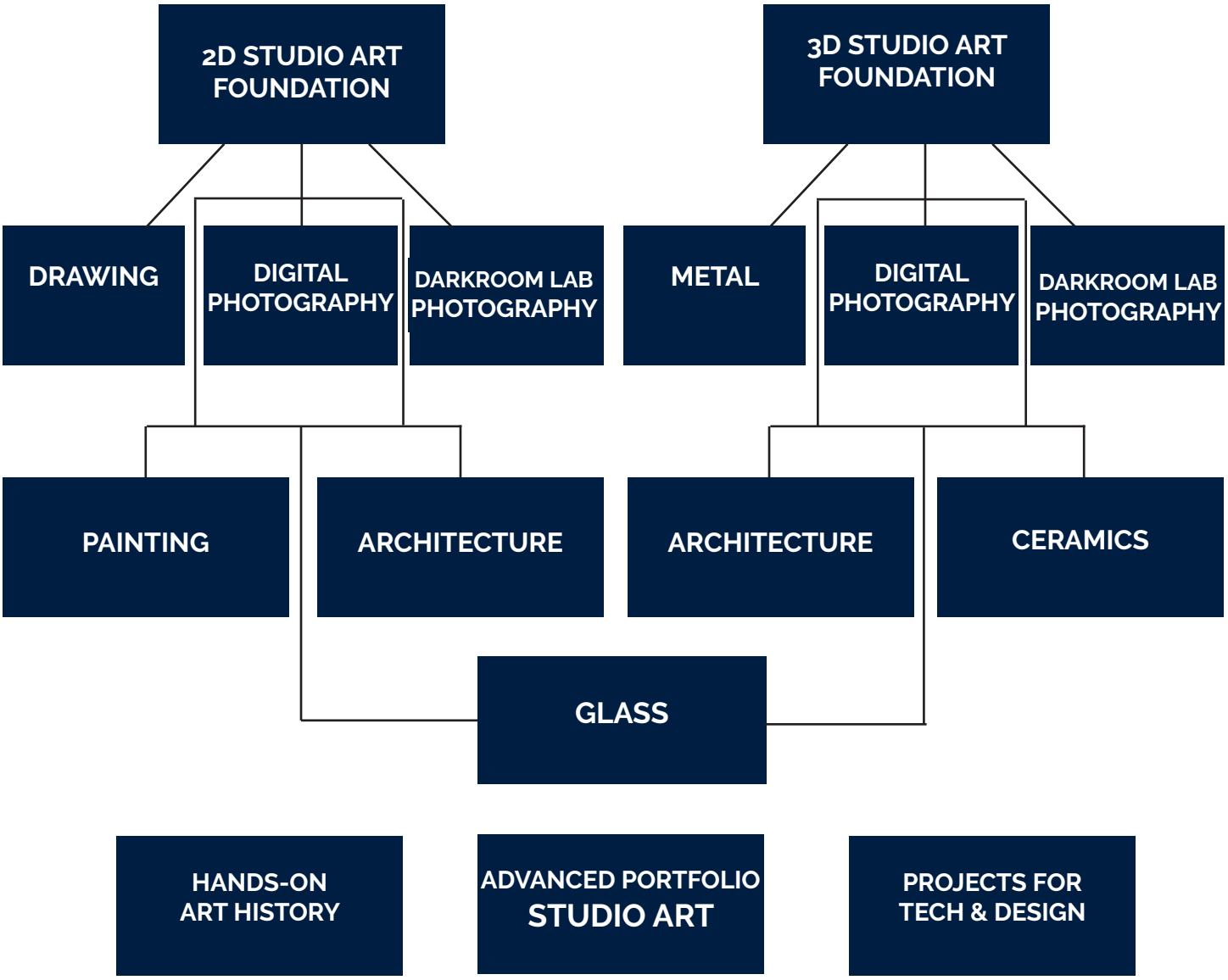
Theatre Arts Foundation (Term I) (1 credit)
This course is an introduction to the conceptualization and creation of theatrical productions. Theory and analysis of structure, elements and styles of drama from the written script are coupled with practical techniques to realize a unified vision of theatre on stage. Concepts integral to directing, dramaturgy, design, character development and playwriting will be explored.

Fall Play (Term I) (0 credits)
The Fall Play is a non-musical theatrical production. Rehearsals begin approximately the second week of school, and performances take place around the first weekend of November in the Black Box Theater. In some years, student writers have adapted an original play (often an older play) to update the language and make it accessible for modern-day audiences; however, this is not always the case. There are many opportunities for technical theater positions as well. There are also opportunities for students interested in directing to be appointed assistant director(s). Considering this theatrical venture is quite a bit smaller than the Winter Musical, students interested in creative crew positions (such as design) are welcome. A wonderful way to meet new people, be creative, build confidence and get to know theater inside and out, the Fall Play is an enriching experience for all involved. Please refer to page 13 regarding information about obtaining a non-athletic exemption for participation in the Fall Play.

Winter Musical (Term II) (0 credits)
The Winter Musical production begins rehearsals around mid-November, and performances take place typically around the second weekend of February. There are many positions backstage in technical theater as well as positions in marketing and publicity. There are also opportunities for students interested in directing to be appointed assistant director(s), and if dancing is involved in the show, students may be appointed as dance captain or assistant choreographer. Participation in the Winter Musical is a wonderful way to meet new people, be creative, build confidence and get to know musical theater inside and out. Please refer to page 17 regarding athletic credit for participation in the Winter Musical.

Acting (Term III) (1 credit)
This course is designed to give the beginning actor a broad-based knowledge of the basics of acting, and to give the more seasoned actor a more advanced level of training to enhance what they have already learned. Several methods of implementation will be employed. These methods include, but are not limited to: vocal and physical awareness, theatre exercises, group discussion, improvisation, monologues/scene work, readings and written work. This is a pass/fail course.

VISUAL ARTS COURSE SEQUENCE



VISUAL ARTS DEPARTMENT MISSION STATEMENT

Ms. Cari Batchelar, Chair

Shady Side Academy offers a rich and varied arts program that celebrates an enduring commitment to all students. The Senior School Visual Arts Department prepares its students to be informed and engaged members of their communities; to recognize and respect diversity of culture, identity and opinion; and to live and create sustainably. The visual arts reinforce the tenets of the Academy Statement of Philosophy endorsing the balanced development of the student's analytical, artistic and physical abilities. Through a rigorous, broad, sequential curriculum in the arts, all students have the opportunity to explore and develop their unique and individual talents. Through production, experimentation, exhibition, critical and analytical response, students can develop an appreciation and understanding of visual expression. They will be exposed to the historical and cultural context of art while exploring their creativity in an intellectual and nurturing environment. All of this is provided in a comprehensive foundational program that encourages students to experience both the process and product of artistic endeavor.

INTRODUCTORY-LEVEL COURSES

Studio Art 2D Foundation (1 credit)

Students will explore a variety of subject matter, materials and techniques specific to two-dimensional design and composition. The elements and principles of design will be emphasized to establish a common language and to develop the students' understanding of visual organization, art historical references and studio maintenance, which will apply across the visual arts curriculum. Upon successful completion of this course, students will be able to enroll in advanced-level courses, including Drawing, Painting, Photography, Digital Photography, Architecture and Glass. Students will participate in critiques during the production process and at the conclusion of each process.

Studio Art 3D Foundation (1 credit)

This one-term course introduces students to the process of creating three-dimensional art projects in a variety of media including, but not limited to, cardboard, foam board, ceramics and metals. Students will be required to sketch their ideas on paper prior to beginning each assignment. While emphasis will be placed on creativity, design, technique and form, each student's visualization and conceptualization skills will be challenged. Upon successful completion of this course, students will be able to enroll in advanced-level 3D classes, including Ceramics, Metal, Glass, Architecture, Photography and Digital Photography. Students will participate in critiques during the production process and at the conclusion of each process.

Hands-On Art History (1 credit)

This course explores a broad range of art history that includes art styles, artists, medias and cultures. Emphasis is on student participation. A "Search Book" of ideas, images and information will be created by students throughout the course. Students will learn a variety of genres from ancient to contemporary. Exploration of art history will be through discussions, student presentations, slides, readings, and by the making of art. At the conclusion of the course, students will create a final piece based on their favorite art genre. They will also complete a digital portfolio of their research and artwork produced in this course.

ADVANCED-LEVEL COURSES

Students must have successfully completed Studio Art 2D Foundation and/or Studio Art 3D Foundation to take an advanced-level course. Students may enroll in a medium more than one time. Each time students take a course, they explore more advanced concepts and techniques. Students may work with the teacher to customize their goals and outcomes.

Advanced Portfolio Studio Art (1 credit)

Advanced Portfolio Studio Art is designed for the student who is interested in a rigorous, self-guided study of visual art production and its presentation. It is geared to the technically skilled and highly motivated student who wants to build and organize a portfolio. The course formalizes this process and provides a foundation for the development of personal work. It also gives the student the benefit of instructional support and feedback, combined with peer collaboration, in and out of the studio. Outcomes are geared toward developing a strong body of artwork, under supervision, suitable for pre- and post-graduate visual arts programs. Homework is required. Students will participate in critiques during the production process and at the conclusion of each process. PREREQUISITE: Studio Art 2D or 3D Foundation, or approval by the Visual Arts Dept.

Architecture (1 credit)

Architecture is a course that provides students with the fundamentals of architectural design through a range of traditional procedures in drafting and 3D model making. These technical skills are combined with computer applications so that the student can build an architectural plan utilizing both technologies. Emphasis is on the following: history of architecture and styles, contemporary building and design techniques, and proper use of tools and materials. Field trips and guest architects are utilized whenever possible. Students will participate in critiques during the production process and at the conclusion of each process. PREREQUISITE: Studio Art 2D or 3D Foundation

Ceramics - Pottery Wheel & Advanced Hand Building (1 credit)

Students will learn about the properties of common types of clay, including stoneware, porcelain and earthenware. While focusing on assigned projects, students will learn the basic skills required for creating clay vessels on the pottery wheel, including wedging, centering, forming walls, trimming, bisque firing and glaze application. More advanced skills will be introduced, including lidded vessels, handles, bottle neck vases and altered vessels. Hand-building techniques will also be taught, and students will be expected to create vessels using clay coils, slabs and/or blocks of clay. Emphasis will be placed on technique and form. Students will learn about electric, gas and propane kiln firing schedules for bisque firings, high- and low-fire glazes, and raku firings. Students will participate in critiques during the production process and at the conclusion of each process. PREREQUISITE: Studio Art 3D Foundation

Wheel Thrown Pottery (After School) Term I & Term II (1 credit)

This course is an entry level class for those interested in wheel thrown ceramics. The primary emphasis of this course is on form, technique and function. In addition to studio demonstrations of wheel throwing technique, students will view online clips to help illustrate various skills. Students will be introduced to the basic level skills required for creating clay vessels on the pottery wheel, including wedging, centering, forming walls, trimming, bisque firing and glaze application. Students can advance to lidded vessels, combined forms and altered vessels after they demonstrate mastery of the foundational skills. Students will also learn about texturing clay, glazing techniques, using slips, oxides and underglazes, as well as other non-traditional techniques. Students will also be introduced to traditional and non-traditional firing methods including a primitive pit firing and wood firing. PREREQUISITE: Studio Art 3D Foundation

Digital Photography (1 credit)
Students will learn to generate and manipulate images for print and web use. Photos and drawings will be created on their own laptop computers using Adobe Photoshop. Anyone who likes taking photos with a smartphone or traditional camera to build an art portfolio online or share on social media will find this course useful. In addition to class projects and critiques, students will work corroboratively on research and skill development. Art historical references will be implemented as part of the course curriculum. Students will participate in critiques during the production process and at the conclusion of each process. PREREQUISITE: Studio Art 2D or 3D Foundation

Drawing (1 credit)
Drawing gives students an opportunity to explore the creative process of drawing and composition through in-class assignments. A variety of approaches are explored working with pencil, charcoal, and pastels and liquid mediums. Students will participate in critiques during the production process and at the conclusion of each process. PREREQUISITE: Studio Art 2D Foundation

Glass (1 credit)
Students will learn about the properties of glass, specifically two of the most common types of glass currently used for fusing and slumping. They will learn how to safely cut, grind, clean, assemble, fire and polish glass. Students will gain a thorough understanding of glass fusing temperatures, firing schedules, glass molds, annealing temperatures, coefficients of expansion and compatibility, as well as how glass reacts to certain factors such as heat, time and gravity. Throughout assigned projects, emphasis will be placed on technique, design, pattern, color, texture and form. PREREQUISITE: Studio Art 2D or 3D Foundation

Metal (1 credit)
Students will learn how to fabricate metal through a variety of demonstration and projects. This course is an introduction to silver soldering, cold joining, chasing and basic casting. Projects will include functional objects, jewelry and conceptual metal art assignments. Emphasis will be placed on technique, process and creativity. Students will participate in group critiques to learn art dialogue. At the conclusion of this class, students will have completed an individual slide portfolio. PREREQUISITE: Studio Art 3D Foundation

Painting (1 credit)
Painting introduces students to basic techniques of color mixing and brushwork. A variety of approaches to constructing images and compositions are explored. Students are also encouraged to research and develop original and personal ideas. Term assignments include a still-life painting and an open assignment of the student's choice. Students will participate in critiques during the production process and at the conclusion of each process. PREREQUISITE: Studio Art 2D Foundation

Darkroom Lab Film Photography (1 credit)

Darkroom Lab Film Photography introduces students to the process of taking quality photos, as opposed to snapshots, with an emphasis on creative control, using the manual control options of a Single Lens Reflex (SLR) camera (provided by the Academy). Students are guided in the "available light" technique, film development and printing enlargements using photo darkroom supplies and equipment. Students will participate in critiques during the production process and at the conclusion of each process. PREREQUISITE: Studio Art 2D or 3D Foundation

Projects for Tech & Design (1 credit)

Students will be able to leverage the Glimcher Tech & Design Hub to its fullest capacity by becoming familiar with 3D modeling, printing, CNC mills and routers, vector design, laser cutting and various wood and metalworking tools. Entirely project-based, the term will consist of minor projects centered around each piece of equipment culminating in a final project specific to the student's interest.

ATHLETICS

Mr. Sean Simmons, Director

ATHLETICS DEPARTMENT MISSION STATEMENT

Athletics play an integral role in the educational experience at the Senior School. The positive character traits developed through athletic participation have a direct correlation to greater individual success following high school. It is the Athletic Department's goal to make the student experience within the SSA Athletic Department both educational and enjoyable.

ATHLETIC REQUIREMENTS

All Senior School students (Forms III-VI) must complete two terms of athletic activity each academic year. Athletic activity offerings are broken into two categories: interscholastic athletics and intramural activities.

Form III and IV:	**Two terms, both of which must be Interscholastic Athletics**
Form V:	**Two terms, one of which must be an Interscholastic Athletic**
Form VI:	**Two terms, student choice**

If a student participates in multiple offerings in a single term, two terms of participation are still required. Please see information on exemptions in greater detail below.

ATHLETIC OFFERINGS AND LEVELS OF TEAM PARTICIPATION

Interscholastic Athletics

Interscholastic athletics emphasize the progressive development of individual and team skills, enabling our teams to compete at a high level within their respective leagues. Many of our interscholastic programs offer multiple levels of team participation, including freshman, junior varsity, varsity and prep.

The primary goals at the freshman and junior varsity team levels are skill development, physical conditioning, knowledge of strategy, discipline, fun, and participation. Success is encouraged and is balanced with student participation and individual preparation for upper-level teams.

At the varsity and prep level of competition, teams are selected according to ability, and students with the requisite skills and experience to play at a high level are chosen. The primary goal is to field highly competitive teams. Shady Side Academy athletes are expected to exhibit excellence in all aspects of sport, including athletic skill, discipline, teamwork, and sportsmanship. In addition, athletes must display pride in self and in Shady Side Academy. With varsity and prep level selection, athletes must make a commitment to practice and compete throughout the entire season, including preseason and postseason playoff appearances.

Intramural Activities

Intramural activities stress both fitness and lifetime participation in sport. These offerings provide opportunities for students who are not involved in the interscholastic athletic program at the varsity/JV level. All intramural activities meet after school and students may choose the one that best suits their interests.

ADD/DROP POLICY

Students are able to drop/add athletic choices from their academic schedules. The deadline for the drop/add period is two weeks from the first day of each term. Requests made during the drop/add period to be added to a roster will be dependent upon available roster openings. Interscholastic and Intramural rosters may be limited on the number of students they are able to accommodate while maintaining competitive integrity and/or a teaching environment.

EXEMPTIONS

Shady Side Academy enthusiastically endorses the active pursuit of athletics and offers a wide range of athletic options to its student-athletes. Despite this, we recognize that there are times when students have passion and talent for sports and/or athletic activities that cannot be offered by the Academy.

Requests for exemptions to the athletic requirement must be received one week prior to the official WPIAL start dates for each season (second week of August for fall sports, third week of November for winter sports, and first week of March for spring sports). Both single and multi-term requests will be reviewed by the Athletic Department, and students and parents will be notified of the decision prior to the season start.

Athletic Exemption

Students who are actively participating in a sport or physical activity that is not offered at Shady Side Academy's Senior School may apply for an athletic exemption. Athletic exemptions will not be granted for athletic activities that Shady Side Academy offers. In addition, athletic exemptions must meet the minimum 30-hour-per-term expectation that applies to all athletic requirements.

All requests for an athletic exemption should be e-mailed to Assistant Athletic Director Katy Phillips at kphillips@shadysideacademy.org. Completed exemption requests must include documentation from the student detailing the activity, hours, competitions and a supporting letter from the coach/leader of the activity with contact information. The request must be signed by a parent/guardian.

Medical Exemption

Students who sustain a significant injury/medical condition may apply for a single-term exemption. The medical condition must be significant enough that it prevents the student from fulfilling the 30-hour-per-term requirement. Requests for medical exemptions should be e-mailed to Assistant Athletic Director Katy Phillips at kphillips@shadysideacademy.org. Completed medical exemptions must include:

- A letter from the student including signed parental consent; and
- Supporting documentation from a physician verifying the nature of the medical need.

Students who are granted medical exemptions will be required to report a progress update to the Certified Athletic Trainer (ATC) and/or Counselor at Shady Side. Medical needs that span more than a single term will be reviewed on a case-by-case basis.

ATHLETIC ACTIVITY OFFERINGS

TERM 1 (Fall Term)

INTERSCHOLASTIC ATHLETICS
Cheerleading (Coed)
Cross Country (Boys & Girls Teams)
Field Hockey (Girls Team)
Football (Coed)
Golf (Boys & Girls Teams)
Soccer (Boys & Girls Teams)
Tennis (Girls Team)*
Volleyball (Girls Team)**

INTRAMURAL ACTIVITIES
Badminton
Ice Hockey
Intramural Sports
Swimming
Ultimate Frisbee
WSSA Broadcast Team∞
Yoga

**Tennis is offered during the PIAA-designated seasons. Fall for girls' competition and Spring for boys' competition.*

*** Co-op offering with The Neighborhood Academy (TNA). Practices are off-site at TNA, and the team competes with joint participants from both schools.*

∞ Students on the WSSA Broadcast Team will produce two to four live sporting events for a livestream audience each term. Students will be trained on the equipment and procedures for producing live event coverage and will produce commentary and graphics. WSSA can only count for the athletic requirement one term per year.

TERM 2 (Winter Term)

INTERSCHOLASTIC ATHLETICS
Basketball (Boys & Girls Teams)
Ice Hockey (Boys & Girls Teams)*
Squash (Boys & Girls Teams)**
Swimming (Boys & Girls Teams)
Winter Musical°

INTRAMURAL ACTIVITIES
Cheerleading
Track
Group Fitness
WSSA Broadcast Team∞

**A participation fee is required for ice hockey. Boys' prep ice hockey competes in the Midwest Prep Hockey League (MPHL), and girls' prep ice hockey competes in the North American Prep Hockey Association (NAPHA).*

***Squash is not a WPIAL sport. The varsity squash teams compete against other independent schools and in the U.S. High School Team Championships national competition.*

°The winter musical provides both a team atmosphere and physical activity, and thus fulfills an Interscholastic athletic requirement for Forms III, IV and V.

∞ Students on the WSSA Broadcast Team will produce two to four live sporting events for a livestream audience each term. Students will be trained on the equipment and procedures for producing live event coverage and will produce commentary and graphics. WSSA can only count for the athletic requirement one term per year.

TERM 3 (Spring Term)

INTERSCHOLASTIC ATHLETICS
Baseball (Boys Team)
Lacrosse (Boys & Girls Teams)
Softball (Girls Team)
Tennis (Boys Team)
Track & Field (Boys & Girls Teams)
Ultimate Frisbee (Boys & Girls Teams)**

INTRAMURAL ACTIVITIES
Adventure Sports
Golf*
Intramural Sports
Squash*
WSSA Broadcast Team∞

**Spaces are limited. Priority will be given to non-varsity athletes in golf and squash.*

***Ultimate frisbee is not a WPIAL sport. The team competes in the Pittsburgh High School Ultimate League (PHUL).*

∞ Students on the WSSA Broadcast Team will produce two to four live sporting events for a livestream audience each term. Students will be trained on the equipment and procedures for producing live event coverage and will produce commentary and graphics. WSSA can only count for the athletic requirement one term per year.

HEALTH EDUCATION

As a foundational component of SSA's overall student life curriculum, health courses collectively aim to provide accurate health and wellness related information and resources to our students while simultaneously helping students to build the social and emotional skills needed to successfully negotiate adolescence as a whole and establish habits of wellness that will serve them over the course of their lifetime.

Health classes promote and provide a safe space for open discourse and provide our youngest students with an opportunity to build community, express themselves and share any concerns they may have.

Form III Health (1 credit)

Form III Health helps students recognize and prepare for the challenges of becoming healthy autonomous young adults. The course, grounded in the Guiding Principles of Honest, Respect, Kindness, Responsibility and Safety, provides students with the information and skills necessary to make thoughtful and responsible decisions that promote their own well-being and that of those around them. Students will build the skills and capacities necessary to successfully negotiate the high school experience and gain broad-based knowledge in critical areas of relevance to our youngest students. These include the transition to high school, organization and time management, character building, mental and physical wellness, sexual health and relationships, drug use and abuse, and social media awareness. This is a one-term course required of all freshman students and is graded on a pass/fail basis. Each student will contribute to the course content and to the educational experience of all students through leadership opportunities, active participation and collaborative behavior. This one-term course is required of all Form III students and is graded on a pass/fail basis.

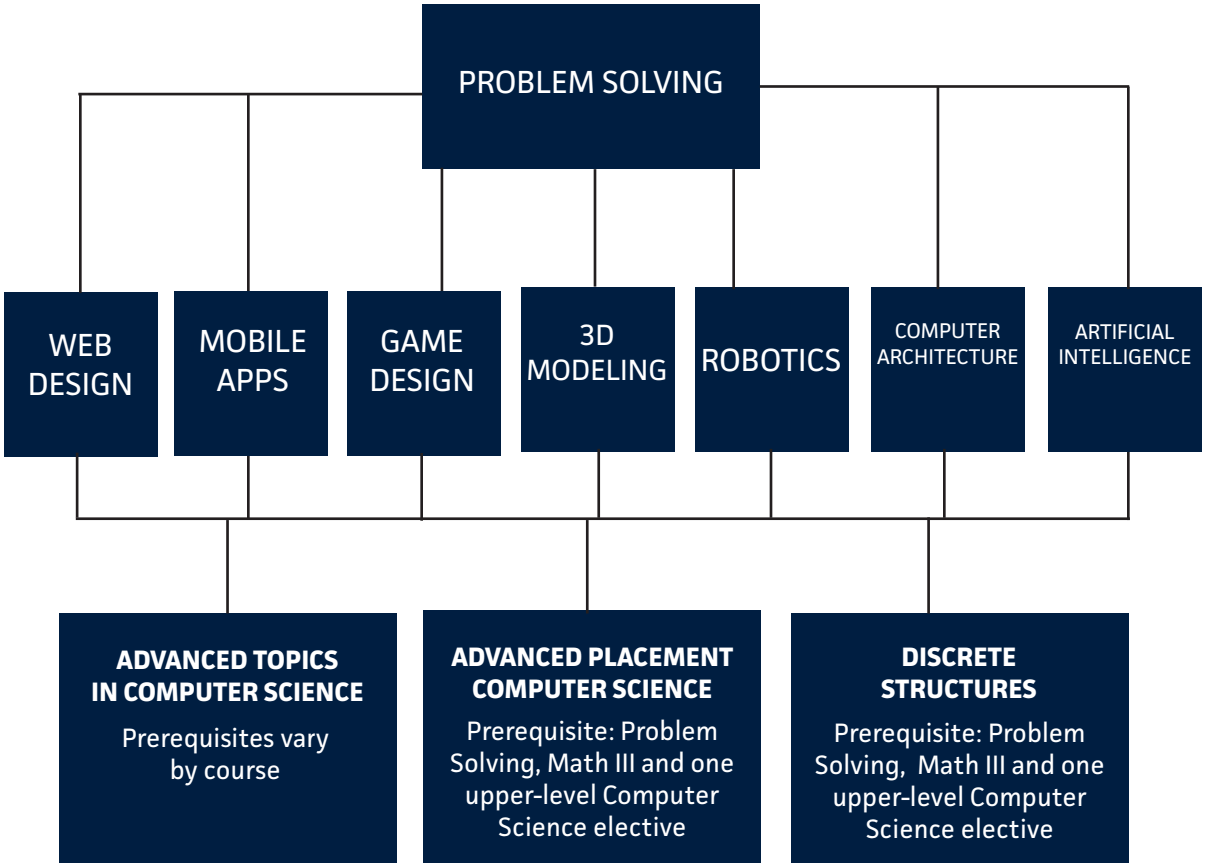
Form IV Health (1 credit)

Form IV Health helps students to become deeper thinkers around the challenges of becoming healthy autonomous young adults. Building upon the curriculum of Form III Health, the course dives deeper into select topics and introduces new content. Units include equity and inclusion, First Aid, CPR and AED certification, meditation and mindfulness, substance use and abuse, sexual health and relationships, mental health awareness, nutrition and food access, and fitness plan design. This one-term course is required of all Form IV students and is graded on a pass/fail basis.

COMPUTER SCIENCE

Mr. Dawson Haytock, Chair

COMPUTER SCIENCE COURSE SEQUENCE



COMPUTER SCIENCE DEPARTMENT MISSION STATEMENT

The Senior School Computer Science Department strives to provide the fundamental preparation in computer science that will stimulate students' growth in both academic and ethical areas and serve them well throughout their lives. In addition to preparing students for future studies in computer science, our goals include promoting ethical collaborative thinking, developing problem solving skills that include comprehending written challenges, designing solutions for these challenges, building solutions, and testing and iteratively improving these solutions.

GENERAL COURSES

Problem Solving: Karel & Elementary Graphics (All Terms) (1 credit)

The emphasis of this course is on the foundations of programming methodologies for the discipline of computer science. Topics covered include modular programming, conditionals, loops, variables and parameters. These concepts will be applicable to all programming languages studied in the future. The Java language is used in conjunction with the Karel J. Robot package and a graphics package. PREREQUISITE: Completion of one term of Math I

SOFTWARE ENGINEERING COURSES

Game Design (Any term) (1 credit)

In this course, the student studies specific programming problems relating to gaming. Topics include an overview of game development, programming with graphics systems and event-driven programming, and designing logic problems. Students will use a scripting language as well as other programming environments. Students are expected to work with independence and initiative to complete a significant long-term project. PREREQUISITE: Problem Solving

Artificial Intelligence (Term III) (1 credit)

The Artificial Intelligence class is geared toward those students who have an interest in learning theoretical and practical concepts of how machines "think." Students will develop skills in using programming languages that are geared toward machine reasoning, then apply those skills to building simple artificial intelligence applications. Topics include knowledge representation, reasoning algorithms with puzzles and games, machine learning and natural language understanding. If time permits, students may also work with applying AI to robotics. The bulk of class time will be spent on lab work. PREREQUISITE: Problem Solving

Application Development for Mobile Devices (Term III) (1 credit)

The course will explore the processes and components required to develop mobile applications. Apps will be developed on either the Android platform using a Java development platform or the Apple platform using Objective C. Students will engineer software applications using the unique features of mobile devices, such as touchscreen input, camera, GPS tools and wireless connection. Students will be required to complete at least four major programming projects. Homework, quizzes and exams round out the assessments. PREREQUISITE: Problem Solving

Interactive Web Page Design (Term I) (1 credit)

This course covers the fundamentals of computation from the perspective of web page design. Topics covered include network engineering, network security and the creation of web pages using the following tools: HTML, CSS and JavaScript. The course includes simple problem-solving using variables, conditionals, loops, string-processing, mathematical computations and arrays. The coursework consists of readings, homework and quizzes, completion of several projects and a final exam. PREREQUISITE: Problem Solving

HARDWARE ENGINEERING COURSES

Robotics (Any term) (1 credit)

In the robotics course, students experience the power of designing and programming robots to solve problems. Topics include an overview of robotics, engineering and programming principles, robot mapping, handling environments and objects. Students will use the Vex or Lego EV3 robotics kit with the RobotC language. Students are expected to work with independence and initiative to complete a significant long-term project. PREREQUISITE: Problem Solving

Computer Architecture (Term III) (1 credit)
In this course, students explore computational reasoning at the hardware level and will get some hands-on experience with digital circuitry components. The course covers the basics of logic gates and their applications, functions and purpose as the building blocks of digital systems. Some of the projects involve how to build LED displays, turn servos and motors, react to light and temperature, and interface with remote controls, joysticks and smart phones. Students will use breadboards, the Arduino board, robotics components and modeling software such as Logisym. Students will get an overview of electronics and how software transforms ideas into reality. PREREQUISITE: Problem Solving

3D Modeling (Term I) (1 credit)
In this course students work with the Plasm3D and OpenSCAD programming platforms to create three-dimensional models for engineering applications. Students will learn visual-spatial reasoning as they build and transform geometric figures in two and three dimensions. The course teaches modeling using simple scripted programming in a Python / C++ based language. The course combines geometry, programming and logic with the culminating experience of outputting the files created to 3D printers. Students will learn to build parts for robotics as well as for vehicles and drones. PREREQUISITE: Problem Solving

ELECTIVES

The following electives will be offered dependent upon enrollment numbers. If an elective does not run, students will be placed in an alternate choice if their schedule permits.

Advanced Placement Computer Science (3 credits)
This year-long course covers some of the major topics in theoretical computer science utilizing the programming language of Java. Topics include: counting systems, Boolean algebra, object-oriented programming, strings, arrays, matrices, recursion, data structures and the analysis of algorithms. At the end of the course, students will be prepared to take the Computer Science "A" AP examination for college credit. PREREQUISITE: At least two Computer Science courses and Math III

Discrete Structures (Term II) (1 credit)
The Discrete Structures course, offered jointly by the Computer Science and Math Departments, takes an in-depth look at the fundamentals of logic, logical inferences, counting principles and computability. These topics are fundamental to the study of advanced computer science and will prepare students for future coursework in areas such as math, computer science and engineering. Students will be required to complete at least three major programming projects. Homework, quizzes and exams round out the assessments. This course can be used as either a Computer Science or a Mathematics credit. PREREQUISITE: At least two Computer Science courses and Math III

Advanced Topics in Computer Science: Advanced Data Structures and Algorithms (Term I) (1 credit)
This one-term course explores advanced Computer Science topics that are beyond the scope of AP Computer Science, starting where AP Computer Science leaves off. Topics may include binary trees, hash tables, linked lists and doubly linked lists, sorting, searching, and runtime analysis of algorithms. The course is Java based and students are required to complete a number of programming projects. In addition to classroom material, this course may use material developed for a Data Structures and Algorithms course at Carnegie Mellon University. PREREQUISITE: AP Computer Science and Math III

Advanced Topics in Computer Science: Machine Learning (Term III) (1 credit)
This one-term course explores the subject of machine-based learning. The topics include an in-depth, term-long study of Python-based libraries to implement computer based learning systems. The course will cover some basic biological features of neurons, types of machine learning systems, a brief history of learning machines such as Perceptrons and Adaline, data transformation, the mathematics behind machine learning algorithms, neural networks, and projects to implement some of these machines. PREREQUISITE: At least two Computer Science courses and Math III

Advanced Topics in Computer Science: Introduction to Virtual Reality (Term III) (1 credit)
In this one-term course, students are introduced to the basics of building virtual reality environments using A-Frame (an HTML and JavaScript library), CoSpaces and Unity. The history, hardware, psychological impact and future of AR/MR/VR will also be explored utilizing a variety of technologies including mobile devices and Oculus Quest headsets. PREREQUISITE: At least two Computer Science courses and Math III

ENGLISH

Dr. David Barndollar, Chair

ENGLISH DEPARTMENT MISSION STATEMENT

The Senior School English Department fosters in students a love and respect for the English language. Through language fluency, students are better able to make sense of their world, communicate more effectively, and grow to appreciate the finest literature of their own cultures and the cultures of others, both past and present.

Courses in English center on a variety of activities that seek to expand not only students' knowledge and understanding, but also their skills in interpreting and composing texts. The program encourages close analysis of texts from a variety of genres, active and thoughtful class discussions, creative expression and personal reflection. We hold that learning is a communal enterprise with communication at its heart, so we expect students to develop their reading, writing, speaking and critical-thinking capacities within a framework of constructive conversation and feedback arising from our study of common texts. Fundamental skills and concepts are thus taught as part of the study of these texts.

Central to our overall approach is the belief that literacy is a recursive act. Students are urged to question, examine and reassess their ideas and values through the development of important habits such as annotating, journaling, drafting and pre-writing, revising, and conducting research. Through this comprehensive program, the English Department seeks to foster the lifelong enjoyment of learning for its own sake. The Department directs its efforts toward the development of young individuals to become thoughtful, responsive members of a literate community.

FOUNDATION COURSES (FORM III AND FORM IV)

FOUNDATIONS OF LITERATURE AND WRITING I, II

This is a two-year integrated study of English designed to develop in students the thinking, reading, writing, speaking and listening skills necessary for success in Shady Side Academy's broad academic vision, as well as for success in the upper-form English program. In freshman and sophomore years, students write in many formats – descriptive, narrative, expository and analytical – and they read literature from a range of genres, periods and cultures. The spirit of inquiry is fostered through involvement in activities that encourage expansion of knowledge and interpretive skills.

Foundations of Literature and Writing I (Form III) (3 credits)

This course concentrates on the development of writing habits that include greater fluency, multiple drafting, topic focusing, effective editing of sentences for overall coherence, and the use of audience feedback for revision. In reading, students move well beyond literal-level interpretations to draw valid and important inferences from a variety of challenging and thought-provoking texts. Individual and collaborative inquiry is encouraged, which lays the groundwork for the research skills necessary later on.

Foundations of Literature and Writing II (Form IV) (3 credits)

This course continues to introduce students to literary masterpieces as well as to current works drawn from some of the best contemporary writers in English. Drawing valuable inferences is still emphasized, but moving beyond this to evaluating a work in light of its importance in larger literary and other contexts is encouraged and developed, as well as refining analytical and creative writing skills. Students acquire a greater understanding of the characteristics, strengths, and limitations of the major literary genres: prose fiction, poetry and drama. In responding to the literary works in assignments that range from informal explorations to fully developed analytical essays, students continue as well to improve as thoughtful, proficient writers and independent thinkers.

UPPER-FORM OFFERINGS (FORM V AND FORM VI)

In the upper forms, the English Department offers a stimulating, challenging, and diversified selection of term-length courses that provide students with the opportunity to study specific genres, movements or topics in literature and language in depth. The program also offers students the training necessary to develop significant modes of thought and reasoning. Students should expect to work with at least three

different teachers over their two years in the upper forms. Diversity in period and style is important to the structure of this program in order to ensure that all students explore a wide variety of topics within the disciplines of literary and rhetorical studies.

TERM I

COURSE FOR FORM V:

The Art of Persuasion (1 credit)

In this course, students will focus on writing persuasively for a variety of audiences and purposes, academic and otherwise. Topics include understanding the logical structure of arguments, employing effective rhetorical appeals, recognizing and avoiding fallacies, understanding and using criteria, engaging fully in all stages of the writing process from invention to delivery, and polishing writing at the sentence level.

COURSES FOR FORM VI (AND FOR FORM V STUDENTS TAKING A SECOND CLASS):

August Wilson (1 credit)

Director Marion McClinton sums it up nicely: "There are no new August Wilsons. There ain't going to be any neither." The same can be said about his magnum opus, a 10-part series of plays that showcase the African-American experience set in every decade of the 20th century. Unique in scope and perspective, Wilson writes with a stunningly authentic voice and powerful artistic metaphor. His plays in the "Century Cycle" feature dynamic characters who set out to define their own values, culture and identity. Wilson has been called the American Shakespeare — and he is from our fair city of Pittsburgh! In this course, we will be reading, exploring, and studying several plays in the Cycle (save the ones that you read as under-formers.) Considering that nine of 10 plays were set in Pittsburgh, we will hopefully travel to some of these locations to do some writing of our own. Lastly, the course will culminate with a trip to the August Wilson Center in downtown Pittsburgh. If you're interested in history, drama, literature and Pittsburgh, this course is for you!

Detective Fiction (1 credit)

This course will introduce you to a few of the classics of the mystery and detective fiction genre, from its origins in the 19th century to more contemporary authors. By many estimates, approximately 40% of *The New York Times* best-seller list falls into the Mystery or Crime Fiction category. It is, therefore, a major genre as well as a popular one. In this course we will treat the genre seriously as literature while also seeking to understand the reasons it has remained so appealing for such a long time. You'll have an opportunity to write thoughtfully about these texts and reflectively about your experience of reading them. Authors may include Edgar Allan Poe, Arthur Conan Doyle, Agatha Christie, Dashiell Hammett, Raymond Chandler, Tom Stoppard and Sara Paretsky.

Fiction Workshop (1 credit)

In this course we will explore fiction by writing it, working together to understand where stories come from and how they are formed, learning to balance craft with inspiration. As we learn about some of the basic elements of fiction - point of view, scene, dialogue, character development, narrative structure - we will move from writing short exercises to writing two complete short stories, drafting, then revising. We'll also explore the art of fiction by reading published short stories, many by young, emerging writers.

Graphic Literature (1 credit)

Over the past 20 years, the graphic novel has emerged as a literary form that works to link the power of language with the force of imagery. In this course, we will examine such graphic novels as *Maus, American Born Chinese, Ms. Marvel, March* and *Watchmen* to consider what the graphic novel form contributes to our understanding of the text's topic and of literature more generally. We will look at Scott McCloud's book *Understanding Comics* in order to have a strong grasp of what makes a graphic novel a graphic novel. We will also examine trends in the content, focus and form of the graphic novel in recent years. Students will be required to complete in-class writing and mini-essays, discussion board postings, two class presentations, several major analytical writing assignments and a final project.

The Hero's Journey (1 credit)
Joseph Campbell identifies the hero's journey as an archetype that transcends time and place. We will use his text *The Hero with a Thousand Faces* and apply the stages he outlines in it to hero myths old and new. For example, we will look at T. H. White's *The Once and Future King* and the journey young Wart makes to become the revered King Arthur. Accept the call and embark on the journey!

Modern Narratives (1 credit)
In this class we will study both print and film versions of literature. This relatively new art form called film spans about one hundred years. We will study four films that represent the best story-telling from this medium. We will also read the prose versions that were used as the template for some of these narratives. We will also make two films. Films/narratives under consideration include: *Memento, Citizen Kane, The Graduate, Almost Famous, Breakfast at Tiffany's, Rear Window* and *Monty Python and the Holy Grail.*

TERM II

Theory and Process of Writing (1 credit)
This course focuses on the analysis of personal, intellectual and practical problems in composing. Students will study the theoretical issues of the relationship between thinking and writing and will work to gain insight into the parallels between examining and honing their own writing and working with the writing of others. In multiple drafts of three major papers and in extensive journal work, students will examine such elements as voice, focus, audience, development and organization in writing. The writing and the critique experience at the center of this course are intended to prepare students to work with peers in the Writing Center. (Enrollment in this course is by nomination of the English Department and by approval of the chair.)

OFFERED EVEN YEARS (2022-2023) – LITERATURE OF THE UNITED STATES

American Poetry (1 credit)
We will examine the history of America through poetry, beginning with the colonials and moving through the contemporary period. Major poets may include Anne Bradstreet, Herman Melville, Emily Dickinson, Walt Whitman, Robert Frost, Marianne Moore, T. S. Eliot, Langston Hughes, Theodore Roethke, Sylvia Plath, and Frank Walker. Students will learn how to explicate poetry by examining these works closely.

The American Renaissance (1 credit)
The middle 50 years of the 19th century produced some of America's greatest writers and thinkers, many of whom knew each other well and communicated closely with each other about their work. What we think of today as "American literature" first came to exist during this period. In this course you will get to read some of the period's most canonical works, including not only works by Herman Melville and Nathaniel Hawthorne, but also selections from authors such as Washington Irving, Ralph Waldo Emerson, Henry David Thoreau, Walt Whitman, Edgar Allan Poe, Emily Dickinson, Frederick Douglass and Abraham Lincoln. You will also have opportunities to write thoughtfully about these texts and about your experience of reading them.

The Bildungsroman (1 credit)
The term "Bildungsroman" is a combination of two German words: Bildung, meaning "education," and Roman, meaning "novel." Broadly speaking, the "Bildungsroman" focuses on the moral and psychological development of a protagonist transitioning from childhood to adulthood. Much of our English curriculum at SSA is centered on characters who live in the adult world, and for good reason (what can we learn from these adult characters, and how can we learn from their mistakes and triumphs to guide our future lives?) This course, though, centers on the state and age in which you are currently living, and our protagonists navigate the often perplexing purgatory between youth and maturity. Along the way, they find themselves questioning who they are, what they stand for, and ultimately, who they may want to be. We will be reading novels, and frequently, you'll be assigned to watch a film over the weekend. Authors may include John Knowles, Harper Lee, Stephen Chbosky, Kazuo Ishiguro and others. Films may include screenplays by John Hughes, Zach Braff, Scott Neustadter, Michael H. Weber, Alice Wu and Barry Jenkins.

Black Women Writers (1 credit)

Throughout American history, narratives written by black women have challenged and confronted the limitations imposed by their marginalized status, revealing strategies of survival and voices of resistance. From slave narratives to Pulitzer Prize-winning novels, and from poetry to hip-hop lyrics, the texts in this course will exhibit the narrative inventions, language artistry, theoretical priorities and social positions that black women have formed and re-formed as cultural workers within a continuing legacy. Possible authors may include Toni Morrison, Maya Angelou, Lorraine Hansberry, Zora Neale Hurston, Alice Walker, Nella Larsen, Harriet Jacobs, Sojourner Truth, Gwendolyn Brooks, bell hooks, Edwidge Danticat, Ntozake Shange, and Jesmyn Ward.

The Individual in America (1 credit)

We will explore the trials of great heroes of American literature – for example, Hester Prynne of *The Scarlet Letter* and Willy Loman of *Death of a Salesman*. Despite the years that separate these characters, they all share struggles and societal impositions that may or may not be uniquely American. We will compare their experiences and try to evaluate why some of them succeed or fail to emerge as stronger at the end of their trials. Evaluation will include analytical essays both in and out of class, class participation, and a final exam.

Literature and Sport: Contest, Credo or Culture? (1 credit)

In the *Odyssey*, Homer describes Odysseus as the quintessential athlete, and Homer's epic contains one of the first recorded episodes of a sporting event. For thousands of years, the ritual of competition has fascinated humans, which has in turn begotten great writing. Sports embody the complexities of the human condition from "the thrill of victory to the agony of defeat." In this course, we will be exploring literature that revolves around the kinesthetic, diving into works by authors such as Ernest Hemingway, Bernard Malamud and Norman Maclean. What is the connection between sports and culture? Is a yearning to win intrinsic to all people? What draws us to the crack of the bat, and why do we always cheer for the underdog? Is sport "just a game"? Although the late Frank Deford argues that football is "embedded in our American calendar, in our American culture, and in our American blood and guts," sports in general are even more so. Come read, write and think about authors who have been drawn to "the human drama of athletic competition."

Literature of the Harlem Renaissance (1 credit)

This course will examine various literary works of the Harlem Renaissance, from the 1920s to the 1930s, as well as take a look at the origin, impact and legacy of the movement. We will examine works by Harlem Renaissance writers such as Langston Hughes, James Weldon Johnson, Claude McKay, Zora Neale Hurston, Nella Larsen and Countee Cullen. From there we will explore the movement's influence on future writers, through possible works by Richard Wright, Ann Petry or August Wilson. The course will also study the music and art of the Harlem Renaissance, the influence of the New Negro Movement, and various historical documents to support our discussion of the literature. We will take a close look at the experiences of each author and their search for identity amidst issues of race, class and gender. Students will be evaluated based on numerous assessments and writing assignments, including journal responses, discussion board posts, quizzes, analytic essays (both in-class and out of class) and oral presentations.

Modern American Drama (1 credit)

The possibility of achieving the "American Dream" is a topic that has consistently concerned the playwrights of the modern American theater. We will explore the works of playwrights of the 20th and 21st centuries (authors may include Eugene O'Neill, Tennessee Williams, Arthur Miller, Lorraine Hansberry, Sam Shepard, David Mamet, Suzan-Lori Parks, August Wilson, Wendy Wasserstein, Tony Kushner, Tracy Letts, Lynn Nottage) to consider whether the "American Dream" is more dream or nightmare. Students will be required to complete discussion board postings, mini-essays, class recitations and staged readings, several major analytical writing assignments, and a final performance and analysis.

The New Journalism (1 credit)
In this course, we will examine major works from the New Journalism movement of the 1960s and 70s, in which writers experimented with describing real-life events using the techniques of fiction writing. These works raise provocative questions about the boundaries between truth, fact, and fiction, complicating notions of journalistic objectivity. The essays and "nonfiction novels" we will read also describe aspects of American life during a period of seismic cultural change. Writers may include Truman Capote, Tom Wolfe, Joan Didion, Hunter S. Thompson, Norman Mailer and others.

Voices from the American South (1 credit)
Students will explore the works of four contemporary Southern writers – Flannery O'Connor, Lewis Nordan, Yusef Komunyaaka, Octavia Butler – as they grapple with the issues of race, gender, class and power. The forms and genres these four award-winning writers use to confront these topics range from short stories to magical realism to poetry to speculative fiction, all with the aim of illuminating some thread, some filament of the challenges – interwoven and overlapping – that continue to reverberate throughout the varied geography of the US. The course will also require additional readings or assignments designed to provide context for the historical events associated with these works. Students will be evaluated based on numerous assessments and writing assignments, including journal responses, quizzes, formal analytic essays and personal narratives, and projects and oral presentations.

OFFERED ODD YEARS (2023-2024) – BRITISH/EUROPEAN LITERATURE BEFORE 1800

English Poetry From the Renaissance to the Enlightenment (1550-1800) (1 credit)
The period from the late 16th century to the late 18th century produced some of the greatest poems in the English language – on love, life, politics, philosophy, travel, religion and many other topics – many of which contributed phrases and ideas to the language that are now in common parlance. In this course you will look long and deep at many of them, extending your understanding from the Foundations sequence about how poetry works and supplementing it with knowledge of the literary and cultural history that surrounds these works in particular. Poets to be studied may include Spencer, Ralegh, Shakespeare, Marlowe, Queen Elizabeth I, Donne, Marvell, Herbert, Jonson, Herrick, Milton, Rochester, Dryden, Pope, Swift, Gray and Collins.

The Henriad (1 credit)
Like so many who have come before, let us go "once more unto the breach" and engage with one of the most compelling dramatic series of all time. Shakespeare's Henriad begins with *Richard II*, continues in *Henry IV Parts I & II*, and culminates in the triumphant *Henry V*. We will bring the plays off the page through dramatic readings and scene presentations. Course requirements will include essay writing and the staging of a scene in place. "The game's afoot. / Follow your spirit, and upon this charge / Cry, 'God for Harry, England, and St. George!'"

The Individual in Medieval and Renaissance Society (1 credit)
"To be or not to be," stated Hamlet, as he weighed his options upon returning from Wittenberg. In this class we will examine the place of individuality as one is pressed by the society to acquiesce, fight or succumb to forces beyond one's control. With William Shakespeare's *Hamlet*, Geoffrey Chaucer's *The Canterbury Tales,* and Dante Alighieri's *Inferno*, we will pursue the themes of individual choice as seen through these classic texts. Other works will complement these as we pursue what role individual choice maintains in times of crisis. The course will be discussion-based.

Mythology and Literature (1 credit)
Consider the study of English - the stories and ideas, the literary movements and forms of expression - as a conversation that began before the invention of written language and that continues to this day. Within that conversation are inside jokes, references and allusions that deepen that conversation for those "in the know." This course will examine the ancient stories and mythologies that continue to speak to us:

The Book of Genesis, *Gilgamesh*, comparative mythologies and fairy tales. We will finish by applying our understanding of these stories to Neil Gaiman's *American Gods*. Assessments will include formal essays, reading quizzes, a research component and a final exam.

On the Road: Travel Tales from the British Isles (1 credit)

Some travel for adventure, others to leave something behind. Some travel to honor God, others to conquer. Some travel to defeat monsters, others on their travels are seen as monstrous. In this class, we will read three essential works about travel from the British literary canon, choosing from *Beowulf, Sir Gawain and the Green Knight*, *The Canterbury Tales, Gulliver's Travels* and *The Tempest*. Reading these texts will allow us to explore the worlds created and captured in these works, as well as consider what these works tell us about British history and key points in the development of British literature. From the epic tale of Beowulf's bravery, to the bawdy and pious stories of Chaucer's pilgrims and Sir Gawain's travels, to the sharp satire of Gulliver's many adventures, to the mix of the magic and the prosaic on Prospero's island, the reading for this class will allow us to leap through time and space on a tour through British literature, history and culture.

Shakespeare: Tragedy Tomorrow, Comedy Tonight (1 credit)

This course will examine numerous works by William Shakespeare, focusing on both tragedy and comedy. How does Shakespeare weave the themes of love, marriage, and loyalty into his works? We will delve deep into these themes and the relationships between the characters in the plays, while also discussing how these issues pertain to our world today. We will also explore Shakespeare's use of language, as well as discuss the element of drama and the historical context of his era. Class discussion will be an important component of the course, and students will be evaluated based on numerous assessments and writing assignments, including journal responses, discussion board posts, quizzes, analytic essays (both in-class and out-of-class) and oral presentations.

Saints and Sinners (1 credit)

This class will use a wide-ranging selection of pre-1800 tragic plays, autobiographical writings and lyric and epic poems to explore themes of good and evil, suffering and salvation, and redemption and despair. Students will deepen their understanding of literature, religion and history while also sharpening their ability to read and write more critically. Texts may include Dante's *Inferno*, John Milton's *Paradise Lost*, Augustine's *Confessions*, William Shakespeare's *King Lear*, and Christopher Marlowe's *Doctor Faustus*.

Satire (1 credit)

Satire is one of the longest-lived modes of literature, beginning as far back as ancient Rome, and unsurprisingly so, since civilization needs sharp critiques of its follies and vices. In this course, you will study some of the most well-known satires and satiric comedies in English, culminating in the writings of the Enlightenment, the so-called Golden Age of English satire. Since satire frequently focuses on affairs and personages of the day, you will study the cultural contexts for these works as well as the particular methods the works employ to land their points. Authors in the course may include Geoffrey Chaucer, Ben Jonson, Richard Brinsley Sheridan, John Dryden, William Congreve, Alexander Pope and Jonathan Swift. You should expect to write frequently and thoughtfully about these texts and about your experience of reading them, as well as to imitate some exemplars in writing a satirical critique of your own.

Through the Eyes of the Other: Alienation Across Literary Genres (1 credit)

In literature, "the other" is a character who is seen by a society as someone who does not fit the mold of the norm – physically, religiously, racially, ethnically and often morally. Students will explore essential questions such as: Why are certain characters seen as "the other?" Which common characteristics does "the other" share across works? Finally – how does "the other" cope with his/her alienation, and how do these coping mechanisms manifest over the course of a poem, novel or play? We will examine seminal works in which "the other" plays a significant role in the literature at hand. Potential works include the epic poem *Beowulf*, the post-modern novel *Grendel* by John Gardner and Shakespearean plays to be determined.

TERM III

OFFERED EVEN YEARS (2022-2023) – BRITISH/EUROPEAN LITERATURE AFTER 1800

Austen and Dickens (1 credit)

Jane Austen and Charles Dickens are considered two of the leading authors of 19th-century British literature. This course will allow students to reflect on the place such works as *Pride and Prejudice, Persuasion, A Christmas Carol,* and *Great Expectations* have in the world of 19th-century British literature and in the evolution of the modern novel. We will also examine what these works tell us about city and country life in 19th-century Britain. In comparing these authors, we will consider issues of style, voice, authority and thematic focus. Students will be required to complete a series of reading quizzes, several major analytical writing assignments and a final project.

The Bloomsbury Group (1 credit)

According to the *Routledge Encyclopedia of Modernism*, the Bloomsbury Group is a "loosely defined social circle... of writers, artists, and intellectuals who lived and worked in the area in the early part of the 20th century." Members of the group contributed to various aspects of modernist thought and culture including feminism, analytic philosophy, psychoanalysis, macroeconomics, progressive domestic arrangements, left-oriented politics, Post-Impressionist art and literary experimentation. The influence of the Bloomsbury group continues to resonate with contemporary authors, artists and artisans. Our focus will center predominantly on the course will serve to illuminate the "Bloomsbury" influence on art and political discourse. We will read two significant novels, Virginia Woolf's *Mrs. Dalloway* and E.M. Forster's *A Passage to India*, which will be supplemented with poetry and short stories by T.S. Eliot, Katherine Mansfield, D.H. Lawrence and James Joyce. Assignments will include reading tests and quizzes, literary analysis and a short research component.

Disability and Deformity in British Literature (1 credit)

Narratives of all cultures, histories and genres contain widespread and varying representations of disability and deformity – once we begin to recognize it. Using the lens of critical disability studies applied to British literature, we will explore how and why the condition of the body (or the mind) matters in a narrative work. This course will ask you to consider how ideas about disability in British literature create and then enforce the divide between "normality" and "abnormality," how stereotypical portrayals of disability undermine, villainize, punish or victimize the disabled community, but also how literature can function to communicate and empower through narratives that challenge the assumption of disability as "Other" (or as mere "inspiration"). Possible texts may include: *Richard III, Jane Eyre, The Secret Garden, Frankenstein, Mrs. Dalloway, The Elephant Man, The Curious Incident of the Dog in the Night-time, The Miracle Worker, Never Let Me Go* and *The Diving Bell and the Butterfly.*

English Romanticism (1 credit)

This course will immerse students in the emotion and energy of the English Romantic period. The celebration of nature and the evocation of the sublime permeates the verse of the Romantic writers. Students can expect to read from such Romantic icons as William Wordsworth, Samuel Taylor Coleridge and Lord Byron. Let yourself be moved by the spirit of these writers and their works.

Futures of the Past: Speculative Fiction (1 credit)

This class will travel back and forth in time, exploring how writers from the 19th century to the present day have imagined potential paths for humanity. From reanimating corpses to forging friendships with AI, from totalitarian takeovers to alien invasions, we will examine how fiction about fantastic futures tends to reflect contemporary hopes, fears and realities. Writers may include Mary Shelley, H.G. Wells, George Orwell, J.G. Ballard, Kazuo Ishiguro and others.

Gothic Literature (1 credit)
Dungeons, labyrinths, dark castles, flickering candles, harrowing moans, graveyards – we celebrate elements of the Gothic every October, but in the 18th and 19th centuries, the Gothic had its time in the limelight. In Gothic Literature, students will explore novels and short stories focusing on the macabre, mysterious, and supernatural. What drew Regency and Victorian readers to these terrifying tales? Why and how did the Gothic gain popularity? How has the genre evolved? How do contemporary authors use aspects of the Gothic in their works today? Come find out in Gothic Literature – it is a real scream! Possible authors include Horace Walpole, Mary Shelley, Charles Dickens, Anne Radcliffe, Jane Austen and Edgar Allan Poe.

Irish Literature (1 credit)
The history of literature in Ireland is fraught with varied issues. Located in a far corner of northwest Europe, Ireland has been forced to battle famine, wars, and domination by England. We will read literature in several genres that gets to the heart of the Irish experience. We will study James Joyce's short stories, W. B. Yeats' poetry, and John M. Synge's and Samuel Beckett's plays, along with varied contemporary texts.

Modern British Drama (1 credit)
Modern British drama consistently concerns itself with politics, whether it be the politics of the drawing room in the works of Noel Coward, the politics of existence in the plays of Samuel Beckett, the rebellion against the political status quo by the "Angry Young Men" of the 1950s, the politics of identity considered by Harold Pinter, or the politics of class and gender explored by Caryl Churchill and Bola Agbaje. In this course, we will consider how British drama reflects the politics of the time and how British drama has influenced the politics of the time. Students will be required to complete discussion board postings, mini-essays, class recitations and staged readings, several major analytical writing assignments, and a final performance and analysis.

Tales of Love and War (1 credit)
Many literary narratives, going back at least as far as the Iliad, have dealt with the conjunction of love and war. In this class, you will study a few examples of the combination from the last couple of centuries of British literature, giving some consideration to how modernity – including modern love, modern warfare or both – affects the shape of these narratives. Authors may include Alfred Tennyson, George Bernard Shaw, George Orwell, Graham Greene and Kazuo Ishiguro. You should expect to write frequently and thoughtfully about these texts and about your experience of reading them.

Voices from the Victorian Age (1 credit)
The Victorian Age was a time of social, political, economic and cultural change. In this course, students will read a variety of literary works by authors of this period (1830-1900), which may include Charlotte Brontë, George Eliot, Elizabeth Barrett Browning, Christina Rossetti, Robert Browning, Gerard Manley Hopkins and Alfred Tennyson. We will explore numerous issues and themes common to British literature of this era, with specific focus on the role of women in society, the age of industry, British imperialism, scientific discovery, and a variety of social problems and inequalities. Students will be evaluated based on numerous assessments and writing assignments, including journal responses, discussion board posts, quizzes, analytic essays (both in-class and out of class) and oral presentations.

OFFERED ODD YEARS (2023-2024) – WORLD/NON-ANGLOPHONE LITERATURE

Eastern European Literature (1 credit)
This course will explore the literature and culture of Eastern Europe. Possible authors include Milan Kundera, Elie Weisel, Franz Kafka and others. The course will explore the literature with an eye and ear for what makes this region distinct from others, and how its culture shapes the perspectives of narratives' characters. Assessment will include two essays, a test, reading quizzes, and a final exam.

Forgotten Societies in the Modern World (1 credit)
This course will take a look at groups located around the world that are often forgotten or purposely ignored in Western/American ideology. Through both non-fiction and fiction works, we will dive into unique stories about men and women of your age stepping into a "Western" dominated world. We will begin the course with pieces written about the "third world," including *A Long Way Gone: Memoirs of a Boy Soldier* by Ishmael Beah, *White Tiger* by Aravind Adiga, and *The Underground Girls of Kabul: In Search of a Hidden Resistance in Afghanistan* by Jenny Nordberg. We will conclude with selections that bring to light the idea that the "third world" exists in our very own country, through works by T. C. Boyle, Sandra Cisneros, Julia Alvarez and/or Edwidge Danticat. The class will focus on discussing these works in terms of their artistic merit as well as issues surrounding their social, political and economic impact on our world. Students will be evaluated based on numerous assessments and writing assignments, including journal responses, discussion board posts, quizzes, analytic essays (both in-class and out-of-class) and oral presentations.

French Literature from 1850 to the Present (1 credit)
In this course, you will study some of the greatest works written in French over the last two centuries. Beginning with the industrial age and progressing through the Modernist era to the present day, these texts reveal concerns that are both uniquely French as well as global in their significance; some of them have come to define universal conditions in human existence. Authors studied in the course may include Gustave Flaubert, Edmond Rostand, Jean-Paul Sartre, Albert Camus, Samuel Beckett, Jean Anouilh, Simone de Beauvoir, Marguerite Duras, Michel Houellebecq and Amélie Nothomb (all in English translation). Students should expect to write frequently and thoughtfully about these texts and about their experience of reading them.

Indian Literature (1 credit)
India is a country of many languages and of a long history of literature, a literature that captures its myths and history, the story of India's places and people. In this class, we will dip into the deep pool of Indian literature, starting with selections from the epic poem *Mahabharata*, moving on to the poetry of Rabindranath Tagore, India's Nobel Laureate in Literature, and then we will explore some of the amazing novels and short stories of 20th- and 21st-century India, including such authors as Salman Rushdie, Anita Desai, Vikram Chandra, Amitav Ghosh, Jhumpa Lahiri, Arundhati Roy, Aravind Adiga and Rohintin Mistry. We will consider what this literature can tell us about the history, culture and future of India.

Literature of Africa and the Diaspora (1 credit)
What began as oral tradition has now become the source of some of the most powerful and original stories of our world. Working through multiple regions of Africa in multiple genres – poetry, short stories, novels – this course will study the work of African writers as they tackle such topics as gender inequality, the ravages of war and AIDS, colonialism and post-colonialism, and cultural imperialism. Possible texts include Chimamanda Ngozi Adichie's *Half of a Yellow Sun* and Ishmael Beah's *Radiance of Tomorrow*. Assessments will include formal essays, reading quizzes, a research component and a final exam.

Literature of Oppression and Resistance (1 credit)
In 1948, the United Nations signed a treaty on the prevention and punishment of the crime of genocide, declaring for the first time that genocide was a crime under international law. What horrific instances brought these powerful nations to sign such a treaty? In this course, we will read works that bring light to some of the darkest periods of our world's history. Through the poignant voices of our authors and their characters, we will witness startling oppression but also narratives of dogged Perseverance and unbounding optimism. Potential works include literature from Eastern Europe, Cambodia and Rwanda.

Literature of South America (1 credit)
New York Times columnist James Reston once observed that "the people of the United States will do anything for Latin America, except read about it." We will do our part to remedy this situation by exploring major works of South American literature in translation. The poetry, short stories and novels we read will be situated within their historical, political and cultural contexts so that students will gain a deeper

understanding of a diverse region and its array of literary voices. Writers may include Jorge Luis Borges, Gabriel García Márquez, Pablo Neruda, Julio Cortázar, Mario Vargas Llosa, Isabel Allende, Luisa Valenzuela and Roberto Bolaño.

Modern Japanese Literature (1 credit)

In this course, we will examine some of Japan's greatest prose writers of the 20th and 21st centuries, gaining an introduction to the literary and social concerns of an archipelagic nation that has influenced profoundly the history and culture of the entire globe over the last century and a half. These texts have had wide-ranging influence in Japan, in the United States and elsewhere; they have variously earned Nobel Prizes for their writers, inspired adaptations into award-winning films, and turned their authors into overnight celebrities at home and abroad. You will have a chance in this course to see why. Authors studied may include Ryunosuke Akutagawa, Yasunari Kawabata, Kenzaburo Oe, Haruki Murakami, Banana Yoshimoto and Kobo Abe (all in English translation). Students should expect to write frequently and thoughtfully about these texts and about their experience of reading them.

Nobel Laureates from Around the Globe (1 credit)

Come travel the world through literature! Awarded since 1901, the Nobel Prize in Literature seeks to recognize "the person who shall have produced in the field of literature the most outstanding work in an ideal direction." In the years since it has been awarded, the prize has gone to authors writing in 25 different languages, coming from 41 different countries. In this class, we will explore the writing of several authors who have been awarded the Nobel Prize for Literature. Reading the works will take us on a tour of the world, from the Egypt of Naguib Mahfouz to the China of Mo Yan and Gao Xingjian, from Orhan Pamuk's Turkey to Yasunari Kawabata's Japan. We will sample some of the best of world literature through the poetry and fiction of a variety of laureates.

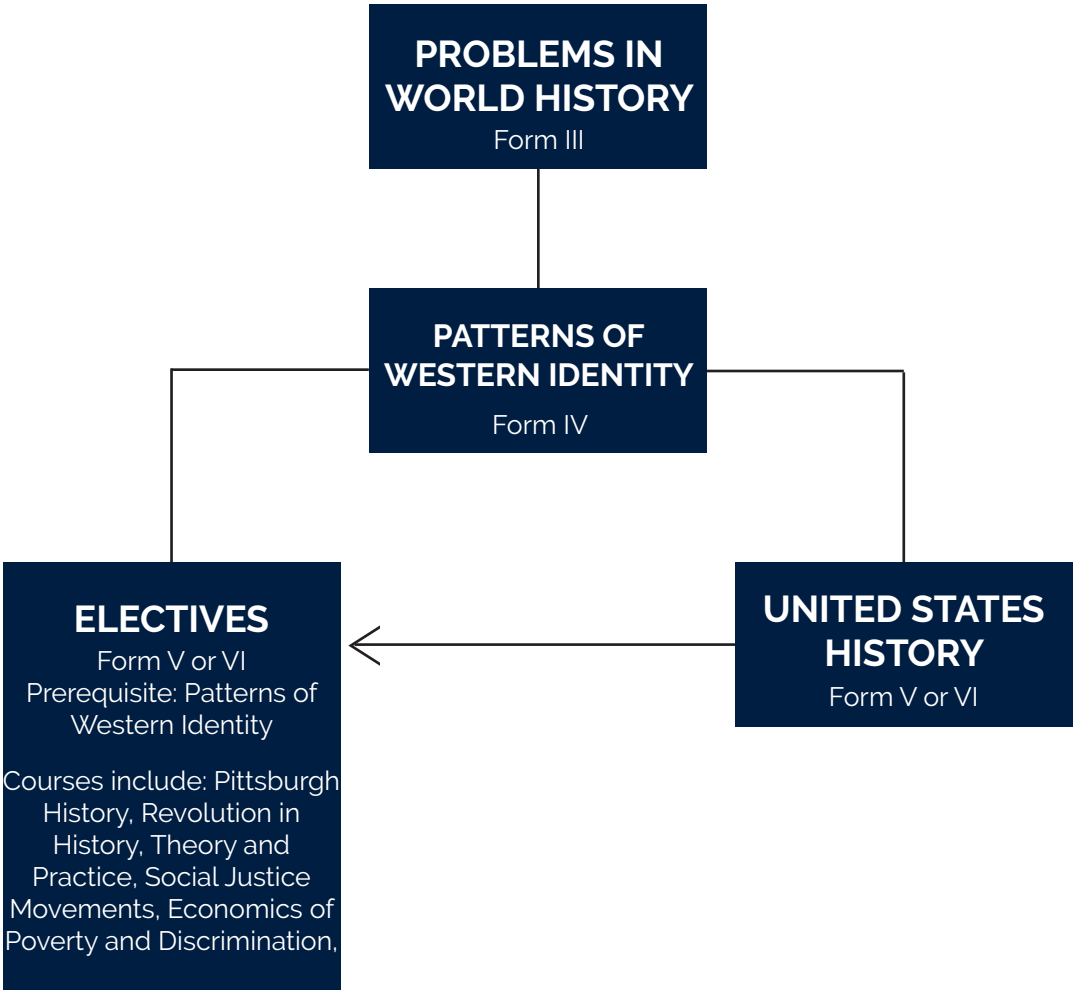
Russian Literature (1 credit)

Vladimir Nabokov once stated that all modern literature began with Nikolai Gogol. Taking Nabokov's cue, we will look at the literature from this vast country during the modern period, including a range of texts from the modern Russian masters: Pushkin, Chekhov, Dostoevsky, Tolstoy, Gogol and Turgenev. We will examine Czarist Russia as it rises and falls through a variety of texts. The course will be discussion based.

HISTORY

Mr. Kyle Smith, Chair

HISTORY COURSE SEQUENCE



HISTORY DEPARTMENT MISSION STATEMENT

The Senior School History Department offers a curriculum guided by two complementary educational aims: to introduce students to the breadth and depth of the human experience by a comparative study of past and contemporary societies and cultures; and to develop in students the skills of research, analytical writing and critical thinking that are central to historical inquiry, broadly transferable to other disciplines, and central to a rich and fulfilling intellectual life. Students are trained to explore the past through the use of a variety of primary and secondary sources and are challenged to interpret past events to arrive at original conclusions to complicated problems. Further, they are taught to think critically about the discipline of history and how historical arguments are shaped by the eras that produced them. Our three core courses build on each other in both content and skills, while a range of elective courses offer students with a keen interest in history the opportunity to explore subjects that engage them on a deeper level.

CORE COURSES

Problems in World History (Form III or Form IV) (3 credits)

This course uses selected content to trace historical roots of modern problems and, therefore, forms the foundation for future history courses. The beginning course of the three-year history requirement serves multiple purposes. It develops the analytical skills necessary for advanced historical research and scholarship in later courses, building reading, writing and thinking skills as used by historians and social problem solvers. The course also introduces students to the use of narrative as a means of understanding historical phenomena and allows students to explore history from multiple perspectives. The guiding theme of the course is identity, both individual and national. Taking a problems-based approach to history, the course gives students the foundational historical knowledge they will build upon to develop an understanding of the forces that shape history: political structure, religion, trade and economics, family and social structure, geography, the environment, and cultural phenomena.

Patterns of Western Identity (Form IV or Form V) (3 credits)

Patterns of Western Identity builds upon the analytical skills the students began to develop the previous year in Problems in World History. It is a course that provides a general understanding of history as an intellectual discipline along with basic methods of historical research through the study of primary and secondary sources. The skill focus for this course is the construction of historical argument and analytical writing. The more extensive writing requirement is designed to prepare students for the United States History research paper the following year. Rather than a mere survey course of western civilization, this course uses a thematic approach to emphasize global connections of western culture and the impact of western societies on the world in the modern era. PREREQUISITE: Problems in World History

United States History (Form V or Form VI) (3 credits)

United States History, to be taken in either the Form V or VI, is the culmination of three years of historical learning. It is a course that provides a general understanding of history as an intellectual discipline along with basic methods of historical research through the study of primary and secondary sources. Starting with European contact with Native Americans and continuing to the present, this course concentrates on the political, social, cultural, economic and intellectual forces that shaped American civilization. While this course will address many themes in American history, such as the struggle for racial and gender equality, the guiding theme of the course will be to trace American national identity. Never static and always complex, the idea of America and the definition of who is an American will be core issues this class will address. A unique feature of the course is the opportunity for students to prepare and write a formal research paper that incorporates both primary and secondary historical sources. While the course is not specifically designed to prepare students for the Advanced Placement Examination, students can confidently elect to take the exam. The content coverage and skills focus of the course make this option viable for most students, but it is recommended that students considering taking this exam will have achieved a B or better in the course. The responsibility for preparation remains with the student, but the faculty is available to assist. PREREQUISITE: Patterns of Western Identity

ELECTIVES

History electives should be selected with an alternate course indicated. The following electives will be offered depending upon enrollment numbers. If an elective is canceled, students will be placed in the alternate choice if their schedule permits.

TERM I

History of African American Modern Social Justice Movements in America (1 credit)

This course examines continuities and transformations in both the study and practice of modern social movements. The course will explore why movements emerge, how they develop and what they accomplish. We will study several dimensions of collective action, including their organization, leadership, ideology and objectives. We will also seek to understand the sometimes powerful and sometimes subtle influences of social movements on the nature of socioeconomic, gender, sexual identity racial, ethnic, national and transnational relations today. The course will make these greater connections through a close examination of African American history and the Civil Rights movement in the United States.

Pittsburgh at the Edge of the World (1 credit)

While much of America's late colonial and early national history takes place on the east coast, Pittsburgh was the epicenter of a struggle that would eventually give birth to the country. On the other side of the Allegheny Mountains, Pittsburgh was coveted by three powerful empires: the farmland-hungry English, the eager-to-trade French and the mighty Iroquois Confederacy. Caught in the middle were those living at the forks of the three rivers, including European settlers from the East and West, but also the native peoples who called this place home, including the Delawares and a ragtag band of the southern Senecas known to the Iroquois as the Mingos. In this course, students examine the large-scale political and military conflicts that Winston Churchill called the real First World War, but they will also learn about the oddballs drawn to America's first frontier and the unusual, ephemeral, hybrid cultures that sprung up in the highly contested space that would become the Steel City. Students close the term with the hilarious historical novel, *The Whiskey Rebels* by David Liss. PREREQUISITE: Concurrent with United States History or the Form VI year

Revolution in Ancient Rome (1 credit)

This course examines the rise and fall of the ancient Roman Republic from 509 BC to 23 AD. The founding of the Republic overthrew a system of monarchy and established a republican government that lasted for hundreds of years with a dynamic system of checks and balances between power and liberty and allowed the Romans to conquer the Mediterranean world. But victory would have its price and the bonds that held Roman citizens together frayed and ultimately destroyed the Republic. Social strife over citizenship, corruption and inequality gave birth to a new autocratic society and government: the Roman Empire. How does a powerful and stable republic collapse into revolution? How does a democracy die? This is that classic story of the ancient world of larger than life figures like Caesar, Sulla, Marius and Brutus that holds important lessons for the present. The course also analyzes larger theoretical questions about revolutions and historical perspectives on the Roman Revolution. Students will engage in these topics through writing exercises, discussions, simulations and creative projects.

TERM II

History of Modern Social Justice Movements in America, Gender & Sexuality (1 credit)

Our understanding of the past is transformed when we consider it through women's experiences. This course, therefore, moves through the chronology of American history to examine the broad themes that have shaped women's lives in the United States from the colonial period to the present. While tracing larger trends and identifying common experiences, we will also pay close attention to the specific experiences of individual women in order to shed light on the differences and divisions among them and how and when they come together to organize for change. We will trace interrelated themes such as the changing conditions and ideas about unpaid housework and paid work; relations between different groups of women and the way relations of power have shaped these interactions; the ongoing political and social struggle to gain increased civil and political rights; and the changing notions of "proper" roles for women, especially regarding sexuality. Throughout, we will explore the ways in which notions of gender have changed over time and how a wide variety of women both created and responded to shifting cultural, political and social roles as activists. PREREQUISITE: Concurrent with United States History or the Form VI year

Pittsburgh: Steel, Blood and Money (1 credit)

This term will focus on the Pittsburgh that became the heart of industrial America. As mills mushroomed along the shores of the city's rivers and railroad tracks connected Pittsburgh to every place of consequence in the United States, two interdependent and contrasting societies emerged in the country, and they were nowhere on better display than in Pittsburgh. While immigrant communities labored in the sooty shadow of the mills, building distinct communities, sometimes getting ahead but mostly laboring under harsh conditions for low pay, a new class of super-rich Americans was building the modern industrial and financial system and was shaping the city through its companies and philanthropy. In Pittsburgh, these titans included Andrew Carnegie and Henry Clay Frick, of course, but also inventors like George Westinghouse, engineers like Alfred and Roy Hunt, food processing pioneer H.J. Heinz and retailing giant Joseph Horne. Issues of class, industry and ethnicity that were played out on a grand scale across the nation can be studied in microcosm in Pittsburgh. This term course examines the tension between both sides of the class divide, focusing on excerpts from Les Standiford's *Meet You in Hell*, which chronicles the falling out between Carnegie and Frick, and literature including Thomas Bell's *Out of This Furnace*, and tours of buildings still standing in Pittsburgh, including steel mills, houses like Frick's Clayton, and the products of philanthropy, such as the Homestead Library, to introduce students to these oddly symbiotic sectors of American society. PREREQUISITE: Concurrent with United States History or the Form VI year

Revolution in Modern Latin America (1 credit)

This course examines Modern Latin American history through the lens of revolutionary change. The primary goals of this course are to study in depth 19th and 20th century Latin American history, how revolution has been historically integral in the shaping of Modern Latin America, and how identification with revolutionary and counterrevolutionary forces has shaped Modern Latin American politics. The course will largely focus on major moments of revolutionary change in Modern Latin America: Latin American Independence, the Mexican Revolution, the Cuban Revolution and the era of right-wing counterrevolution throughout the 1970s and 1980s. While studying each of these case studies, students will engage in and discuss the major historical arguments of Modern Latin American history, read primary and secondary sources, and hone their critical thinking and writing skills. Students will engage in class discussions, writing exercises, debates and creative projects.

TERM III

The Economics of Poverty and Discrimination (1 credit)

This course explores current and historical problems such as minimum wage, prison privatization, the economics of slavery and income inequality using a historical and quantitative approach. The course will offer an interdisciplinary approach to the study of history and social change. It incorporates history, economics, sociology, anthropology and ethnology. It uses the quantitative tools of economics to explore specific social questions. The course will expose students to ideas and social problems to which they would otherwise not be exposed, and they will learn the importance of quantitative analysis in determining problems and solutions in the social sciences. PREREQUISITE: Concurrent with United States History or the Form VI year

Pittsburgh: From Soot to Rust and Beyond (1 credit)

This course begins with an exploration of an under-studied aspect of Pittsburgh's history: its African-American population. We study Pittsburgh's role in the Great Migration, reading August Wilson's *Joe Turner's Come and Gone* and learning about Pittsburgh's legendary Hill District and Negro League baseball teams, the Grays and Crawfords. Moving to mid-century, as industrial jobs fled first south and then across borders and over oceans, the industrial middle class built on union movements of the 30s and post-WWII prosperity found itself threatened by the end of America's industrial dominance. As the mills closed, Pittsburgh became a symbol of the nation's troubles, but as it neared the 21st century, it also demonstrated another of Pittsburgh's trademarks, the capacity for renewal and reinvention. Students will learn about how visionary leadership, Republican and Democratic, private and public, helped Pittsburgh lay the groundwork for a future after steel and became a center for education, innovation and widely recognized as one of America's most livable cities. Students will read local authors ranging from Brian O'Neill to Damon Young as they consider Pittsburgh's challenges in the present and future. We will also visit some attractions that embody this reinvention, such as Bicycle Heaven, Randyland and the historic Carrie Furnace site. This course will utilize primary and secondary sources such as film, novels and memoirs, oral history and the Heinz Regional History Center. PREREQUISITE: Concurrent with United States History or the Form VI year

Recording Our History (1 credit)

Recording our History introduces students to the genre of oral, or spoken, history and give them the experience of creating authentic historical projects of their own using this modality. Students will become familiar with critical examples of oral history and learn the methods of conducting, recording, transcribing and archiving narrations of people in their communities. Each student will record and publish at least one narration using their smartphones and a video editing suite. They will be encouraged to preserve the recollections of a member of their community or our region that can shed light on the average person's experience during a specific period of time. By historicizing vital aspects of a local place during a particular time, students will be practicing authentic history and leave the course with an enduring product.

Revolution in Modern China (1 credit)

This course examines the role that revolution has played in shaping modern China. The course will analyze theories of revolution, historical perspectives on the major revolutionary changes in modern Chinese history, and the transformation of a worldview grounded originally in Imperial Confucianism to one dominated by Maoism and then eventually a form of authoritarian capitalism. Starting with an introduction on historical theories on revolution, the course will examine the major pillars of the old Confucian Order, the impact of Western Imperialism on China in the 19th Century, the rise of Chinese nationalism, the Chinese Civil War between Chiang Kai-Shek and Mao Zedong, the pillars of the new Maoist State, the Great Leap Forward, the Cultural Revolution, and the rise of Deng Xiaoping and Chinese capitalism. Students will engage in discussions, debates, writing exercises and creative projects as we tackle the topics of the course.

ECONOMICS COURSES

These courses do not fulfill the diploma requirements for History.

Introduction to Macroeconomics (Form V and VI) (Term I) (1 credit)

This course teaches students the tools necessary for understanding the economy as a whole, and how countries interact with one another in the realm of economic decision making. Students examine how economic indicators (CPI, GDP, unemployment rate) impact decisions made by governments, individuals and firms. Fiscal and monetary policies are analyzed in the context of historical events and students take part in simulations in which the impact of policy-making on society will be evaluated. International trade and currency markets are studied as well as examining the role the United States plays in the world economy. Students who are interested in economics, public policy, political science, business, finance and government should consider taking this course. PREREQUISITE: There are no prerequisites to the course, but a student taking this course is precluded from taking the yearlong Economics course.

Introduction to Microeconomics (Form V and VI) (Term II) (1 credit)

This course provides an introduction as to how individuals, firms and societies deal with the central economic problem: the allocation of scarce resources. Students examine how individuals and firms make decisions, and how government intervention impacts both the product and labor markets. Students study the pricing and output decisions of firms in a variety of markets, including an analysis of how Game Theory applies to decision making. In addition to the product market decision-making process, students examine how the labor market operates within the larger parameters of unions and collective bargaining. During each unit of study, students apply economic principles to real-world scenarios and learn how to "think like an economist." PREREQUISITE: There are no prerequisites to the course, but a student taking this course is precluded from taking the yearlong Economics course.

Economics (Form V and VI) (3 credits)

The yearlong Economics course examines how individuals, firms, and societies deal with the central economic problem: the allocation of scarce resources. Topics in both microeconomics and macroeconomics are addressed, and we analyze how economic decision-making is used to solve problems in both the public and private arena. Units of study include: The Economic Problem, Markets in Action, International Trade, Economic Indicators, Monetary Policy and Fiscal Policy. The focus of this course is on using critical thinking to analyze the economic decisions made by individuals, businesses and nations. Students will become skilled in applying economic principles to predict human behavior for individuals and firms, and learn how to 'think like an economist'. This rigorous course prepares students for applying economics to their studies in business, public policy and political science at the university level. PREREQUISITE: While there are no prerequisites for this course, calculus is strongly encouraged.

PHILOSOPHY COURSES

These courses do not fulfill the diploma requirements for History.

The following electives will be offered depending upon enrollment numbers. If an elective is canceled, students will be placed in the alternate choice if their schedule permits.

Introduction to Philosophy (Form VI) (3 credits)

This course is an introduction to the investigation of the basic principles which underlie the fundamental assumptions made in every discipline. We seek to understand what makes some arguments good and others bad (by studying logic), what makes some actions good and others bad (ethics), what makes some things knowledge and others mere opinions (epistemology), and what makes some ways of viewing the world better than others (metaphysics). In our investigation we consider the following questions:

How does one win an argument?
How does one determine what we should or shouldn't do?
When can one say that he really knows something?

Is there any free will, or is everything we do completely determined by our environment and heredity?
Is there a God?
Is a person anything more than a physical body with a physical brain?
Is there any "higher" reality or does the everyday world we ordinarily experience constitute all that there is?

We first learn to identify and evaluate an argument and then use this skill to examine a number of classical answers to the above questions. However, as the course progresses, the students will be expected to develop their own positions on a number of the above issues, to analyze the positions of other students, and to respond to such critical analysis themselves. PREREQUISITE: This course is open to Form VI students or by special request of the Dean of Studies.

Introduction to Ethics (Term I) (1 credit)

This course covers the traditional theories of ethics (utilitarianism, social contract theory, theories of rights and duties, caring, justice, etc.) as well as extensive discussions of contemporary problems facing people today within the context of these classical ethical theories. Readings are selected from both traditional sources (Plato, Aristotle, Hobbes, Kant, Mill) and commentaries on contemporary events. Each student is expected to become an expert on one contemporary problem and one traditional theory and will be expected to play a major role in teaching those subjects to the rest of the class. PREREQUISITE: This course is open to Form VI students or by special request to the Dean of Studies.

Philosophy of Happiness and the Good Life (Term II) (1 credit)

How do I live a happy life? This question could rightly be described as one of the central questions of both the western and eastern philosophical traditions. In this course, we examine historical and contemporary answers to this question from a wide range of academic disciplines. The course is grounded in examining the classical philosophies of the good life: from Aristotle's Nichomachean Ethics and the writings of Epicurus and the Stoics, to the answers provided by Maimonoides, Confucius and the Bhagavad Gita. The course also examines contemporary findings on the nature of happiness from a psychological and scientific perspective. PREREQUISITE: This course is open to Form VI students or by special request to the Dean of Studies.

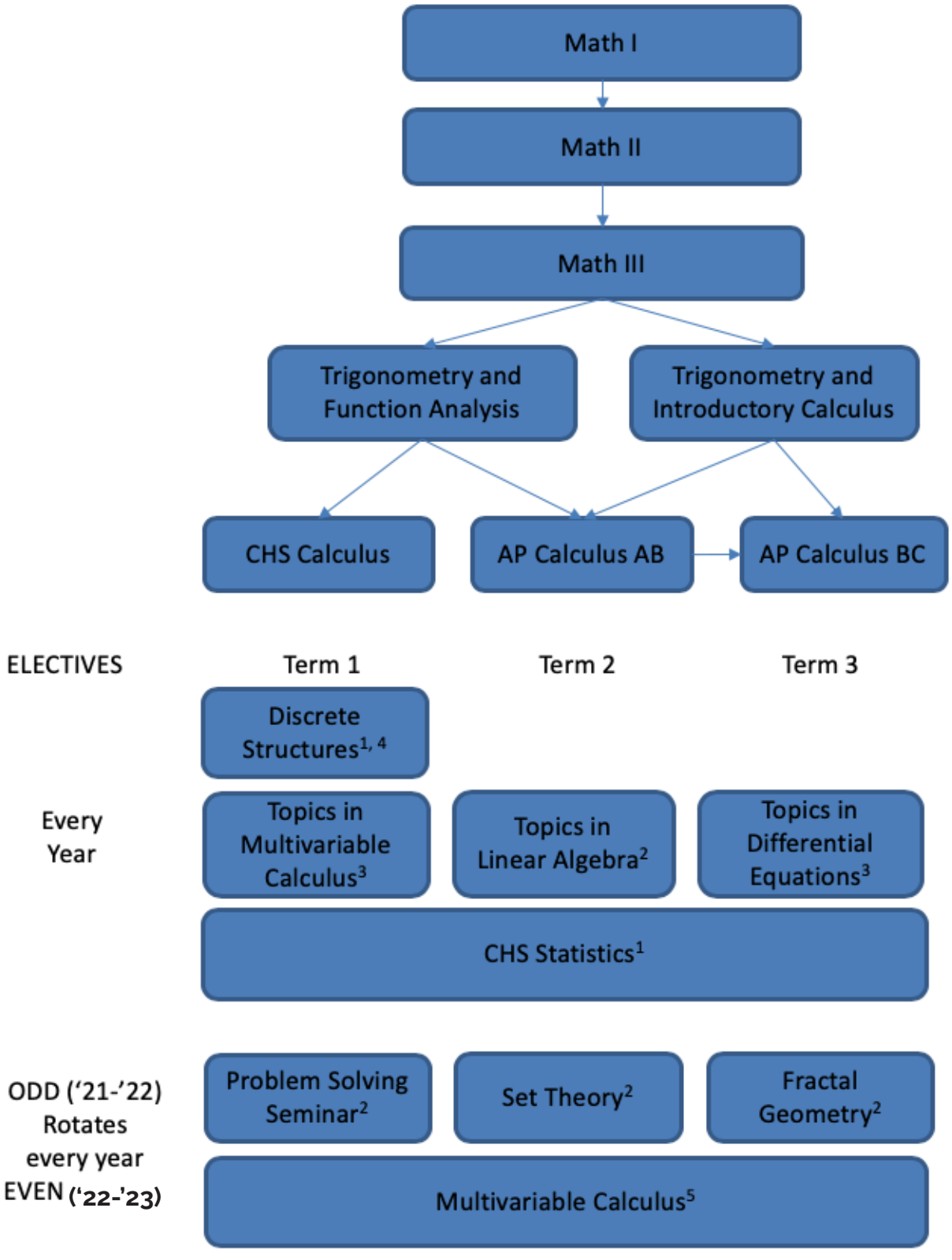
Philosophy of Religion (Term III) (1 credit)

This course helps students develop a better understanding of both the religious and secular views of the world in which we live. The fundamental principles that underlie a number of different religions (Eastern and Western) are examined. In addition, the challenge that modern science (especially psychology/ biology/physics) is often held to present to religion is looked at in detail, and the religious responses to this challenge will be examined. We also examine the thesis that man's search for meaning and significance in life results in a 'religious-like' attitude toward some similar central unifying theme - whether it appears in the form of traditional organized religion, non-traditional personal religious beliefs or secular humanistic causes. PREREQUISITE: This course is open to Form VI students or by special request to the Dean of Studies.

MATHEMATICS

Ms. Amy Yam, Chair

STANDARD MATH COURSE SEQUENCE



MATHEMATICS DEPARTMENT MISSION STATEMENT

The Senior School Mathematics Department promotes problem-solving grounded in creativity, logical thinking, collaboration algorithmic computation, and risk-taking. Through a variety of teaching methods and activities, we strive to illuminate the interdisciplinary threads that connect mathematics to other disciplines, while also underscoring the beauty of the subject in its own right. We emphasize the importance of student participation in classroom discussion, and mathematical discourse is modeled verbally and in writing. In all that we do, we hope to promote a lifelong appreciation for mathematics.

All students in the Senior School are required to have a graphing calculator with CAS (Computer Algebra System) capability. Possible options include the TI-89 Titanium or the TI Nspire CX CAS. Note: While the SAT allows these calculators, the ACT only allows calculators that do NOT have CAS functionality.

STATEMENT ON SECTIONING

In an attempt to better meet the needs of our students, the Mathematics Department groups students by demonstrated ability, as scheduling permits. This grouping is based on performance in previous math classes, teacher recommendation and performance on placement tests, where applicable. We believe that grouping by ability better addresses the needs of our students by allowing teachers to differentiate the curriculum with appropriate remediation and enrichment, and enables more productive and efficient conversations in the classroom.

STATEMENT ON PLACEMENT IN AP COURSES

"Advanced Placement (AP) is a program in the United States and Canada, created by the College Board, which offers college-level curricula and examinations to high school students. American colleges and universities often grant placement and course credit to students who obtain high scores on the examinations. The AP curriculum for each of the various subjects is created for the College Board by a panel of experts and college-level educators in that field of study. For a high school course to have the AP designation, the course must be audited by the College Board to ascertain that it satisfies the AP curriculum. If the course is approved, the school may use the AP designation and the course will be publicly listed on the AP Course Ledger." ("AP Course Ledger." AP Course Audit. University of Oregon. Retrieved 13 May 2014.)

When determining placement of a student in Advanced Placement courses, the Mathematics Department will make recommendations based on the following: student performance in previous mathematics classes, performance on final exams, ability to grasp concepts quickly, self-motivation, ability to exert effort over an extended period of time, and an interest in and enthusiasm for mathematics.

PLACING OUT OF A MATHEMATICS COURSE

While we generally do not encourage students to place out or "skip" a course within the departmental sequence, we understand that there are circumstances in which an advancement is recommended. Students interested in placing out of a mathematics course must first seek approval from the Mathematics Department Chair and Dean of Studies. After approval, the student must complete the content of that course on his/her own through an approved course of study and earn at least a B on the departmental final exam to place out of the course and enroll in a more advanced course. The Department Chair and/or the Dean of Studies reserve the right to review all completed work and determine whether it satisfies the course requirement. Note, however, that students receive neither a letter grade nor academic credit for the course, out of which they have placed.

CORE COURSES

Math I (3 credits)

Mathematics is a problem-based, student-centered study of foundational algebraic concepts. For some, this will be their first attempt at moving beyond pre-algebra content. All students will have the opportunity to solidify their understanding of important concepts and skills used in all future math classes. In this course, real-life applications are explored in the context of word problems, and student discourse is fostered in the classroom. Students are active participants in their own learning by completing problems through which key concepts are investigated. Reading, writing and speaking mathematics are emphasized by requiring students to complete solutions to open-ended word problems and present their findings in class. The students learn new ways of thinking to solve problems through the creative solutions produced by their peers. The teacher helps the students navigate the problem-solving strategies needed to discover solutions and make conclusions. Supplemental materials are provided for the students to practice the concepts as needed.

Math II (3 credits)

Math II is a problem-based, student-centered study of geometric concepts. This course is for the student who has completed and mastered Math I or Algebra I. In this course, students are active participants in their own learning by completing problems through which key geometric concepts are investigated. Reading, writing and speaking mathematics are emphasized by requiring students to complete solutions to open-ended word problems and present their findings in class. The students learn new ways of thinking to solve problems and to formalize their logical thinking. The teacher helps the students navigate the problem-solving strategies needed to discover solutions and to make conclusions. Supplemental materials are provided for the students to practice the concepts as needed. PREREQUISITES: Math I or successful completion of an Algebra I course and a demonstration of mastery of the concepts found in Math I

Math III (3 credits)

Math III is a problem-based, student-centered study of advanced algebraic concepts. This course is for the student who has completed Math I and Math II (or has completed an Algebra I and Geometry course and has mastered the concepts found in Math I and Math II). In this course, students are active participants in their own learning by completing problems through which key geometric concepts are investigated. Reading, writing and speaking mathematics are emphasized by requiring students to complete solutions to open-ended word problems and present their findings in class. The students learn new ways of thinking to solve problems and to formalize their logical thinking. The concepts in Math III expand upon the concepts found in Math I and II and extend problem-solving to non-linear functions. The non-linear functions emphasized include quadratic, rational, exponential and logarithmic equations. An introduction to vectors, paramtric equations, conics, probability and basic statistics, and a review of right triangle trigonometry will lead into a precalculus level class the following year. PREREQUISITES: Math II or a Geometry course and a demonstration of mastery of the concepts found in Math I and II

Trigonometry and Function Analysis (3 credits)

The majority of Problem-Based Mathematics III students take Trigonometry and Function Analysis as their next course. This level of mathematics is taken by students who are preparing for the CHS Calculus or the AP Calculus AB course. Topics include: trigonometry; an in-depth analysis of the 12 basic functions and their transformations; inverses; solving polynomial, rational, radical, logarithmic and exponential equations and inequalities; conic sections; and limits and continuity. PREREQUISITES: Math III

Trigonometry and Introductory Calculus (3 credits)

The pace, rigor, and additional topics of study differentiate this course from Trigonometry and Function Analysis. This is an accelerated level of mathematics taken by students who are preparing for an AP Calculus course. During the first half of the year, all of the topics from Trigonometry and Function Analysis are studied with a more sophisticated application of trigonometry concepts. Differential calculus is studied the second half of the year. Topics include: a systematic study of limits; derivatives of polynomial, rational and transcendental functions; related rates, maxima and minima, Rolle's Theorem; and the Mean Value Theorem. PREREQUISITES: (1) A- or higher year-end grade in Math III; (2) B+ or higher on Math III final exam; and (3) Department recommendation

CHS Statistics (3 credits)

A wide range of students choose to take this course. Some take it in place of calculus while others take it at the same time as calculus or as an elective after completing calculus. In this course, students practice methods for collecting their own data so that they can analyze and draw conclusions about a larger population. They learn the art of presenting and interpreting data in a concise, meaningful, and accurate manner. Topics such as probability and statistical significance also are explored, especially in their relationship to conducting experiments. Hands-on work is strongly emphasized. The course is part of the University of Pittsburgh's "College in High School" program. Students may exercise the option to take the course for four college credits (at a minimal cost) from the University of Pittsburgh. PREREQUISITE: Math III or Geometry and Algebra II

CHS Calculus (3 credits)

This course is designed for students interested in business, economics and other social sciences. Applications to the social sciences, especially business and economics, are stressed. The calculus of trigonometric functions is not covered. Topics included in this course are limits and continuity, differentiation and integration of polynomials, logarithmic and exponential functions, and multivariable applications. The course is part of the University of Pittsburgh's "College in High School" program. Students may exercise the option to take the course for four college credits in Business Calculus (at a minimal cost) from the University of Pittsburgh. Please note that the University of Pittsburgh requires that students taking this course for credit take a qualifying exam on ALEKS and earn a score of 61 or better. This test is given to verify that students have mastered the algebra concepts necessary to be successful in calculus. In accordance with the University of Pittsburgh, students in this course will not use calculators on tests. PREREQUISITES: (1) B or higher year-end grade in TFA; (2) B- or higher on TFA final exam; and (3) Department recommendation

AP Calculus AB (3 credits)

This course is for students interested in majoring in a STEM field and assumes a thorough knowledge of all of the material discussed thus far in the mathematics curriculum as demonstrated by a strong performance in Trigonometry and Function Analysis. The course includes a systematic study of limits; derivatives of polynomial, rational and transcendental functions; related rates, maxima and minima, Rolle's Theorem and the Mean Value Theorem; integration and the Fundamental Theorem, and applications (areas, distances, volumes, average value); and simple methods of integration. The selection of topics prepares the student for the AB Calculus examination of the College Entrance Examination Board. All students are required to take the CEEB AB Calculus examination. PREREQUISITES: (1) A- or higher year-end grade in TFA; (2) B+ or higher on TFA final exam; and (3) Department recommendation OR (1) Completions of TIC and (2) Department recommendation

AP Calculus BC (3 credits)

This course is a more extensive course than AB Calculus. It includes all of the topics of the AB syllabus, plus the additional topics of more sophisticated techniques of integration, graphs in polar coordinates, vector functions and parametrically defined functions, and infinite sequences and series. This course, taken after Trigonometry and Introductory Calculus, prepares the student for the BC Calculus examination of the College Entrance Examination Board. All students are required to take the CEEB BC Calculus examination.

PREREQUISITES: (1) B+ or higher year-end grade in TIC; (2) B+ or higher on TIC final exam; and (3) Department recommendation OR (1) Completion of AP Calculus AB and (2). Department recommendation

ADVANCED ELECTIVES

The following electives will be offered depending upon enrollment numbers. If an elective is canceled, students will be placed in the alternate choice if their schedule permits.

Discrete Structures (Term I) (1 credit)

This course is for students interested in majoring in computer science or mathematics. The Discrete Structures (Computer Science and Math) course takes an in-depth look at the fundamentals of logic, logical inferences, counting principles, and computability. These topics are fundamental to the study of advanced computer science and will prepare students for future coursework in areas such as math, computer science and engineering. Students will be required to complete at least three major programming projects. Homework, quizzes, and exams round out the assessments. This course can be used as either a Computer Science or Mathematics credit. PREREQUISITES: Problem Solving I and one other upper-level Computer Science elective, and Math II or Math III

Topics in Multivariable Calculus (Term I) (1 credit)

For students interested in a STEM field, this one-term Multivariable Calculus course offers an introduction to calculus in the third dimension. A function in three dimensions extends the notions of the derivative and the integral by challenging students to think about rates of change and accumulation given multiple - as opposed to singular - dependent relationships. Topics of coverage include applications of partial derivatives and multiple integrals, and the spherical and cylindrical coordinate system. Students completing this one-term course may still take the yearlong Multivariable Calculus course in another year. Students who have completed the yearlong Multivariable Calculus course are not eligible to take this term course and are encouraged to explore other Term I electives such as Discrete Structures or Problem Solving Seminar. PREREQUISITES: (1) Completion of AP Calculus AB and (2) Department recommendation

Topics in Linear Algebra (Term II) (1 credit)

This course is for students interested in majoring in a STEM field. Systems of linear equations are first introduced to motivate the concepts of matrices. We then study properties of matrices, inverses, determinants, vectors in 2-space and 3-space, and Euclidean n-space. A vector space is then defined and the concepts of subspace, linear dependence and independence, basis and dimension, row and column space, and change of basis. Linear Algebra concludes with the study of linear transformations, eigenvalues, and eigenvectors, if time permits. PREREQUISITE: (1) Completion of AP Calculus AB or BC and (2) Department recommendation

Topics in Differential Equations (Term III) (1 credit)

This course is for students interested in majoring in a STEM field. The course in Differential Equations includes the study of first-order differential equations, second-order linear homogeneous and nonhomogeneous differential equations with constant coefficients, variation of parameters, vibrations,and higher-order linear equations. The course concludes with the study of approximation methods (power series), slope fields, and Picard's existence and uniqueness theorem. Applications are studied as needed. PREREQUISITE: (1) Completion of AP Calculus AB or BC and (2) Department recommendation

OFFERED EVEN YEARS (2022-2023)

Multivariable Calculus (3 credits)

This yearlong Multivariable Calculus course is for students interested in a more in-depth and challenging post-calculus experience. Multivariable Calculus, also known as Calculus III or Vector Calculus, is the next level of calculus for students who have completed AP Calculus BC. A function in three dimensions extends the notions of the derivative and the integral by challenging students to think about rates of change and accumulation given multiple - as opposed to singular - dependent relationships. The calculus of vectors and vector valued functions is inextricably woven into the study of f(x,y). Additional topics include various applications of the derivative and integral, vector fields, Green's Theorem and Stoke's Theorem. Students desiring of more than a trimester introduction to calculus in the third dimension will be most interested in this course. Students may take this yearlong course whether or not they took the one-term introductory Multivariable Calculus course. PREREQUISITES: (1) Completion of Calculus AB or Calculus BC and (2) Department recommendation

OFFERED ODD YEARS (2023-2024)

Problem Solving Seminar (Term I) (1 credit)

This course uses the classic text *How to Solve It* by George Polya as well as a variety of problems taken from many sources. Means of assessment include homework problems, quizzes, tests and/or group projects. Homework problems are taken from prior national mathematics exams, SAT prep books and online resources. In lieu of a final exam, an extended group project is selected by pairs or trios of students. This course is offered in the first term. This course will help students prepare for the Mathematics Association of America's American Mathematics Competition (AMC) national exam which is offered in February. PREREQUISITES: Trigonometry and Function Analysis or Trigonometry and Introductory Calculus

Set Theory (Term II) (1 credit)

Does the catalog of books that do not reference themselves contain itself? This question nearly broke mathematics, and inspired mathematicians to tackle fundamental questions such as: why is 1+1=2? Does 1 really exist? What is a number? Set Theory attempts to axiomatize mathematics, building the rules from the ground up while making as few assumptions as possible. This course explores sets of objects, their properties, and how they intersect and combine, from basic counting numbers to transfinite cardinalities, and the rules and paradoxes that arise. PREREQUISITE: (1) Trigonometry and Function Analysis or Trigonometry and Introductory Calculus and (2) Department recommendation

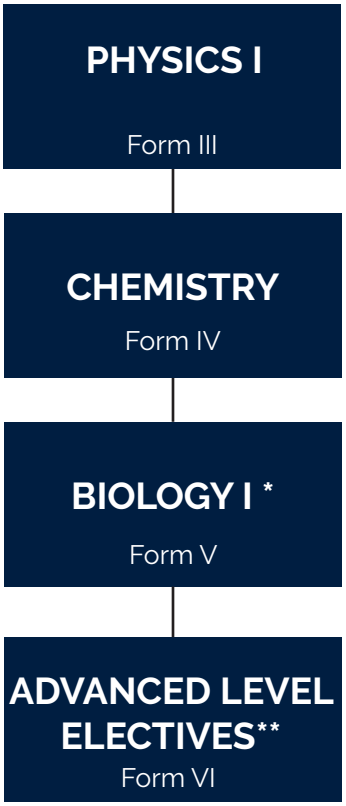
Fractal Geometry and Chaos Theory (Term III) (1 credit)

Do the flapping wings of a butterfly in Brazil affect our weather in Pittsburgh? Is the coastline of Maine one-dimensional, two-dimensional or somewhere in between? One of the newest fields in mathematics, Fractal Geometry and Chaos Theory answers these questions and poses many more. In this course, the concept of iteration is used to explore both fractal geometry and chaos. Iteration of functions on the complex plane generates fractals – objects with infinite detail and fractional dimension. Iteration of functions on the real plane illustrates chaos theory – the notion that small initial changes can eventually lead to large-scale changes. Applications in science, music and art are emphasized. PREREQUISITE: (1) Trigonometry and Function Analysis or Trigonometry and Introductory Calculus and (2) Department recommendation

SCIENCE

Dr. Joseph Martens, Chair

STANDARD SCIENCE SEQUENCE



* Students who join Shady Side Academy after their Form III year and have previously taken Biology should enroll in Physics IA during their Form V year.

** Advanced electives may be taken concurrently with the final course (typically Biology or Physics IA) of our three course requirements.

SCIENCE DEPARTMENT MISSION STATEMENT

The mission of the Senior School Science Department is to provide students with the skills and knowledge to become informed participants in our changing world. Students develop their critical and analytical thinking skills through student-centered laboratory investigation and analysis that leads to the formation of predictive, testable models.

REQUIREMENTS

To become a well-rounded scientific thinker, students are required to successfully complete Physics I, Chemistry, and Biology I. Students who have finished with this sequence are encouraged to explore the advanced-level science courses that they find most interesting.

CORE COURSES

Physics I (Form III) (3 credits)

This laboratory-based, hands-on course focuses on helping students achieve an understanding of the nature of science and experimental design through the study of energy, forces and motion. It is the foundation course of the SSA science sequence, and in addition to covering specific physics content, it teaches the processes involved in doing science. A heavy emphasis is placed on conducting experiments, evaluating data, developing models based on evidence that explain experimental results, and then applying these models as a predictive tool in novel situations. Students augment the intensive laboratory experience with further concept development in the classroom via student discussion. The course also develops strategies and techniques for solving difficult and open-ended problems. This course is designed for Form III students and builds upon their Algebra I skills. PREREQUISITE: Math I, which can be taken concurrently.

Physics IA (Form V) (3 credits)

This course is an upper-form introductory physics course intended for students who have transferred in to Shady Side having already taken biology and chemistry in their underform years. It is a laboratory-based, hands-on course that emphasizes discussion and data interpretation as tools to help students develop their own knowledge framework of physics concepts. It introduces the same physics content as the Physics I course (Newtonian kinematics and dynamics, energy and energy conservation) but does so with a greater mathematical emphasis as appropriate for upperform students. It differs from Physics I in that it de-emphasizes the development of fundamental experimental design skills, since students in this position will have learned those concepts in earlier science courses. In addition, the content is extended to cover some basic concepts in electricity and magnetism. PREREQUISITE: Math II or Math III, which can be taken concurrently.

Chemistry (Form IV or Form V) (3 credits)

The general chemistry course presents the fundamental concepts of modern chemical theory utilizing the laboratory investigation techniques taught in Physics I. The topics covered include: atomic theory and nuclear chemistry, chemical structure and bonding, molecular geometry, stoichiometry and quantitative analysis, gas laws, acid/base chemistry, kinetics, equilibrium, thermodynamics, oxidation/reduction reactions and basic organic chemistry. The topics discussed continue to develop the student's understanding of the particle model of matter, energy and the behavior of electrons that were first introduced in Physics I. PREREQUISITE: Physics I; CO-REQUISITE: Math II

Biology I (Form V or Form VI) (3 credits)

This is a survey course with emphasis on general biological and scientific principles. This course focuses on developing lab and critical thinking skills and builds upon the concepts and techniques developed in Physics I and Chemistry. The major topics are: what is life, classification, evolution, cell structure and function, energy, cell growth and development, and heredity. PREREQUISITE: Chemistry

ADVANCED LEVEL ELECTIVES

Science Research Seminar (Form V) (1.5 credits)

The research seminar course is intended for Form V students interested in learning about and participating in authentic science and engineering research. Students will participate in coursework during their Form V year to 1) develop the skills to read scientific papers, 2) build familiarity with laboratory equipment and analysis, and 3) identify a research project to work on over the summer. To be accepted into the course, students must be able to spend approximately 200 hours (about five weeks) doing research with a collaborator outside of the SSA Science Department (some collaborators may require more time). To receive credit for the course, students will compile their work and present it an evening poster session during the fall of their Form VI year. Failure to complete the summer portion of the research seminar could result in a loss of credit and/or an F in the course. Interested students should submit an application during

Term III of their Form IV year. Students will be admitted into the program based upon their academic record, the strength of their application and how the course fits into their schedule. PREREQUISITE: Two years of our core electives

Physics II: Algebra (Form V or Form VI) (3 credits)
This fast-moving and rigorous course is intended for students who are interested in continuing their physics exploration by developing more robust physics models to explain how the world around them behaves. Although the topics covered are generally similar to the Physics II Calculus course (translational and rotational motion and dynamics, momentum, energy, static and current electricity, and waves), the situations investigated are less complex and can be treated with an algebraic approach. Using the fundamental conservation laws to analyze complicated problems receives consistent emphasis, and there are opportunities for students to conduct self-directed projects. The course is appropriate for students who have finished studying trigonometry and are currently enrolled in AP Calculus AB, Statistics, or CHS Calculus. Students enrolled in AP Calculus BC or higher are strongly encouraged to enroll in Physics II Calculus. This course can serve as partial preperation for the AP Physics I exam for the ambitious student MATH PREREQUISITE: Trigonometry and Function Analysis or Trigonometry and Introductory Calculus. SCIENCE PREREQUISITE: Physics I or Physics 1A

Physics II: Calculus (Form V or Form VI) (3 credits)
This fast-moving and rigorous course is intended for students who are interested in using calculus to explain how the world around them behaves. Although the topics covered are generally similar to the Physics II Algebra course (translational motion, momentum, energy, static and current electricity), the situations investigated are significantly more complex. Additional topics covered in this course include rotational dynamics and transient responses in circuits. Using the fundamental conservation laws to analyze complicated problems receives consistent emphasis, and there are opportunities for students to conduct self-directed projects. This course can serve as partial preparation for both the Mechanics and Electricity and Magnetism Physics C Advanced Placement exams for the ambitious student. MATH PREREQUISITE: Enrollment in or completion of AP Calculus BC or completion of AP Calculus AB. SCIENCE PREREQUISITE: Physics I or Physics 1A

Principles of Engineering (Form V or Form VI) (3 credits)
Principles of engineering focuses on helping students gain meaningful, real-world experience in a variety of engineering disciplines. Students learn to use CAD software for 3D design and geographic information system (GIS) principles to analyze geospatial data and trends. Students also cover engineering economics and decision analysis. This combination of topics naturally supports interdisciplinary work across topic areas. Students further their understanding with projects tailored to provide them with practical uses of skills learned in the class. Students are given agency to design their own projects that can be tailored to their individual interests. PREREQUISITES: Biology (or Physics 1A to complete core Science requirement; may be taken concurrently) and Trigonometry and Functional Analysis (may be taken concurrently).

Astronomy (Form V or Form VI) (3 credits)
This interdisciplinary, inquiry-oriented course utilizes the models developed in the introductory science courses to study the universe. Students are introduced to the earth, sun and moon system and learn about the nature and structure of cosmic objects such as stars, black holes and galaxies. The course then expands into the area of cosmology (a branch of astrophysics), which allows students to learn about the nature of the universe and its origins. If time allows, special relativity and quantum mechanics are explored. Toward the end of the year, students bring to bear their biological models when the course moves into the study of astrobiology. Astrobiology is the study of the origin, evolution and distribution of life in the universe. Mathematical skills from algebra, geometry and trigonometry are applied. Throughout the year and with greater emphasis during Term III, students do research utilizing real data collected by current astronomers or themselves. One of these research projects is presented as the final exam. Students can either investigate a different research question each term or a single question across the entire year. Students enrolling in this course are expected to have a strong science background (B average

in their previous science classes) OR be given permission to enroll by the Science Department. MATH PREREQUISITE: Trigonometry and Function Analysis or Trigonometry and Introductory Calculus. SCIENCE PREREQUISITE: Physics I or Physics 1A

Advanced Biology (Form V or Form VI) (3 credits)
The course is heavily lab-based and oriented towards a more in-depth approach to selected topics in biology: developmental and evolutionary biology, genetics, biotechnology, and anatomy and physiology. Students enrolling in this course are expected to have a strong background (B or better) in both Biology I and Chemistry OR have been given permission to enroll by the Science Department. While this is not an Advanced Placement course, the level of work is at the 200 college level. Students who have an interest in taking the Advanced Placement Biology Exam should plan to invest time outside of class throughout the year in order to familiarize themselves with the exam format and review topics not covered in this course. PREREQUISITE: Biology I

Environmental Science (3 credits)
This interdisciplinary course stresses scientific principles and analysis in areas including biology, chemistry, and geology. Some of the themes studied include: the process of science; energy conversions; the earth as a single interconnected system; human impacts on natural systems; and the cultural and social implications of environmental problems. As this is an environmental science rather than an environmental studies course, there is a strong laboratory and field investigation component, which complements the classroom portion of the course. Students enrolling in this course are expected to have a strong background (B- or better) in both Biology I and Chemistry OR have been given permission to enroll by the Science Department. PREREQUISITE: Biology

Psychology (Form V and VI) (3 credits)
This course introduces students to the scientific study of behavior and mental processes. The goals of the course are to provide students with (1) an introduction to the diverse field of psychology; (2) an appreciation for how behavior and mental processes can be studied scientifically; (3) an appreciation of the fact that one of the keys to understanding human behavior is to take into account human individuality and diversity; and (4) an understanding of the brain and the biology of stress and thriving. Students will experience well-being interventions experimentally supported by positive psychology research to support student growth and resilience. This course does not meet during the lab period and does not fulfill the graduation requirement in science. PREREQUISITE: Biology I (may be taken concurrently).

Advanced Chemistry: Organic Chemistry (3 credits)
This course presents the nomenclature, structure, reactivity and synthesis of elementary carbon-based molecules. The chemistry of hydrocarbons, haloalkanes, alcohols, esters, acids and arenes is developed in a laboratory-centered, interactive atmosphere. A comprehensive microscale laboratory program and basic spectroscopic analysis are heavily relied upon to study the structure of representative compounds. Students enrolling in this course are expected to have a strong background (B+ or better) in Chemistry OR have been given permission to enroll by the Science Department. PREREQUISITE: Chemistry

ADVANCED INORGANIC CHEMISTRY ELECTIVES

Only one of the upper-level course sequences below will be offered per year. Students may enroll in one, two, or all three term classes. Students enrolling in any one of these term courses are expected to have a strong background in Chemistry (B or better) OR have been given permission to enroll by the Science Department.

OFFERED EVEN YEARS (2022-2023)

Advanced Chemistry: Chemical Bonding (Term I) (1 credit)

This course investigates the fundamental nature of the chemical bond and electronic structure in greater depth than the content in Chemistry. Topics include intra-molecular and inter-molecular forces; covalent, ionic, metallic, and Van der Waals bonding; the effects of bonding on the structures of molecules and aggegates; crystal chemistry and structure. Laboratory activities demonstrate the material properties that result from different types of bonding. Students also get to use and learn the basic theory of scanning electron microscopy (SEM) and X-ray based spectrometry, as well as an introduction to computational molecular modeling programs. PREREQUISITE: Chemistry

Advanced Chemistry: Inorganic Chemistry (Term II) (1 credit)

Metals comprise the majority of elements in the periodic table. Understanding the fundamental reactivity and properties of transition metals and metalloids is essential for fields such as biochemistry, materials science/engineering and geochemistry. Topics in the course include metal behavior in chemical reactions, coordination compounds, chelations and molecular symmetry, as well as crystal field theory, and solid-state chemistry. Students get hands-on experience with traditional chemical synthesis and analyses techniques, scanning electron microscope (SEM) and UV-Vis and infrared (IR) spectroscopy, as well as an introduction to computational molecular modeling. PREREQUISITE: Chemistry

Advanced Chemistry: Quanitative Analysis (Term III) (1 credit)

In this course, students learn the theory/practice of quantitative analysis - the identification and quantification of the components in a chemical system. Topics include the theory of traditional chemical separations and analyses (e.g., gravimetric and volumetric), instrumental analyses (including spectrochemical methods), and statistical analyses of experimental data (e.g., error analysis and minimization of error, accuracy vs. precision, standard deviation and confidence intervals). A significant portion (70%) of the class is laboratory work culminating in a final independent project that is designed entirely by the student. The theme of the final project varies from year to year, but emphasizes learning the theory/application of an in-house gas chromatograph mass spectator (GC-MS). PREREQUISITE: Chemistry

OFFERED ODD YEARS (2023-2024)

Advanced Chemistry: Chemical Equilibrium I (Term I) (1 credit)

Understanding whether a chemical reaction will occur and to what extent is fundamental to all fields of chemistry and biology. This course investigates chemical equilibrium in greater depth than the content in Chemistry. Topics include the law of mass action, the equilibrium expression, the equilibrium constant, Le Chatelier's Principle, common ion effect and solubility . The term culminates by linking equilibrium with the three laws of thermodynamics to determine the spontaneity of chemical reactions. In the laboratory, students investigate equilibrium through titrimetric analysis, gravimetric analysis and UV-vis spectroscopy. Students are also introduced to chemical speciation modeling programs as a tool to predict complicated aqueous systems. PREREQUISITE: Chemistry

Advanced Chemistry: Acid Base/Redox Chemistry (Term II) (1 credit)

Acid base and redox reactions are two of the most important reaction types in chemistry and biology. This course investigates acid-base and redox reactions in much greater depth than the content covered in Chemistry and Biology courses. Topics include acid-base theories (Arrhenius, Bronsted/Lowry and Lewis), equilibrium calculations, buffers, titrations, oxidation-reduction reactions, Galvanic cells and electrochemistry (i.e., batteries, corrosion). Students gain hands-on experience in various titrimetric analyses standardization of acids/bases, electrochemical techniques, ion-selective electrodes, and the use of the scanning electron microscope (SEM). PREREQUISITE: Chemistry

Advanced Chemistry: Quantitative Analysis (Term III) (1 credit)
In this course, students learn the theory/practice of quantitative analysis - the identification and quantification of the components in a chemical system. Topics include the theory of traditional chemical separations and analyses (e.g., gravimetric and volumetric), instrumental analyses (including spectrochemical methods), and statistical analyses of experimental data (e.g., error analysis and minimization of error, accuracy vs. precision, standard deviation and confidence intervals). A significant portion (70%) of the class is laboratory work culminating in a final independent project designed entirely by the student. The theme of the final project varies from year to year, but emphasizes learning the theory/ application of an in-house gas chromatograph mass spectator (GC-MS). PREREQUISITE: Chemistry

The following courses will be in the Glimcher Tech & Design Hub. They will not fulfill graduation requirements, but will earn non-departmental credits. Glimcher courses will be Pass/Fail.

Entrepreneurship for Tech & Design (1 credit)
Students are introduced to the theory of entrepreneurship and its practical implementation. The course focuses on different stages related to the entrepreneurial process as well as the invention cycle. Centered around a mixture of theoretical exploration as well as case studies of real-world examples and guest lectures, students develop an understanding of successes, opportunities and risks of entrepreneurship. Students are encouraged to join DECA and FBLA to compete nationally as they prepare themselves to become emerging leaders and entrepreneurs in marketing, finance, hospitality and management.

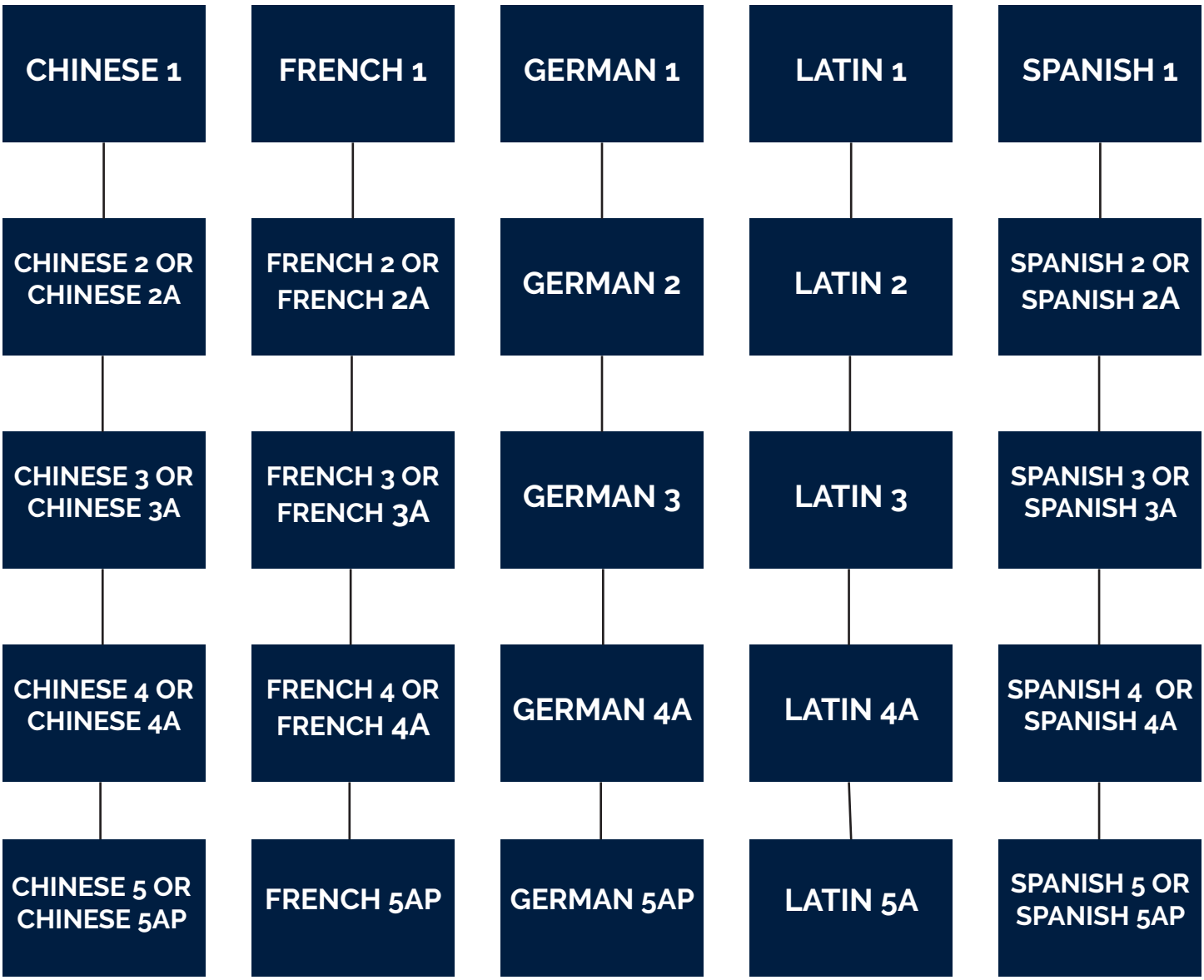
Community Connections Through Tech & Design (1 credit)
Students work with community partners to identify and solve problems according to the design thinking framework, utilizing the resources and tools of the Glimcher Tech & Design Hub.

Projects for Tech & Design (1 credit)
Students leverage the Glimcher Tech & Design Hub to its fullest capacity by becoming familiar with 3D modeling, printing, CNC mills and routers, vector design, laser cutting and various wood and metalworking tools. Entirely project-based, the term consists of minor projects centered around each piece of equipment, culminating in a final project specific to the student's interest. (This class can earn art credit).

WORLD LANGUAGES

Ms. Alison Daniel, Chair

STANDARD WORLD LANGUAGES SEQUENCES



WORLD LANGUAGES DEPARTMENT MISSION STATEMENT

The mission of the Senior School World Languages Department is to graduate culturally aware and linguistically competent global citizens who explore, engage and excel in intercultural communications.

OVERVIEW

Offerings include Chinese, French, German, Latin and Spanish. The modern languages are taught in the target language using methodologies that foster the student's development of communicative competence in the five proficiency areas: listening, speaking, reading, writing and cultural knowledge. The study of Latin emphasizes communication skills of reading, writing and listening, while developing knowledge of cultural and historical contexts.

Culture is integrated into language courses at all levels so as to immerse students in the target language and thus illustrate and enhance the student's learning experience. Teachers strive to incorporate authentic resources such as guest speakers, unique field trip opportunities, multimedia materials and literature written by native speakers.

Students are encouraged to share their enthusiasm for language learning by participating in extracurricular linguistic and culturally oriented activities within the Asian, French, German, Latin or Spanish clubs.

The Department's aim is to equip students with linguistic and cultural sensitivity skills required for effective participation in the 21st century's global economy. Classroom participation in the language within a cultural context is vital for development of the student's foundation in these skills; however, nothing can replace actual immersion in another culture to practice and perfect those skills and add immeasurably to personal growth. Thus, the World Languages Department urges participation in cross-cultural experiences and coordinates with the International Program to provide a myriad of ways to experience another culture firsthand, pending pandemic restrictions. Among the possibilities are three-week partner school exchanges in France, Spain, China and Germany. We also support academic year or semester abroad programs, as well as numerous summer abroad programs. (See the Special Programs section of this catalog for details of the International Program offerings).

WORLD LANGUAGES DEPARTMENT STATEMENT ON ADVANCED PLACEMENT

Advanced Placement Language and Culture tests are required for students enrolled in French, Spanish and German Level 5 AP and AP Chinese courses. All Advanced Placement exams are administered in May. More information can be found at http://apcentral.collegeboard.com/apc/public/courses/index.html.

REQUIREMENTS

Students graduating from Shady Side Academy in 2023 and beyond must successfully complete nine credits at the Senior School in a language other than their own. While all students are encouraged to continue the study of one language through the highest level possible, students are required to complete course work through Level 3 of one language. Students graduating prior to 2023 must successfully complete through Level 3 of one language and are encouraged to study that language to the highest level possible. Students may choose to study another language after having completed the diploma requirement. Two languages may be taken concurrently.

HERITAGE LANGUAGE POLICY

Since the goal of studying a world language at Shady Side Academy is to sensitize students to a language system and culture(s) other than the students' own, students are not permitted to fulfill the World Language graduation requirement by studying a language in which they are already fluent. A student's degree of written and oral fluency in a heritage language will be determined by a placement test and an interview with a teacher of the student's heritage language. If it is determined that the student has achieved written and oral fluency beyond that which is taught in Level 3 at the Academy, the student must pursue another language at the Academy to fulfill the graduation requirement. The student may take courses in the heritage language, but the course will not count for credit toward fulfilling the graduation requirement.

LANGUAGE WAIVER/EXEMPTION POLICY

The Academy does not take lightly requests for language waivers/exemption from the World Language requirement. A student with a diagnosed language-based learning disability (LBLD), however, may receive accommodations specific to a foreign language that may include an alternative language diploma requirement (ALDR) or, at the extreme, a waiver of the language requirement entirely. The student requesting accommodations owing to a documented LBLD must submit to the Dean of Studies both a clear rationale for the request and a current report (not more than three years old) of psychoeducational testing from a licensed clinician/diagnostician that must document profound impairment. Following a thorough documentation review, including solicitation of past and current teacher input and testimony, assessment/review of the student's past and current achievement in their language study and other disciplines, and assessment/review of the student's success in other areas of school life, the Dean of Studies, in consultation with the Head of the Senior School, the Department Chair, and the Learning Support Specialist (and Counselor if needed), will determine whether or not to grant an ALDR or, in the extreme circumstances, a waiver. Whenever possible, an ALDR will be suggested as a substitution for world language study rather than a language waiver being granted. If an ALDR or waiver is granted, the Dean of Studies, in consultation with the aforementioned group, will design ALDRs with equity, the integrity of the diploma, and documented disability in mind. The student's transcript will note that an ALDR or waiver has been granted.

DETERMINATION OF COURSE LEVEL

Determination of the level of language study for students new to Shady Side who wish to continue the language they began in their previous school is based upon review of their previous school's course of study, student performance at that school, and a placement exam given in April. Students placing in Level 2 or Level 3 of a language taught at the Senior School receive language credits toward the SSA diploma for the levels they have already successfully completed.

All levels of French, Spanish and Chinese are divided into advanced (A) and standard groupings based on the extent of previous language experience at different schools, performance in previous levels at Shady Side Academy, or results of the placement test. This sectioning permits students to advance in the manner which best corresponds to their abilities and base of knowledge. Students registering for the second or third level of Chinese, French and Spanish only indicate the numerical level of the course on the course registration sheet. Their current teacher stipulates to the Department Chair which students go on to advanced sectioning. Students registering for levels 4A or 5A/AP must indicate their current teacher's approval by acquiring the teacher's signature on the sheet.

Note that Level 1 language courses only will be offered with sufficient enrollment.

CHINESE

Chinese 1 (3 credits)

This course introduces the starting level of Mandarin language and Chinese culture with a focus on oral proficiency, designed for students with no or little background in Mandarin. The goal is to lay a solid foundation for further Mandarin language and Chinese culture study. Modern Chinese Book 1A is used in this course. Students are exposed to a sequence of topics of instructional language, self-introductions, descriptions of their immediate surroundings, such as family, school life, leisure activities, etc. With an emphasis on oral proficiency, students learn to recognize some commonly used radicals, read approximately 200 Chinese characters and write about 100 of them.

Chinese 2 (3 credits)

This course continues to build on the foundations established by students in Chinese 1 in the areas of reading, writing, listening and speaking, with emphasis on listening and speaking. Students learn basic vocabulary and grammar structures in the context of thematic lessons on topics relevant to their daily lives. Emphasis is placed on learning to perform practical tasks in the target language. Modern Chinese Book 1A is the textbook for this course. Additional supplementary materials in the forms of audio recordings, videos and readings are also utilized to increase students' exposure to the target language. PREREQUISITE: Chinese 1

Chinese 2A (3 credits)

This course develops language proficiency from sentence level to paragraph discourse level. Students learn rich vocabulary and various intermediate-level grammar structures in thematic units related to their daily lives. Various authentic materials such as audio, video, film and text are utilized to broaden students' exposure to the target language and to develop intercultural competence. Students are expected to stay in the target language in class. PREREQUISITE: Chinese 1

Chinese 3 (3 credits)

Stress is placed on comprehensive reading while developing communicative competence. Students are required to speak more Chinese in class. The textbook Modern Chinese Book 1B is used in this course. Students will be exposed to additional materials which will help them to achieve intermediate oral and written fluency. PREREQUISITE: Chinese 2

Chinese 3A (3 credits)

This course continues to develop students' fluency in spoken and written Chinese. Students move from speaking and writing at the sentence level to the paragraph level. In thematic units, students develop interpersonal, interpretive and presentational communication skills via various activities and tasks. This course is conducted primarily in Chinese and students are encouraged to use the target language all the time in class. Modern Chinese Book 1B will be used as the primary text in this course. Students are exposed to authentic language materials, such as conversational video clips, podcasts, authentic texts, movies and songs, which help them gain a deeper understanding of Chinese cultures. PREREQUISITE: Chinese 2A

Chinese 4 (3 credits)

In addition to advanced grammar structures and vocabulary, idiomatic expressions commonly encountered in the language are explored, supplemented by short stories which explain their origins and uses. Students continue to develop their communicative abilities in the language while more emphasis begins to be placed on reading and writing. Modern Chinese IB is the textbook for this course. Additional supplementary material such as audio recordings, videos, and readings are also utilized to further engage students in the target culture and to cultivate a deeper understanding of it. PREREQUISITE: Chinese 3 or 3A

Chinese 4A (3 credits)
The focus of lesson topics in Chinese 4A widens from the individual to the community and to the culture. Students continue to delve into Chinese culture, history, practices and beliefs. More emphasis begins to be placed on the development of reading and writing skills as students continue to develop their communicative abilities. Modern Chinese 1B is the textbook for this course. In addition, various authentic multimedia and literary materials including songs, poems, stories, newspaper articles, videos, films, TV shows, podcasts and websites are also used to help students to develop a deeper understanding of the products, practices and perspectives of Chinese culture. Students planning to take this course are required to obtain approval from their current Chinese teacher. PREREQUISITE: Chinese 3A

Chinese 5 (3 credits)
This course is conducted in Chinese, with Magical Tour of China Vol. 1 as its textbook. The textbook is supplemented with authentic materials in the forms of articles, audio clips,and video clips in the target language. In this course, students are exposed to various topics of interest relevant to the Chinese-speaking community from a modern perspective, expanding their understanding of Chinese culture, the changes it has undergone, and relating these back to their own experiences. They continue to expand their vocabulary and to acquire more complex grammatical structures that allow them to discuss these topics in detail, with attention to all four language skills. PREREQUISITE: Chinese 4 or Chinese 4A

Chinese 5AP (3 credits)
The AP Chinese Language and Culture is a rigorous course conducted in Chinese that helps students to further develop their proficiency across interpersonal, interpretive, and presentational communication modes in real-life contexts. A college-level textbook Modern Chinese will be used in addition to various authentic multimedia and literary materials within a theme-based framework. Students will vastly expand vocabulary and advanced-level sentence structures in different linguistic registers, read and write intensively on a wide range of topic areas that reflects contemporary and historical aspects of Chinese language, society, and culture, and conduct elaborate discussions and provide in-depth reflections on the materials in the target language on a daily basis. Students planning to take this course are required to obtain approval from their current Chinese teacher. All students in this course are required to take the AP exam to receive credit for the course. PREREQUISITE: Chinese 4A

FRENCH

French 1 (3 credits)
This course emphasizes the student's development of basic communicative competence in the five proficiency areas: speaking, listening, reading, writing and cultural knowledge. Authentic audio and visual materials are used to help develop these skills and to prepare for real-life native situations using the target language in topics such as greetings, family, food, hobbies, sports and shopping.

French 2 (3 credits)
This class builds upon the foundations of French 1. In French 2, students achieve increased oral and written fluency through contextualized practice in the target language. In addition, students sharpen their reading and listening skills through structured activities related to themes presented in class. French 2 offers a scaffolded experience in order to achieve the goals of the course. PREREQUISITE: French 1

French 2A (3 credits)
Building upon the foundations of French 1, French 2A allows students to transition from short, memorized speech patterns to creating with the language. Students acquire basic grammar structures and vocabulary that permit them to express themselves on familiar topics. Culture is woven throughout the course. PREREQUISITE: French 1 and SSA French teacher's recommendation

French 3 (3 credits)

This course offers students the opportunity to continue to develop conversational skills in French. In addition, enhanced writing skills are acquired through targeted vocabulary and the use of complex grammatical structures. Presentations and structured student-to-student conversations allow students to speak French in context and with support. PREREQUISITE: French 2 or 2A

French 3A (3 credits)

French 3A provides students with the opportunity to continue to acquire increasingly rich vocabulary and complex grammatical structures. Special emphasis is placed on the speaking skill, and 75-80% of the class period consists of student-to-student conversations. These conversations become less structured throughout the year, until students are able to confidently speak independently on familiar topics. Students examine the products, practices and perspectives of Francophone cultures, with an emphasis on France. PREREQUISITE: French 2A and SSA French teacher's recommendation

French 4 (3 credits)

This course is for students who wish to maintain and expand their French language skills but who choose not to be in a pre-AP course. Conducted entirely in French by both teacher and students, the class offers a rich panorama of Francophone cultures, literature, music and art. Students practice listening, reading, writing and speaking skills through authentic texts and with real-life tasks. Extensive use is made of Internet resources, allowing students to experience language and culture first-hand. PREREQUISITE: French 3 or 3A

French 4A (3 credits)

This course, conducted entirely in French by students and teacher, provides students with a pre-AP experience. Students revisit and polish major grammar topics, and low-frequency structures are introduced. Vocabulary is rich and complex. The exploration of two gems of world literature, *Oscar et la dame rose* and *Le Petit Prince* provide students with the opportunity to examine and discuss themes of faith, mankind's relationship with nature, and raison d'être, among others. By the end of the course, students are confident in expressing and defending their opinions, comparing cultures, and navigating francophone cultures. Students planning to take this course must obtain the approval of their current French teacher and have his/her signature on the course registration. PREREQUISITE: French 3A and SSA French teacher's recommendation

French 5AP (3 credits)

The objective of this course, conducted in French, is to prepare students to take the AP French Language Examination. All students are required to take the AP exam to receive credit for the course. Preparation for the listening and speaking components of the AP involves exposure to a wide variety of listening sources including the Internet, film, podcasts and French song to facilitate comprehension and extemporaneous speech in response to given situations. Oral presentations on news articles, art and other topics are used to enhance student fluency. In preparation for the written component of the exam, writing skills are refined through compositions and a grammar review of problem areas. Reading comprehension is developed by practice and vocabulary building involving a variety of works including a novel, short stories, drama, poetry and philosophy. It is recommended that students enrolling in this course have a grade of B or better in their prior French course. Students planning to take this course are required to obtain the approval of their current French teacher and have his/her signature on the course registration form. PREREQUISITE: French 4A and SSA French teacher's recommendation

GERMAN

German 1 (3 credits)

This class teaches students to communicate in German by addressing the five proficiency areas: speaking, listening, reading, writing and cultural knowledge. In this course students discover how to best learn a world language. Small class size ensures that students receive much individual attention and plenty of speaking time in the target language. Authentic materials in the form of websites, videos, music and poetry help develop skills and prepare for real-life German language situations.

German 2 (3 credits)

This course introduces additional grammatical structures and vocabulary that are essential to achieve intermediate-level oral and written skills. Websites, videos, music, poetry and scientific texts expose students to authentic language and current topics in German society. Short stories targeted to German-learners are introduced. This class is conducted primarily in German, and students become comfortable speaking German. PREREQUISITE: German 1

German 3 (3 credits)

In this course students learn advanced grammar forms as well as how to express themselves in more complex speaking situations as they discuss topics and defend their opinions. Websites, videos, music, television, and articles provide exposure to authentic language situations and current events. The course begins to move beyond simply a language course as students learn about German history and current topics. Classes are conducted in German. PREREQUISITE: German 2

German 4A (3 credits)

German 4A and 5AP are taught in a combined class, the curriculum of which alternates from year to year so that students can take both courses if desired. Emphasis is placed upon application of advanced grammar and vocabulary constructions in order to transition the learner from intermediate to advanced-level discourse. The themes of the course increase cultural and political awareness, and current events are regularly discussed. Longer works of literature allow students to expand vocabulary and improve their skill level. Students are strongly encouraged to participate in the German exchange program in order to gain the fluency and cultural knowledge that only an immersion experience can provide. It is recommended that students enrolling in this course have a grade of B or better in their prior German course. Students planning to take this course are required to consult with their current German teacher. PREREQUISITE: German 3

German 5AP (3 credits)

German 5AP is available to students who have successfully completed German 4A or to students who have the teacher's approval. If a student chooses this option, German 5AP will appear on the transcript. All students are required to take the AP German Language Exam to receive credit for the course. It is recommended that students enrolling in this course have a grade of B or better in their prior German course. Students planning to take this course are required to consult with their current German teacher. PREREQUISITE: German 4A or teacher's recommendation

LATIN

Latin 1 (3 credits)

This course, which emphasizes the primary Latin communication skill of reading, introduces comprehensive elementary grammar and syntax. Students also build a vocabulary for composition and readings in Roman culture, especially pertaining to the family, Roman history and mythology.

Latin 2 (3 credits)
The first few weeks of this course involve review of the grammar and syntax of Latin 1, while introducing new vocabulary and more intermediate Latin grammar. Students build a broad vocabulary for composition and for readings in culture and history, especially as pertains to life in the Roman city and military. PREREQUISITE: Latin 1

Latin 3 (3 credits)
This class begins with review of intermediate grammar and completes advanced grammar and syntax in a mythological context. The "Urbs Antiqua," life in the ancient city, is examined via selections from a variety of Roman authors. Works might include, but are not limited to, selections from Julius Caesar's *De Bello Gallico*, the works of Pliny, Cicero, Tacitus, and an introduction to Latin poetry via readings from Ovid's *Metamorphoses*. PREREQUISITE: Latin 2

Latin 4A and Latin 5A meet as a combined advanced literature class, with the following curricula offered in alternating years. The 2022-2023 class will be reading Vergil's *Aeneid.*

Latin 4A (taught in rotation with Latin 5A) (3 credits)
This advanced class, which meets in conjunction with Latin 5A, surveys a variety of Latin authors, including but not limited to comic playwright Plautus and the poetry of Catullus, Horace and Ovid. Students examine works in their historical context, while reviewing poetic and rhetorical structures. It is recommended that students enrolling in this course have a grade of B or better in their prior Latin course. Students planning to take this course are required to consult with their current Latin teacher. PREREQUISITE: Latin 3

Latin 5A (taught in rotation with Latin 4A) (3 credits)
This advanced class, which meets in conjunction with Latin 4A, studies Golden Age Latin literature under Augustus, the first Roman emperor, focusing on the life and work of Vergil. Students read Vergil's *Aeneid*, with particular emphasis on literary form and technique, while also examining the philosophical and political dimensions of his age. It is recommended that students enrolling in this course have a grade of B or better in their prior Latin course. Students planning to take this course are required to consult with their current Latin teacher. PREREQUISITE: Latin 4A

SPANISH

Spanish 1 (3 credits)
The emphasis of the course is on the development of basic communicative competence in the five proficiency areas: speaking, listening, reading, writing and cultural knowledge. Along with the text, authentic audio and visual materials are utilized to help students to develop skills and to prepare for real-life situations. Daily activities presented in the target language include classroom exercises, partner work and individual response work. Some of the topics covered during the year include greetings, numbers, days and months, time, food, clothing, family, classes and classroom objects.

Spanish 2 (3 credits)
While providing a review of material covered in Spanish 1, this course uses the target language to introduce additional verb tenses, grammatical structures and vocabulary that are essential to achieve intermediate oral and written fluency. Using various multimedia resources, students learn from increasingly complex authentic written and audio-visual materials and practice the target language within cultural contexts of both Spain and Latin America. The major verb tenses covered include the preterit tense, as well as an introduction to the imperfect tense. The vocabulary offered covers themes such as hobbies and pastimes, holidays, shopping and daily routines. Each of these topics is supplemented with a variety of new grammar structures that allow for superior communication through a variety of methods. PREREQUISITE: Spanish 1

Spanish 2A (3 credits)

This course builds on grammatical, vocabulary and conversational skills learned in Spanish 1. The target language is used to introduce additional verb tenses, grammatical structures and vocabulary to help students develop oral and written fluency. Students are active participants during all classroom activities, which are centered on written and oral exercises. They are introduced to grammatical concepts that go beyond personal information and are useful for practical communication in the target language. Students gain confidence and fluency as speakers, readers and writers in Spanish while learning from a wide range of authentic written and audio-visual materials relating to the cultural contexts of Spain and Latin America. PREREQUISITE: Spanish 1 or approval of the Department Chair

Spanish 3 (3 credits)

This course continues to build upon the materials introduced during Spanish 1 and 2. Students are encouraged to utilize the target language on a daily basis. A variety of activities are utilized to help the students to become more proficient with the use of the present, preterit and imperfect tenses. Additionally the future and conditional tenses are introduced along with the subjunctive mood. In an effort to increase the levels of communicative competency in speaking, listening, reading, writing and with cultural knowledge throughout the year, students create projects, write short essays and present oral activities. They also listen to music, watch films and read short pieces of literature. PREREQUISITE: Spanish 2 or Spanish 2A

Spanish 3A (3 credits)

Conducted in Spanish, this course introduces students to high-frequency vocabulary and grammar in a meaningful context. With daily guided practice, the students gain confidence and fluency in reading, writing, listening and speaking. Communicative interactions through whole class and small group activities provide a solid foundation for communication. Movies, videos, readings and the Internet equip students with relevant, current and authentic information on the Spanish-speaking world. PREREQUISITE: Spanish 2A

Spanish 4 (3 credits)

This course, conducted in Spanish, enables students to complete the fundamentals of Spanish grammar while increasing vocabulary, fluency and knowledge of Hispanic cultures. Students explore cultural themes through videos, songs, and novels. They read two novels as a class, in addition to reading independently throughout the year. Focus is placed on improving written and spoken expression of Spanish. Students participate in a variety of projects that will increase their ability to communicate clearly. This course does not prepare students to take Spanish 5AP. PREREQUISITE: Spanish 3 or Spanish 3A

Spanish 4A (3 credits)

This class, conducted exclusively in Spanish, places communicative goals at the forefront; students are encouraged to look at grammar as a tool for communication and learn to express themselves with increasing fluency and accuracy. In this way, they see how mastery of specific grammar points is necessary to gain the confidence to communicate effectively and think critically about language and culture. The accompanying texts introduce students to literature of all regions of the Spanish-speaking world and focus on specific communicative skills in theme-based contexts. It is recommended that students enrolling in this course have a grade of B or better in their prior Spanish course. Students planning to take this course are required to obtain the approval of their current Spanish teacher and have his/her signature on the course registration form. PREREQUISITE: Spanish 3A

Spanish 5 (3 credits)

This course, conducted in Spanish, reviews and strengthens all of the skills acquired throughout the student's journey in previous Spanish classes. Students engage in activities to practice their skills in speaking, listening, reading and writing. Particular attention is paid to refining a student's ability to express ideas clearly, both orally and in writing, through active participation in class and engagement with many culturally relevant contexts in the Spanish-speaking world. Students read novels as a class and independently, as well as study film in Spanish. **This course does not prepare students to take the AP exam.** PREREQUISITE: Spanish 4 or Spanish 4A

Spanish 5AP (3 credits)

The objectives of this class are to increase students' fluency in the areas of reading, writing, listening and speaking Spanish, to increase cultural and political awareness of Spanish-speaking countries, and to prepare the students to take the AP Spanish Language Examination, which is required for students to receive credit for the course. Taught in the target language, this course involves exposure to a variety of Spanish voices and requires extemporaneous speech in response to given situations. Reading and writing skills are refined through a grammar review that adapts to the needs of every student, since the focus of the class is communication. The literature studied concentrates on short stories and poetry by Spanish and Latin American authors. Students must be prepared to come to a class conducted completely in Spanish and be willing to participate daily in class conversations and/or discussions. It is recommended that students enrolling in this course have a grade of B or better in their prior Spanish course. Students planning to take this course are required to obtain the approval of their current Spanish teacher and have his/her signature on the course registration form. PREREQUISITE: Spanish 4A

EXCHANGE PROGRAMS

Shady Side Academy offers partner school exchange programs in China, France, Germany and Spain (3 weeks abroad and 2-3 weeks hosting)

- **Wuhan Foreign Languages School, Wuhan, China**
- **Beijing No. 4, Beijing, China**
- **St. Joseph de Tivoli, Bordeaux, France**
- **Gymnasium Oldenfelde, Hamburg, Germany**
- **Liceo Europeo, Madrid, Spain**

These programs are based on family-to-family reciprocity. The SSA student, while abroad, resides with the family whose son or daughter the student received or will receive, depending on the order of the exchange. If conditions do not allow the Shady Side student to host, the student must locate another host family and be significantly involved with the replacement host family during the exchange student's stay here. Each program abroad involves some in-country travel and a two-to-three week period during which the foreign student attends the host's school, while also visiting local sites of cultural and historical importance. Acceptance into these programs is competitive. Students will be informed of the application process, program eligibility and approximate costs during the preceding spring. For further information, please contact the Director of Global and Off-Campus Programs.

SPECIAL PROGRAMS

INDEPENDENT STUDY (FORMS IV, V AND VI)

Independent Study creates an opportunity for a student to explore and investigate in depth some special area of academic interest that goes beyond our curriculum offerings. The student selects a faculty mentor who is willing to oversee the project on a regular basis. These projects must be taken for credit and carry with them the same responsibilities as regular curriculum offerings. Strong student motivation constitutes a major criterion for acceptance of a project. Students in Forms IV, V and VI must have a B- average (2.67 GPA) with effort ratings of 3 or better from the previous school year and any preceding terms in the current school year, as well as approval from the appropriate department chair and the project mentor. Students in Form III are only able to pursue Independent Study in Term III and must have an A- average (3.67 GPA) with an effort rating average of 4 or better for Terms I and II of the current school year, as well as approval from the department chair and the project mentor.

A letter grade must be given for Independent Study as a fourth or fifth course; the curricular plan for students carrying four courses must be approved by the Dean of Studies. If the project is a sixth course, a pass/fail grade proposal must be presented to the Independent Study Committee, but the candidate may petition the Dean of Studies for a letter grade after the proposal has been approved. Students whose projects last more than one term may be asked to appear before the committee for approval of the continuation of the project.

Complete and up-to-date information and forms are available on the Shady Side Academy website.

SENIOR PROJECTS (FORM VI)

Philosophy

The Senior Project is designed to offer students the opportunity to pursue a serious learning experience outside the traditional setting of the classroom during the final three weeks of their senior year. Approval of the project acknowledges that the student has demonstrated a good record at Shady Side Academy and the maturity to carry out the project in a timely and responsible manner.

Description

The Senior Project covers a wide range of educational activities. The project, designed by the student, provides an opportunity to pursue special activities, and it may be completed on or away from the campus. Projects may involve the development of a new skill, the pursuit of an academic research project, mastery of a musical piece, creation of a work of art, or service to the community.

The student will prepare a formal written proposal for presentation to the Senior Project Committee. The student is required to find 1) an On-Campus Project Sponsor who will help with the planning of the proposal and serve as a liaison between the student and the school and 2) a Project Advisor who is willing and able to supervise the project's activities.

Complete and up-to-date information and forms are available on the Shady Side Academy website.

GLOBAL AND OFF-CAMPUS PROGRAMS
Ms. Jessica Parker, Director

At the Senior School, we help students broaden their worldview by offering a number of global and off-campus programs. These include international programs, semester programs, and gap year programs, among others. Most of the programs do not interfere with your studies at SSA. For those programs which will take the student away from the school for an extended time (School Year Abroad and Semester Programs), please note the following:

Applicants must discuss their plans with Ms. Parker and the Dean of Studies by Jan. 15 of the school year prior. For these programs, students are not charged SSA tuition while participating. Tuition for the program is paid directly to the program. Financial aid received from SSA cannot be used to attend a semester program. Grades earned in these off-campus programs are not shown on the Shady Side Academy transcript but will be included in all college/scholarship applications. The grades are not calculated into the cumulative GPA; cum laude and award eligibility will be based on SSA grades.

Students attending off-campus semester programs in the winter semester may be required to attend Shady Side Academy through the midpoint of Term II.

This is not a complete list of programs available to students, but those which Shady Side will award credit if the appropriate steps are taken. A complete list can be found on the Academy's website or by speaking with Ms. Parker.

SCHOOL YEAR ABROAD

www.sya.org

School Year Abroad (SYA) is the only secondary-level program that allows high school students to live with a European or Asian family for an entire academic year while earning U.S. graduation credits and preparing for selective U.S. colleges and universities. Every year, each of the SYA schools in China, France, Italy and Spain enrolls approximately 60 students to complete their junior or senior year of high school. The central elements of SYA – the homestay and an academic program emphasizing foreign language acquisition – ensure that students return home with real mastery of a second language. At the same time, instructors from U.S. high schools guarantee that they do not lose ground in their core American courses: math and English. Extracurricular activities and organized travel round out the year. Current world events and global economic developments have only confirmed SYA's belief in the necessity of such an experience for more and more young American high school students. It is committed to maintaining high standards as the program work with future generations of adventuresome high school students eager to gain mastery of another language, a new perspective on themselves and a deeper understanding of the complex world beyond our borders.

The courses in School Year Abroad fulfill the credits and graduation requirements in the same way as a Shady Side class. The grades are not calculated into the cumulative GPA.

OFF-CAMPUS SEMESTER PROGRAMS

Chewonki Maine Coast Semester (http://www.chewonki.org/lmcs) takes place mostly on a 400-acre setting of Maine pine forests and pastures surrounded by a tidal estuary. A typical day might include morning classes, afternoon work detail on the farm, in the fields or in the wood lot, followed by an evening of group work/study or community involvement. Several weekends each semester include hiking, skiing or water activities and research utilizing natural resources of the area.

High Mountain Institute (http://www.hminet.org/) takes place in Colorado in the Rocky Mountains. Its rigorous academic program incorporates traditional classroom learning with the challenges of wilderness backcountry living. It is dedicated to nurturing personal and community growth through interaction with

the natural world and to the idea of "simple in means, rich in ends." Learning by experience, academic excellence and education that inspires intellectual growth are fundamental principles of the program.

Alzar School Semester (www.alzarschool.com) Located in Cascade, Idaho, the Alzar School offers academic semesters for motivated high school sophomores and juniors. These semesters immerse students in a rigorous, challenging educational setting that emphasizes leadership training. The mission of the Alzar School is to educate and facilitate the leadership development of high school students. The school aims to equip students with the background knowledge and skills to be effective leaders who will change the world. The school accomplishes its mission through the integration of six foundations: Academics, Leadership Training, Outdoor Adventure, Cultural Exchange, Service Learning and Environmental Stewardship. Through these foundations, the Alzar School challenges motivated, passionate future leaders. Many students are invigorated and refreshed after a semester away from their traditional school. The semester program features an extended trip to Chile.

Oxbow School Semester (www.oxbowschool.org) The Oxbow School is a one-semester coeducational boarding school located in Napa, California, with a visual arts and academic focus. It is a unique, interdisciplinary semester program for high school students. Its mission is to strengthen students' abilities in creative and critical inquiry by combining rigorous studio art practice with innovative academics. Its vision is for Oxbow students to develop a stronger sense of identity, self-worth, and the confidence to embrace the responsibility for their own learning and lives. High school juniors and seniors can choose to attend in either the fall or spring semester.