HIGH SCHOOL PROGRAM PLANNING GUIDE

2018–19

SAS
SINGAPORE AMERICAN SCHOOL

USING YOUR PROGRAM PLANNING GUIDE

Singapore American School is committed to assisting students in developing a program of study that meets their academic and college goals, offers instruction that will lead to a healthy lifestyle, and affords ample opportunity for participation in meaningful activities. This guide provides information about the courses typically offered along with information on how to select and complete the online registration process. We believe that every student is unique. With access to over 180 college-preparatory, support, and college-level courses, SAS students have the opportunity to pursue pathways that meet their unique needs and interests.

This guide also contains information about the minimum SAS graduation requirements, the credits recommended by colleges, and the wide range of academic opportunities available at our school. As students begin choosing courses for next year and beyond, keep in mind that **students will perform best when a program is selected that includes courses that are personally interesting and at an appropriate level of challenge.**

Current SAS students are asked to choose courses each spring for both semesters of the following school year. Students new to SAS will meet with a counselor to select courses prior to enrollment. All students are responsible for taking the time to fully understand what a course will cover, the prerequisites, and whether or not there are any expectations beyond what might be considered "normal" for a course, such as additional labs, rehearsals, research, or readings. Not all courses are available to all grades.

All members of the SAS faculty are available to assist students and parents as courses are selected for the next academic year. Feel free to contact us.

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NOTEWORTHY IN 2018–19

The 2018–19 school year will bring several changes to Singapore American School. We are excited to offer new courses, new programs, and additional learning options to students. While details regarding many of these changes are included in other sections of this guide, the following are some of the highlights.

ADVANCED STUDIES

Advanced Topic (AT) courses and Advanced Placement (AP) courses together form our advanced studies offerings at SAS. These are college level courses that have been vetted and approved by the College Board or through a rigorous process at SAS to ensure rigor, quality, and relevance to our desired student learning outcomes (DSLOs). We now proudly offer over 40 of these courses. These exceptional learning opportunities are detailed in the new advanced studies section of this guide.

The 2016–17 program planning guide introduced five new Advanced Topic courses for students, and in 2017–18, five more AT courses were introduced. For 2018–19, we are pleased to introduce two additional AT courses: AT Multivariable Calculus and Linear Algebra, and AT Economics: Globalization. As a complement to our Advanced Topic offerings, we continue to offer students access to a selection of over 20 Advanced Placement courses and 25 AP examinations.

MAXIMUM NUMBER OF AP CREDITS

Singapore American School's vision is to be a world leader in education, cultivating exceptional thinkers who are prepared for the future. Our AT courses are directly aligned to this vision and foster the skills students need to develop into exceptional thinkers. These courses are designed to (1) prepare students for the demands of the 21st Century and (2) provide students with additional opportunities to differentiate themselves in the college application process.

To ensure students have a balanced selection of courses, the school has capped the total number of Advanced Placement credits that a student may earn at SAS. Starting with the graduating class of 2021, students may earn up to seven year–long–equivalent AP credits during their SAS careers. This limit was first announced during the 2014–15 school year.

For students and families who would like to learn more about the advanced studies program and the Advanced Placement credit limit, we offer the answers to frequently asked questions on our school portal (http://www.sas.edu.sg/AdvancedStudiesFAQs). We also encourage you to bring your questions to your high school counselors. They will gladly help clarify and are eager to support families and students to plan a course of study.

CO-CREDITING WITH SYRACUSE UNIVERSITY

We are pleased to announce a newly established co–crediting partnership with Syracuse University through their Project Advance program that may be applied to select Advanced Topic courses. The Syracuse University Project Advance (SUPA) program is a concurrent enrollment program linking the university with secondary schools. Through this partnership, we are able to offer qualified students the opportunity to concurrently enroll in Syracuse University courses for university credit. During the 2018–19 school year, AT Computational Physics and AT Economics: Globalization are eligible for concurrent enrollment in Syracuse University courses. Please see the course descriptions for these two AT offerings for more detail.

For more information regarding the Syracuse University Project Advance program, please see the advanced studies section of this guide. To determine whether participation in this program is a fit for your long–term goals, please speak with your counselor.

ADDITIONAL SELF-PACED COURSES OFFERED

Sections of AP Economics have been operating in a self–paced format for three years at SAS. In these sections, students may move faster than the usual pace of the class. While this format will not be a fit for every student, one of its benefits is giving students additional flexibility to manage their own time. As we continue to personalize learning in meaningful ways at SAS, we are pleased to announce that we are expanding self–paced options. Beginning in 2018–19, some sections of Geometry and AP Chemistry will be designated as self–paced. Regular sections of Geometry and AP Chemistry will continue to be offered.

RECOGNITION OPPORTUNITIES AT GRADUATION

As a school committed to standards-based grading, we believe that learning every student can reach high levels of learning. Our systems for recognizing students' hard work and achievement must reflect that belief.

We have transitioned to a cum laude system based on the model utilized by many universities. The new system recognizes outstanding achievement in three categories based on students' grade point averages. Only letter grades earned at SAS through the end of the fall semester of senior year will be taken into consideration.

This system will award three levels of distinction:

- Summa Cum Laude
  (highest distinction, 4.4 GPA or higher)
- Magna Cum Laude
  (higher distinction; 4.2 to 4.399 GPA)
- Cum Laude (distinction; 4.0 to 4.199 GPA)

QUEST PROGRAM NOW OPEN TO JUNIORS

We are thrilled that the Quest program will be graduating its second cohort of students as part of the Class of 2018!

Previously, Quest was only available to students during their senior years at SAS. Beginning in 2018–19, students may apply to participate in Quest during either their junior or senior years.

Students enrolled in the innovative year-long program can expect to:

- embrace unique experiences and challenges not available in existing course offerings;
- accelerate learning through interdisciplinary and real world applications;
- deep dive into a particular area of interest or passion;
- learn essential skills to prepare them for their future; and
- distinguish themselves when applying to college.

Please see the Quest section of this guide for more information.

SEAL OF BILITERACY WILL BE OFFERED

We are proud to announce that students in the SAS graduating classes of 2019 and beyond will be eligible to earn the Seal of Biliteracy. The Seal of Biliteracy serves to formally certify attainment of biliteracy for students and is recognized on high school diplomas. It is a statement of accomplishment that helps to signal a student's linguistic and cultural readiness not only for career and college, but also for engagement as a global citizen. The Seal of Biliteracy is already awarded by schools located in the 31 US states that had approved Seal of Biliteracy legislation as of February 1, 2018.

In order to earn a Seal of Biliteracy at SAS, students must demonstrate via school–designated external assessments that they have attained a minimum of Intermediate High proficiency in all four skills (i.e., reading, writing, listening, and speaking). For more information, please see the World Languages section in this guide.

NEW COURSES FOR 2018–19

- AT Multivariable Calculus and Linear Algebra
- AT Economics: Globalization
- Geometry Math Lab
- Engineering and Space Technology
- Theater: Sketch Comedy

CHANGED COURSES FOR 2018–19

- Several of our current courses will be offered under new titles. Molecular Biology will now be offered as Accelerated Biology. Functions, Statistics, and Trigonometry will now be offered as Introduction to Statistics and Pre-Calculus. Printmaking and Mixed Media will now be offered as Mixed Media and Digital Processes. Advanced Composition will now be offered as Creative Writing. AT Writing Seminar will now be offered as AT Writing

Workshop and Publication. For more details regarding these courses, please refer to their full entries in this guide.

- During the 2017–18 school year, we introduced Algebra 1 Math Lab to students who required intensive support with Algebra 1. Due to the success of Algebra 1 Math Lab in providing benefits to our students, we will offer Geometry Math Lab during the 2018–19 school year. These two Math Lab courses are designed to be taken concurrently with the associated college–preparatory math class and are available by teacher recommendation only. The purpose of these courses is to assist identified students with the development of mathematical skills, knowledge, and confidence.

- Functions, Statistics, and Trigonometry (FST) has undergone a curriculum review this year and is the last course in our math sequence to be brought into full alignment with the Common Core State Standards. In 2018–19, FST has been renamed Introduction to Statistics and Pre–Calculus. The curriculum adjustments that have been made allow students who do well in the course to elect to take AP Calculus AB. Access to the course remains the same as it has in years past, and we are proud to provide more of our students with a pathway to calculus.

- The current AP Calculus BC/Multivariable Calculus course will be offered for the last time in 2018–19. (The stand-alone AP Calculus BC course will continue to be offered.) We are developing semester-long AP Calculus BC, AT Multivariable Calculus and AT Linear Algebra courses that will be available for the first time in 2019–20.

- As announced last year, several Advanced Placement (AP) courses will be offered for the final time in 2018–19. These courses include AP Literature, AP Human Geography, AP Psychology, and AP World History. Advanced Topic (AT) courses in these subject areas are currently being developed to provide learning options that are more relevant, better support students to acquire 21st–century skills, and provide students with additional opportunities to differentiate themselves in the college application process.

GENERAL INFORMATION

HIGH SCHOOL DAILY SCHEDULE

TIME	CLASS/ACTIVITY
8:00 – 8:30 a.m.	See table below
8:35 – 9:55 a.m.	Block 1
9:55 – 10:15 a.m.	Break
10:15 – 11:35 a.m.	Block 2
11:35 AM – 12:10 p.m.	Lunch
12:10 – 1:30 p.m.	Block 3
1:30 – 1:40 p.m.	Break
1:40 – 3:00 p.m.	Block 4

WHAT HAPPENS FROM 8:00 TO 8:30

DAY	TEACHERS	STUDENTS
Mon	Advisory Plans	Flex: Clubs, Tutoring, etc.
Tues	Advisory Meets	Advisory
Wed	PLC	Flex and Assemblies
Thur	Advisory Meets	Advisory
Fri	PLC	Flex: Clubs, Tutoring, etc.

GRADUATION REQUIREMENTS

Required Courses in Specific Academic Areas	Minimum Credits	Recommended for College
English	4.0	4
Mathematics*	2.0	4
Science	2.0	3–4
Social Studies**	2.0	3–4
Language (level requirement)***	Intermediate**	3–4
Visual/Performing Arts	1.0	1
Physical Education	1.5	
Health Education	0.5	
Catalyst Project (Begins with Class of 2018)	0.5	
Minimum Total Credits****	24.0	

Clarifying Details
*Math: All students must earn two Math credits, one of which must be at the level of Geometry or higher.
**Social Studies: US citizens (not dual citizens) are required to earn one credit in US History.
***Language: Two years of study of the same foreign language (e.g., Chinese, French, or Spanish at the Novice, Intermediate level) or an equivalent proficiency in another language is required.
****Minimum credits: The minimum credits listed above are the absolute minimum number required to earn an SAS diploma. Completing the minimum credits may not be sufficient for admission to university. Focus should be on the "Recommended for College" column.
Interim: Students must participate in an Interim Semester course each year they are at SAS—one of which must be a service course.
One Interim service course (0.25 credit) is required.

SCHEDULE CHANGES

Please select courses carefully! Since returning students have opportunities in the spring to select and adjust their course requests, in August students must remain in their assigned courses for the first two days of the school year. This allows counselors to focus on assisting students who are new to SAS. Following this two–day moratorium, students who have a schedule problem are allowed to meet with a counselor and request changes. The add/drop period ends after the eighth school day. All requests must be for educationally sound reasons and approved by a counselor. Requests for changes must move a student from a larger section of a course to a smaller one. Students are also required to speak with their parents about proposed changes. At the beginning of the second semester, except for newly arriving students, no schedule changes can be made on the first day back in January. The add/drop period for second semester courses concludes on the fifth day of the semester.

Seniors must list their courses for the entire senior year when they apply to colleges. Should a change in a second semester course be made, colleges must be notified of the change. Should it appear that a student is choosing an easier load in the final semester, it can reduce the chances of admission. Seniors are advised to select their courses carefully for the entire school year and plan to remain in them. The Student Handbook has a full explanation of SAS drop/add policies.

ADVISORY AND HOUSE SYSTEM

Our advisory program was established in 2015, and in 2016, we rolled out our three advisory houses: Andor, Aquila, and Ethon.

Advisory and house seek to ensure that every student is known, cared for and guided; make our big school feel small; support students with solving real–world problems; strengthen students' sense of identity and belonging; and recognize students' individual learning experiences and talents.

Each advisory is composed of 10 to 12 students in the same grade who are assigned to a faculty advisor during their first year at SAS. In most cases, students will stay with the same advisor until they leave SAS. Advisory groups meet every Tuesday and Thursday morning from 8:00 a.m. to 8:30 a.m. Each advisory is also assigned to a house that includes approximately ten advisories per grade level. Houses are student–led and house representatives from each grade level form the student government. These students serve as an important voice of the student body, and their duties include but are not limited to organizing house assemblies, all–school pep rallies, spirit activities, and student forums with faculty and administration.

Advisory and house focus on improving students' interpersonal and intrapersonal skills, their cultural competence and their character. These meetings are structured around the content and behaviors needed to: 1) best ensure the social/emotional health of all students; 2) improve academic success; and 3) prepare students for the inevitability of change in their lives, including the transitions to high school, college, and adulthood.

The advisory program strives to create an atmosphere of trust where students feel safe to discuss a wide range of academic and personal matters in a setting that helps to balance the rigorous academic demands of the SAS experience.

THE SAS CATALYST PROJECT

Catalyst is a culminating experience where students apply their academic knowledge to real situations that are personally applicable to them. This entails using different skills than are sometimes required in regular academic courses at SAS. Catalyst is deliberately designed for students of all abilities and interests, and it is customized for all students to experience a successful project process. Further, grading is based on process and not product, so what they choose for their project is less important than how they conduct their work. Beginning with the Class of 2018, the successful completion of the Catalyst Project is a graduation requirement. It ensures that every SAS graduate will leave our school having immersed themselves in a personalized, experiential, educational experience that is essential for the their future.

FREQUENTLY ASKED QUESTIONS

What is the AP Capstone Diploma?

To receive the AP Capstone Diploma, students must successfully complete both AT Seminar and AT Research and Catalyst. In addition, they must earn a score of 3 or higher on both the AP Seminar and AP Research exam, and earn a score of 3 or higher on four additional AP exams of their choosing. Students typically take AT Seminar in their sophomore or junior year, followed by AT Research and Catalyst.

Where can I find an overview of which AP courses are being phased out and which AT courses are being added to the program offerings?

Please see the Appendix of this guide for an overview of our projected AP and AT course offerings through 2021.

Where can I learn more about the rationale behind the Advanced Studies program?

We offer on our school portal our frequently asked questions (http://www.sas.edu.sg/AdvancedStudiesFAQs) to help guide you through any questions you may have about our advanced studies offerings. We also encourage students to bring questions to their high school counselors. They will gladly help provide clarity and are eager to help any family as they plan a course of study with their child.

To whom does the Advanced Placement credit limit apply?

Starting with the Class of 2021 (this year's ninth grade students), there is a limit on the number of AP course credits a student may earn at SAS. These students may earn up to seven year–long–equivalent AP credits during their SAS careers.

How many AP courses will my child be able to take? What does the AP credit limit mean for access to AP exams?

The Class of 2021 will be able to take a maximum of seven total year–long–equivalent credits in AP courses (14 total semesters of AP). This credit limit will allow our students to choose from nearly 40 of our Advanced Studies offerings. We currently offer and will continue to offer 20+ AP courses, an additional 19 Advanced Topic courses, plus our Catalyst course, independent study, and other personalized options.

Up to 7 year–long–equivalent AP credits may be earned by students in the graduating classes of 2021 and beyond. However, students will still be able to access up to 14 AP examinations during their SAS career.

There are currently four AT courses after which students may elect to sit the related AP exam. There is close alignment of the content covered in these courses and our DSLOs:

- AT Environmental Science and Fieldwork (AP Environmental Science exam)
- AT Computational Physics (AP Physics 1 exam)
- AT Seminar (AP Seminar exam)
- AT Research and Catalyst (AP Research exam)

An additional AT course in this category will be offered beginning in the 2019–20 school year. Though the AT Literature course is not aligned to AP English Literature curriculum, the skill–based nature of the exam does not require much (if any) content knowledge, and students may draw from a wide body of literary works in answering questions on the exam.

- AT Literature (AP English Literature exam)

Furthermore, there are currently four half–credit AP courses. Often, students will take two semesters of AP Government and Politics or two semesters of AP Economics. These students may sit two exams:

- AP Macroeconomics
- AP Microeconomics
- AP Government and Politics: Comparative
- AP Government and Politics: US

How can I fulfill my Catalyst Project graduation requirement?

There are three ways that students can fulfill their Catalyst graduation requirement. These paths are described below and summarized in the table that follows. Regardless of the path chosen in completing their requirement, students will:

- receive explicit instruction and feedback on our desired student learning outcomes (DSLOs);
- explore, innovate, encounter real–life challenges, learn from occasional failures or setback, devise solutions, and reflect deeply on who they are as learners;
- learn valuable skills on how to build professional networks and collaborate with mentors;
- manage time to see a project through from start to finish;
- feel better prepared to be successful in college, career, and civic life.

AP Capstone, Quest and the SAS Catalyst program. How are these different?

Although all three fulfill the Catalyst graduation requirement, there are some significant differences.

The SAS Catalyst Project

The Catalyst Project is a personalized course where students work with teachers who act as guides as students design, plan, and complete interest–based projects. Students focus on producing a meaningful outcome and are encouraged to dive deep into relevant content and knowledge. This course is for everyone – the program is built to inspire and assist students whether they already have a project idea or not. Optionally, the Catalyst Project can be extended into a second semester, or become a "hyper–Catalyst," because the student's project requires greater resources and time.

AT Seminar and AT Research and Catalyst (AP Capstone)

AT Seminar and AT Research and Catalyst are both required to complete the AP Capstone. AT Seminar is a year–long, inquiry–driven course that engages students in cross–curricular conversations that explore real–world topics and issues from multiple perspectives. After successfully completing AT Seminar, most of our students enroll in the year–long AT Research and Catalyst. AT Research and Catalyst asks students to deeply explore an academic topic, problem, or issue of individual interest with the expectation of producing both a university level research paper and a meaningful Catalyst Project. As these courses have fully adopted the AP Capstone curriculum, students will be eligible to take the AP Seminar and AP Research exams. (Note: Students who do not wish to enroll in AT Research and Catalyst after AT Seminar would enroll in the SAS Catalyst Project semester–length course to fulfill their Catalyst graduation requirement. In these instances, students would not be eligible for the AP Capstone Diploma.)

Quest

Quest is a full–year, all–day, immersive program that supports students in pursuing their curiosity and passion. Instead of taking traditional courses, students earn six credits through interdisciplinary projects that are personalized to their interests. The year culminates with a junior or senior project thesis paper, thesis talk, and thesis defense; successful completion of which fulfills the Catalyst graduation requirement.

THREE WAYS TO FULFILL THE CATALYST GRADUATION REQUIREMENT

SAS Catalyst Project	AT Research and Catalyst	Quest
• Students earn their graduation requirement through this personalized course (one semester is the minimum requirement). • Prerequisite: None. This course is accessible to everyone in their junior or senior year. • Note: Optionally, students may extend their Catalyst experience by taking the course for a second semester or by enrolling in a hyper–Catalyst (hyper–Catalyst is by application).	• Students earn their Catalyst graduation requirement through this year–long AT course. • Prerequisite: Students need to successfully complete AT Seminar to complete their Catalyst requirement through AT Research and Catalyst. • Note: In addition to fulfilling their Catalyst requirement, students who successfully complete AT Seminar and AT Research and Catalyst are eligible to earn the AP Capstone Diploma .	• Students earn their Catalyst graduation requirement through their fully personalized, all–day, year–long participation in the Quest program. • Prerequisite: Enrollment to the Quest program via application. • Note: Quest is an immersive program; students earn credits by pursuing interdisciplinary projects that are personalized to their interests.

ENGLISH

The English curriculum focuses on reading, writing, speaking and listening, research, and language. Each area will be assessed in every English course in various ways, and skills will be revisited and refined over the course of the four–year program. ***Students must enroll in an English class every semester they attend SAS.*** All freshmen must take English 9 or World Studies, while sophomores must take English 10 or American Studies. Upperclassmen may opt for any of the following courses during the junior and senior years: AP English Language, AP English Literature, AT Writing Workshop and Publication (all year long), or a combination of the semester–length junior/senior option courses.

While all of the courses can be used to fulfill the four-credit SAS English graduation requirement, please note that there are some that do not meet the English requirements set by some outside organizations. The US National Collegiate Athletic Association (NCAA) reviews all core courses at all high schools and makes an independent assessment on whether they are considered substantially comparable to a traditional core course. If you are a talented athlete who could potentially play a sport in a US college, be aware of the non–traditional SAS English courses that are not certified by the NCAA.

FAQ: Should a ninth grader choose English 9 and World History or the combined double block World Studies course?

English 9, World History, and World Studies each challenge students to dive more deeply into content knowledge covered, and empower students to make meaningful connections across disciplines through an inquiry lens. For the World Studies course, which meets every day with the same teacher, school transcripts will not reflect independent grades for English 9 and World History, but instead will note one grade for World Studies. Whether choosing the combined double block option or the discrete courses, to be successful, a student will need to thoughtfully understand the content introduced and master the skills of speaking persuasively, writing effectively, and reading analytically. Students will be expected to consistently research and share their perspectives in collaborative environments. The skills, methods, and thinking emphasized in English 9, World History and World Studies will prove beneficial when students are asked to choose and develop an interdisciplinary SAS Catalyst Project. Similarly, both choices will adequately prepare students for higher level social studies and English courses (AP and AT).

World Studies (English 9/World History)

ID: 41005 Grade: 9 Length: Year
Credit: English/Soc Studies (2)
Note: Double block/credit in English and History.

This course is a thematic study of the human experience through the lenses of history, sociology, economics, civics, and literature, with a focus on skills development. Students will explore critical issues, ideologies, individuals, texts and turning points in the histories of the world, considering how these developed and shaped both past and contemporary issues. Students will be challenged to think critically and to make thoughtful connections as they draw on a variety of resources to understand the human experience. Students will be challenged to demonstrate the development of their skills and understandings in final culminating projects. This interdisciplinary course will meet every day, and students will earn both an English and a Social Studies credit for completing the course.

Reading and Viewing—Students will critically read a variety of nonfiction (e.g. textbooks, academic articles, primary source documents), fiction (e.g. novels, short stories), drama, and poetry reflecting the human experience. They will be challenged to read closely and critically, to understand literary structure and technique, and to read like a historian. They will be encouraged to read widely outside of class in order make connections. Core texts include a memoir, *The Ramayana*, *The Merchant of Venice*, and *Lord of the Flies*.

Writing—Students will develop their writing in a variety of genres (e.g. argumentative, informative, narrative, reflective/blog), responding to both literature and social studies concepts. Language usage and mechanics instruction will focus on the problems evident in the students' writing. Students will also develop their vocabulary using the individually levelled program, Membean.

Speaking and Listening—Students are expected to participate fully in class discussions (shared inquiry, fishbowl, Socratic seminars etc.), work in small groups, and make formal presentations, with a focus on persuasive speaking skills.

English 9

ID: 41012 Grade: 9 Length: Year
Credit: English

English 9 focuses on writing, reading, speaking/listening, and language skills in addition to a year–long vocabulary study of Greek and Latin prefixes, roots, and suffixes. The course is organized into four quarter–long thematic studies which are linked to the student's World History course. Each quarter concludes with inquiry–based projects.

Reading and Viewing—Students will focus on the skill of inferring meaning from text. Students will read within the genres of narrative, nonfiction, novel, poetry, drama, and short story. Additionally, a common expectation in English 9 is for students to read at least two personal books each month, contributing to a goal of 20 personal books per student per year.

Writing—Students will learn how to manage and organize primary and secondary source material, using each in increasingly sophisticated writing tasks. Students will learn to produce writing in analytical, informative, reflective, narrative, and creative forms. Students will refine their knowledge and application of syntactical patterns.

Speaking and Listening—Students will learn how to participate in shared inquiry discussions by supporting their thinking with textual evidence from their readings. Students will also prepare for and present their quarterly projects.

American Studies (English 10/US History and Government)

ID: 41014 Grade: 10 Length: Year
Credit: English/US History (2)
Note: Double block/credit in English and US History and Government.

This course is a thematic study of the American experience through the lenses of history and literature, with a focus on skills development. Through the thematic units "American Values," "All Men are Created Equal?," "The American Dream," and "Conflicts and Resolutions," students will explore critical issues, individuals, and turning points in the history of the United States of America. Students will analyze the extent to which ideologies, people, literature, and events developed and shaped both American history and its contemporary issues. Students will be challenged to think critically and to make thoughtful connections as they draw on a variety of resources to understand the American experience. This interdisciplinary course will meet every day, and students will earn both an English 10 and a US History and Government credit for completing the course.

Reading and Viewing—Students will critically read a variety of nonfiction (e.g. academic articles, primary source documents), fiction (e.g. novels, short stories), drama and poetry reflecting the American Experience; the history text will be *The Americans*. Students will continue to develop skills in visual literacy by critically viewing documentaries and films. Students will be encouraged to read widely outside of class in order make connections.

Writing—Students will develop their writing in a variety of genres (e.g. persuasion, narration, analysis, synthesis), responding insightfully to both literature and history and they will pursue class–related areas of interest for their research projects. Language usage and mechanics instruction will focus on the problems evident in the students' writing.

Speaking and Listening—Students are expected to participate fully in class discussions, work in small groups, and conduct oral presentations, with a focus on persuasive speaking skills.

English 10: American Literature

ID: 41013 Grade: 10 Length: Year
Credit: English

English 10 is a survey of American Literature. Throughout the course, students are asked to think critically and reflect on two key questions: Who or what is an American? Is the American Dream a myth or reality?

Reading and Viewing—Students will read a variety of fiction, nonfiction, and poetry reflecting the various literary periods in American Literature. Students will study classic texts chosen from titles such as *The Catcher in the Rye*, *The Adventures of Huckleberry Finn*, *The Great Gatsby*, *Outliers*, *The Crucible*, and *A Raisin in the Sun*. Students may also participate in literature circles using texts that examine current issues in America. Additionally, students will continue to develop skills in critical observation and creative representation by viewing videos of films and short subjects.

Writing—The form and structure of the short essay are stressed, and the quality of writing is enhanced through the application of the writing process.

Students will write in a variety of modes and styles (e.g. argumentative, narrative, informational, synthesis), with a focus on persuasive writing and research. Language usage and mechanics instruction focuses on the problems evident in the students' writing and in their application of previously acquired skills.

Speaking and Listening—The course emphasizes the discussion of literary selections and oral reports to emphasize the skill of persuasive speaking.

JUNIOR/SENIOR SEMESTER OPTIONS

The junior and senior options continue the development of skills and intensive study of literature of a college preparatory English sequence. These semester–long courses cover diverse bodies of literature from various periods and cultures. All of the courses develop writing, reading, viewing, speaking, listening and technology skills. Please note that some options are offered on a two–year, rotating basis; see course descriptions for details.

Writing—Students will compose a variety of writing assignments, such as personal essays, literary analysis, compare and contrast essays, reviews, journal entries, and character sketches. They will be encouraged to develop an authentic voice and sense of audience. Students will revise pieces of writing, concentrating on content and organization, and edit to improve diction and mechanics. Students will participate in peer critiquing and editing.

Speaking and Listening—Students will speak in a variety of contexts: speeches and oral presentations, large and small group discussions, dramatic readings, and/or readers' theater activities.

Reading and Viewing—Students will read a significant body of literature appropriate to the focus of the course.

SEMESTER I OPTIONS

Creative Writing

ID: 41042 Grade: 11–12 Length: Semester I
Credit: English
Note: This course was previously named Advanced Composition. If a credit was earned in that course, you cannot retake it under this new name.
Offered in 2018–19; may be offered in 2019–20. English courses are undergoing a curriculum review and this may mean a change in junior and senior courses for 2019–20 or beyond.

This semester course is designed for students who wish to explore creative writing, to develop an individual writing voice, and to learn first–hand how creative writers work. Using a workshop format, both in class and online, students will hone their collaboration skills as they survey specific forms of creative writing, develop a peer community of writers to critique and support each other, and create an individual portfolio of creative work. Students will have opportunities to submit their works to outside publications and select and perform their own works for a student–developed public reading at the end of the semester. While this course is not required for AT Writing Workshop and Publication, it does serve as an excellent foundation and introduction to the creative writing process.

British Literature: The World of Shakespeare

ID: 41006 Grade: 11–12 Length: Semester I
Credit: English
Note: Offered in 2018–19; predicted to not be offered in 2019–20. English courses are undergoing a curriculum review and this may mean a change in junior and senior courses for 2019–20 or beyond.

In this course, students will study Shakespeare's works in depth, critically reading at least one play from each of his four genres (history, comedy, tragedy, and romance), along with sonnets and other poetry. Supplementary readings will include recent articles and scholarship about Shakespeare and Elizabethan England and the development of Shakespeare's language; in addition, students will critically view films and performances (if possible) of the plays. In response to the readings, students will write in a variety of genres (e.g. persuasion, narration, critical responses) and participate in shared inquiry discussions and presentations.

Literature and the Imagination (Science Fiction)

ID: 41011 Grade: 11–12 Length: Semester I
Credit: English
Note: Offered in 2018–19; may be offered in 2019–20. English courses are undergoing a curriculum review and this may mean a change in junior and senior courses for 2019–2020 or beyond.

Students in this course will study the three stages of Science Fiction: Gothic/classic science fiction period (1818-1926); the modern period (1926-1960s); and the contemporary period (1960s-present). Through the study of the literature of these three periods students will examine the philosophical (ethical), scientific, and political ideas developed in science fiction literature. Key ideas include: the ethics of science and the responsibility of the scientist, the conflict between man and technology, man's relationship to nature, the individual against society, mankind meeting alien species, social problems highlighted in science fiction literature and film, and how science fiction questions what it means to be human. Students will also explore the relationship of science fiction literature to the novel and film. Consequently students will analyze both written text and film. The variety of science fiction writers includes Ray Bradbury, P.D. James, Mary Shelley, and H.G. Wells.

Reading, Writing and Publishing in a Digital World

ID: 41024 Grade: 11–12 Length: Semester I
Credit: English
Note: Offered in 2018–19; may be offered in 2019–20. English courses are undergoing a curriculum review and this may mean a change in junior and senior courses for 2019–20 or beyond.

This project–based course examines the textual relationship between literary style and content, examining how it has evolved over time. We examine how the tools of expression—the spoken word, the pen, the printing press, the radio, the television and the internet—have changed the ways we describe, explain, persuade, and narrate in the world. By reading and writing many different forms, students will better understand how to interpret the written world and publish work with a greater awareness of the effects on different audiences. This course is designed to help students think critically about and responsibly within the digital age. Students will plan, write, revise, produce, record, film, publish, and evaluate their own work, creating a body of writing to take with them in their personal portfolio.

SEMESTER II OPTIONS

Contemporary American Literature

ID: 41008 Grade: 11–12 Length: Semester II
Credit: English
Note: Offered in 2018–19; may be offered in 2019–20. English courses are undergoing a curriculum review and this may mean a change in junior and senior courses for 2019–20 or beyond.

Contemporary American Literature focuses on reading text from multiple genres (e.g., nonfiction, poetry, imaginative literature, film, etc.) to explore the values, voices and attitudes in present–day American society. These myriad texts will be applied to wider contexts including gender, cultural, historical, psychological and political issues. For instance, what impact has the social construction of gender had on our contemporary understanding of masculinity and femininity or how is language used in political and social discourse to convey meaning? Students will analyze such issues through writing, speaking, and collaborative tasks that require them to consider the multiple perspectives involved. They will also practice their research skills by developing guiding questions and identifying academic sources to support their thinking.

Genres of 21st Century Literature (Film as Literature)

ID: 41010 Grade: 11–12 Length: Semester II
Credit: English
Note: This course does not meet the NCAA Division I core course requirement for English. See counselor for details. Offered in 2018–19; predicted to not be offered in 2019–20. English courses are undergoing a curriculum review and this may mean a change in junior and senior courses for 2019–20 or beyond.

Film is a dominant storytelling medium in the 21st century. The best films can be "read" like books or poems as they contain rich characters, deep symbolism, and complex themes just like the best literature. This course will examine films as texts, and teach students how to interpret what they see on the screen, how to use the technical vocabulary of films and images, and how to write about film in a critical way. Students will annotate informational text, analyze differences and similarities between film and literature, read literature, participate in collaborative discussions, write analytical essays, and practice their independent research skills. Films included in this course may include *The Godfather, Citizen Kane, Rear Window, The Seven Samurai* and other important works. Students will also have the opportunity to choose their own films for independent study.

Studies in Satire

ID: 41022 Grade: 11–12 Length: Semester II
Credit: English
Note: Offered in 2018–19; may be offered in 2019–20. English courses are undergoing a curriculum review and this may mean a change in junior and senior courses for 2019–20 or beyond.

This course will provide students with a broad sense of satire in terms of how it has been defined and practiced. Thus, students will begin by briefly discussing several approaches to explaining the basic concepts of satire. These efforts seek to explain satire's long and successful run as a literary genre and to clarify just how satire works. After establishing a critical lens through which to view satire, students will study classical examples of satire primarily from the eighteenth through the twentieth centuries using texts such as *Being There, Brave New World, The Handmaid's Tale, The Malcontents,* and *Cat's Cradle. All the* while, each week students will also be keeping tabs on twenty–first century satire. Overall, the course seeks to enhance students' critical thinking skills by closely analyzing the criticisms inherent in works of satire.

World Literature: Myths and Monsters

ID: 41017 Grade: 11–12 Length: Semester II
Credit: English
Note: Offered in 2018–19; may be offered in 2019–20. English courses are undergoing a curriculum review and this may mean a change in junior and senior courses for 2019–20 or beyond.

The monster is a figure as old as literature itself. From the myths of the Greeks to the Biblical Leviathan, monsters of various kinds have roamed the landscapes of our imaginations. This course asks, what is a monster? Why do people seem fascinated with the grotesque, the outcast, and the evil? How are monsters portrayed in literature and other art forms? We will examine novels and stories that feature classic and contemporary visions of vampires, demons, ogres and perhaps the most frightening monster of all: mankind.

JUNIOR/SENIOR FULL–YEAR OPTIONS

AP English Language and Composition

ID: 41028 Grade: 11–12 Length: Year
Credit: English
Prerequisite: No prerequisite for students to select this course in twelfth grade. Semester I grade of B+ or higher in English 10/American Studies is required to select this course in eleventh grade. Students with a Semester I grade of B in English 10/American Studies or a Semester I grade of A+ in English 9/World Studies may select this course if they also obtain a current teacher recommendation.

The AP Language and Composition course is primarily a course in both effective writing and critical reading. This course engages students in becoming skilled readers of prose written in a variety of periods, disciplines, and rhetorical contexts and in becoming skilled writers who compose for a variety of purposes. Readings will draw from a variety of topics, depending on relevance and student interests. These topics may include politics, technology, gender, education, the environment, or community. Students planning to take AP Language and Composition as a junior are cautioned: successful completion of the course requires a much greater effort and is significantly more demanding than English 10. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP English Literature and Composition

ID: 41029 Grade: 11–12 Length: Year
Credit: English
Prerequisite: Any English AP/AT course; or Semester I grade of B or higher in an eleventh grade English course; or current teacher recommendation.
Note: This course will be offered for the final time in 2018–19. Beginning in 2019–20, the course will be replaced with an Advanced Topic offering in literature.

This course is designed for upperclassmen who have demonstrated a commitment to the critical study of literature and the study and practice of writing. Through speaking, listening, and reading, but chiefly through the experience of their own writing, students will become more aware of the resources of language and more adept at formal analysis of literature in terms of both form and content. The focus of this course is the in–depth analysis of literature in a variety of modes: Greek drama, Shakespearean drama, the novel, satire, the essay, and poetry. The AP curriculum is not specifically prescribed and may vary in content and emphasis from year to year. Works selected for study will represent a variety of modes and periods and are generally recognized as literary classics. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AT English: Writing Workshop and Publication

ID: 41046 Grade: 11–12 Length: Year
Credit: English
Prerequisite: Semester I grade of B or higher in an AP English course; or Semester I grade of B+ or higher in English 10/American Studies or in an eleventh grade English offering. Students with a Semester I grade of B in English 10/American Studies or in an eleventh grade English offering may select this course if they also obtain a current teacher recommendation. Students who have signed up will be required to submit a portfolio of creative writing pieces prior to the fall semester in order to remain in the course. See your English teacher for details.

Note: This course was previously named AT English: Writing Seminar. If a credit was earned in that course, you cannot retake it under this new title.

This course offers an intensive, year–long inquiry into the creative writing and publication process. The course will operate in a small writers' community to be structured on the Iowa Writers' Workshop model used in creative writing departments across the world, but scaled for a high school student. The course is designed for students who already have a regular writing process in any creative genre and can demonstrate a passion for creative writing with a portfolio of work. The course will feature a variety of units to develop insight and skills centered on creativity and producing a collaborative professional publication. These units include: idea generation through journaling and writing exercises, designing and refining sentences and forms, producing and iterating drafts of fiction, nonfiction, and poetry, demonstrating courage to explore different approaches through radical revision, creating with others through writing workshop, and reflecting on the creative process in a journal and portfolio. The course will feature regular workshops to improve drafting and editing skills, study and analysis of works and writers (based on student voice and choice) that examines process and audience as well as key ideas and craft, structured encounters with visiting local and international authors, a writer's retreat to encourage growth of relationships and community, and production of a publication of student work (print, digital, and/or performance) based on inquiry into contemporary publishing practices. This course was collaboratively developed and endorsed by a professor at Yale–NUS. The Advanced Topic designation indicates a course is at university level, putting it at or above the level of a traditional Advanced Placement (AP) course. This course has a grade point weighting of 0.5.

SOCIAL STUDIES

Social Studies offerings are consistent with the school's DSLOs, and are designed to allow students to develop and demonstrate character, collaboration, communication, creativity, critical thinking, cultural competence, and content knowledge. Toward this end, courses are built around the College, Career, and Civic Life (C3) framework, a set of standards from the US National Council for the Social Studies (NCSS). Students will develop questions, apply disciplinary tools, evaluate evidence, and communicate conclusions. Ninth grade students will take one of the two world history courses outlined below. Tenth through twelfth grade students have a wide variety of choices in the disciplines of history, government, economics, business, geography, and psychology, as well as the opportunity to take AT and AP courses in those disciplines.

REQUIRED NINTH GRADE WORLD HISTORY OPTIONS

All SAS ninth grade students must be enrolled in either World History or World Studies, which is the combined English 9/World History course.

English 9, World History, and World Studies each challenge students to dive more deeply into content knowledge covered, and empower students to make meaningful connections across disciplines through an inquiry lens. For the World Studies course, which meets every day with the same teacher, school transcripts will not reflect independent grades for English 9 and World History, but instead will note one grade for World Studies. Whether choosing the combined double block option or the discrete courses, to be successful, a student will need to thoughtfully understand the content introduced and master the skills of speaking persuasively, writing effectively and reading analytically. Students will be expected to consistently research and share their perspectives in collaborative environments. The skills, methods and thinking emphasized in English 9, World History and World Studies will prove beneficial when students are asked to choose and develop an interdisciplinary SAS Catalyst Project. Similarly, both choices will adequately prepare students for higher level social studies and English courses (AP and AT).

World Studies (English 9/World History)

ID: 41005 Grade: 9 Length: Year
Credit: English/Social Studies (2)
Note: World Studies is a combined double–block English 9 and World History course. The course meets daily with the same teacher. Students can choose the double–block World Studies or separate English 9 and World History.

Please refer to the full course description in the English section.

World History

ID: 42022 Grade: 9 Length: Year
Credit: Social Studies

World History will provide students with the opportunity to explore critical issues, individuals and turning points in the histories of the world. Students will analyze the extent to which ideologies, societies, and events developed and shaped both our history and contemporary issues. Using an inquiry framework, students will develop questions, read and think like a historian, evaluate sources, and communicate ideas. Through the thematic lenses of power, belief, conflict, and change, students will be challenged to think critically and to make thoughtful connections as they draw on a variety of resources to understand the human experience. By the end of the course, students should be able to discuss their understanding of these themes, supported by historical evidence. The course themes are linked to the English 9 course and students will be encouraged throughout the year to make connections between these courses. All ninth graders must enroll in either this course or World Studies.

US HISTORY OPTIONS

US citizens (not dual citizens) are required to earn a credit in US History and Government, American Studies, or AP US History. Since some US public universities (e.g., University of California) require US History as an admission requirement, students who might be applying to a US public university should complete a year of US History and Government, American Studies, or AP US History.

American Studies (Eng 10/US History)

ID: 41014 Grade: 10 Length: Year
Credit: English and US History (2)
Note: American Studies is a combined double–block English 9 and US History and Government course. The course meets daily with the same teacher. Sophomores can either choose the double–block American Studies or choose English 10 plus US History and Government, AP US History, or any other social studies course.

Please refer to the full course description in the English section.

US History and Government

ID: 42012 Grade: 10–12 Length: Year
Credit: US History

This course enables students to make intelligent judgments on societal problems of the past, present, and future. Developments of economic, cultural, and political patterns as well as the changing demographics of America since the Civil War are stressed. First semester topics include a review of American foundational beliefs and events from the time period between the Civil War and the Industrial Revolution. The government unit features a study of the Constitution of the United States and the legislative, executive, and judicial branches of the federal government.The second semester focuses primarily on the 20th Century, from the development of Imperialism, Economic Boom and bust cycles as well as the World Wars, and US Foreign Policy.

AP US History

ID: 42036 Grade: 10–12 Length: Year
Credit: US History
Prerequisite: Semester I grade of A or higher in World History/World Studies is required to select this course in tenth grade; a B or higher in a tenth or eleventh grade social studies course is required to select this course in eleventh or twelfth grade; or current teacher recommendation.

This course provides students with an understanding of major themes in US history, including American identity, economic and social life, political change and continuity, and the US role in the world. The course is ideal for the student who has a real interest in history and who is prepared to work consistently and to go well beyond mere memorization of the material. Students are required to be internally motivated, to have good reading and comprehension skills, to be well organized, and to be prepared to examine and think about different, often conflicting, interpretations of history. The course moves briskly, so students must be prepared to devote time daily to reading and note taking. There will be considerable in–class discussions based on assigned readings, as well as numerous interpretive essays. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

HISTORY, CULTURES AND GEOGRAPHY OPTIONS

History of Malaysia and Singapore

ID: 42007 Grade: 10–12 Length: Semester
Credit: Social Studies

This course provides an overview of the events and forces that have created the modern nations of Malaysia and Singapore. Students will examine the common cultural and historical background of the two countries, as well as the impact of geography and location on their histories. The role of foreign empires and colonial powers will be examined, along with the forces at work and the courses followed in their independence movements. Emphasis will be placed on Singapore and Malaysia today. Students will examine their societies, cultures, economies, and political development through simulations, independent research, lectures, and class discussion.

AP World History

ID: 42039 Grade: 10–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of A or better in World History/World Studies is required to select this course in tenth grade; Semester I grade of B or higher in a tenth or eleventh grade social studies course is required to select this course in eleventh or twelfth grade; or current teacher recommendation.
Note: 2018–19 will be the final time this course is offered. Beginning in 2019–20, the course will be replaced with an Advanced Topic (AT) offering in history. Students who take AP World History may choose to take the AT offering in history for credit. Students who are considering taking this course in eleventh grade are encouraged to speak with their counselors.

The purpose of AP World History is to develop greater understanding of the evolution of global processes and contacts, advanced through factual knowledge and specific analytical skills. The course will focus on change and continuity within and between cultures, allowing students to improve their analytical and persuasive writing skills. Students will explore the cultures of Asia, Africa, Europe, the Americas, and the Pacific islands. The period covered is from the Neolithic era to the present. Students will be prepared for

and strongly encouraged to sit for the AP exam in May.

AP Human Geography

ID: 42051 Grade: 10–12 Length: Year
Credit: Social Studies
Prerequisite: No prerequisite for students to select this course in twelfth grade. Semester I grade of A or better in World History/World Studies is required to select this course in tenth grade; Semester I grade of B or higher is required in a tenth grade social studies course to select this course in eleventh grade; or current teacher recommendation.
Note: 2018–19 will be the final time this course is offered. Beginning in 2019–20, the course will be replaced with an AT offering in geography. Students who take AP Human Geography may choose to take the AT offering in geography for credit. Students who are considering taking this course in eleventh are encouraged to speak with their counselors.

This course is designed to introduce students to key concepts surrounding human geography. Emphasis is placed on understanding past and present trends in population dynamics, political geography, geopolitics, economic development, cultural considerations, agriculture, and urbanization. Throughout the course geographic models are presented to explain trends and to predict future change. For anyone interested in world geography and current events, this course is a natural as it combines theory with present case studies. This course receives a 0.25 additional GPA weighting (rather than 0.5). Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP US Government and Politics

ID: 42035 Grade: 11–12 Length: Semester I
Credit: Social Studies
Prerequisite: Semester I grade of B or higher in a tenth or eleventh grade social studies course; or current teacher recommendation.

This college level course is designed to give students an analytical perspective on government and politics in the United States. The course includes both the study of general concepts used to interpret US politics and the analysis of specific examples. The following are the basic concepts to be covered: constitutional underpinnings of US government; political beliefs and behaviors; political parties, interest groups, and the mass media; institutions of national government; and the formation of public policy. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP Comparative Government and Politics

ID: 42031 Grade: 11–12 Length: Semester II
Credit: Social Studies
Prerequisite: Semester I grade of B or higher in a tenth or eleventh grade social studies course; or current teacher recommendation.

This college level course is intended to help students better understand the diverse constitutional, ideological, and social bases of political leadership exercised by different countries. Six countries, China, Great Britain, Iran, Mexico, Nigeria, and Russia are examined. Basic concepts to be covered are: the sources of sovereignty, public authority, and political power; national and international political institutions; the relationship between citizens, state, and society; the causes and effects of political and economic change; and various areas of public policy. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AT Urban Studies

ID: 42060 Grade: 11–12 Length: Semester
Credit: Social Studies
Prerequisite: AP Human Geography; or a Semester I grade of B or higher in a tenth or eleventh grade social studies course is required to select this course; or current teacher recommendation.

Students will study urban development from a historical and a geographic perspective focusing on themes, trends, and challenges that have faced urban planners. Students will engage in various interdisciplinary assignments and projects which demonstrate understanding of the key concepts, content, and skills associated with city design and analysis. Students will apply this knowledge to Singapore and look for themes and patterns related to various community stakeholders. Students will then focus on a theme of personal interest which will form the basis of field work research paper/project. Themes could relate to topics such as gentrification, green space, the negotiation between private and public interests, architecture, transportation, leisure and recreation, or government housing, and may focus on one specific location, such as the their own neighborhood.

Following the fieldwork–based research, students will look at the main challenges and issues facing urban planners today around the world. The culminating summative project will be a research project which can take a variety of forms, but will address one of these issues. Students will also share a presentation which summarises their research and findings. This course will involve research in the field, and will require students to visit sites in their own time, and be responsible for conducting that field research. This course was collaboratively developed and endorsed by a head of department at the Institute of Urban and Regional Planning, Mumbai, India. The AT designation indicates a course is at university level, putting it at or above the level of a traditional AP course. The course requires rigorous study and emphasizes in–depth research. Like an AP course, this course has a grade point weighting of 0.5 for the duration of the course.

BUSINESS AND ECONOMICS RELATED OPTIONS

Economics is a social studies field that seeks to analyze and describe the production, distribution, and consumption of wealth. Business and economics courses are related to social studies but are viewed by most colleges as being different than the more traditional history courses.

Economics

ID: 42008 Grade: 10–12 Length: Semester
Credit: Social Studies

Economics will provide students some insight into ways by which people and nations function economically, i.e., how they make a living. Basic economic concepts including wealth, utility, capital, labor, supply and demand, profit and competition, production, distribution, exchange, consumption, and the factors affecting each area are studied. Monetary and fiscal policies are examined in the light of contemporary economics, both national and international. Students will study major recessions to understand fiscal policy, the public debt, and ways banks create money.

Behavioral Economics and Game Theory

ID: 42023 Grade: 10–12 Length: Semester
Credit: Social Studies
Note: This course does not meet the NCAA Division I core course requirement for Social Studies. See counselor for details. This course was previously named Decision/Analysis. If a credit was earned in that course, you cannot retake it under this new name.

This course uses models from the disciplines of psychology and economics to encourage a logical, deductive approach to thinking, and to look at several different approaches to resolving conflicts. The major analytical models presented are derived from "game theory" and "behavioral economics." These models are used to tackle issues and problems across the entire spectrum of the social sciences. The course is largely problem centered, applying game theory tactics and skills to hypothetical situations and to case studies that that come from history, current world events, and the immediate world around us. Individual analysis,small group discussion, and class discussion are common formats.

AP Economics

ID: 42045 Grade: 11–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of B or higher in a tenth or eleventh grade social studies course; or current teacher recommendation.

AP Economics is made up of two semester–length College Board AP courses: Macroeconomics and Microeconomics. Topics covered include basic concepts such as scarcity, trade–offs, and the functions of the economics system; the nature and function of product markets, including basic supply and demand theory, consumer choice theory, and pricing theory; the nature and function of factor markets, including theories of wage determination; measurement of economic performance using concepts such as gross domestic product, inflation, and unemployment; analysis of various schools of economic thought in relation to aggregate demand and aggregate supply; money and banking, including the tools of the central bank; and, finally, the usefulness of various government policies that can be applied to remedy the economic problems discussed throughout each semester. College Board offers both an AP Microeconomics and AP Macroeconomics exam. This course prepares students to take both exams in May. SAS offers two different versions of AP Economics. In this version, students proceed as a class at the normal AP pace. A self–paced AP Economics (42046) is also available. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP Economics (Self–Paced)

ID: 42046 Grade: 11–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of B or higher in a tenth or eleventh grade social studies course; or current teacher recommendation.

This self–paced AP Economics covers the same content as the more traditional AP Economics course (42045), but students have the flexibility to move faster than the normal pace of the class. Students may take assessments before the normal due date but may not fall behind. Students who sign up for this course will benefit from the flexibility to plan the timing of assessments themselves but should be self–directed and strong independent learners. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AT Economics: Globalization

ID: 42061 Grade: 11–12 Length: Semester
Credit: Social Studies
Prerequisite: AP Economics; or a Semester I grade of A in Economics plus teacher recommendation.
Note: This course offers students an option to pursue possible university credit.

This college level course is designed to offer students an opportunity to delve deeper into the international economy than our introductory courses allow. The focus of the course is globalization (international trade and economic development). Students use the conventional models learned in previous economics classes as well as the less conventional models of behavioral economics to study economic development and growth. All students will write a research paper and work on a development problem with a local social enterprise as culminating economics projects. The AT designation indicates a course is at university level, putting it above the level of a traditional AP course. The course requires rigorous study and emphasizes in–depth research. Like an AP course, this course has a grade point weighting of 0.5 for the duration of the course.

This course is aligned to the criteria for a Syracuse University economics course (SUPA ECN 203). Therefore, AT Economics: Globalization students may elect to earn Syracuse University credit by concurrently enrolling in SUPA ECN 203. Students must enroll in the Syracuse University system at the beginning of AT Economics: Globalization and successfully complete additional assignments and assessments through self–study in order to earn Syracuse University credit. Please note that there is a cost per Syracuse University credit hour that families must pay if students choose to concurrently enroll. For further information, please see the Syracuse University Project Advance website (http://supa.syr.edu). To determine whether participation in this program is a fit for your long-term goals, please speak with your counselor.

ADDITIONAL SOCIAL STUDIES OPTIONS

Social Studies elective courses can fill out a high school program with courses that allow students to experience new areas of academic interest or may help in the selection of a future career path. All of these courses strengthen general study skills, particularly analytical reading, expository writing, and oral communications.

Psychology

ID: 42010 Grade: 11–12 Length: Semester
Credit: Social Studies

This course focuses on the study of the mind and behavior, beginning with a brief history of psychology and a look at the work of its principal theorists. Because technological innovations have made the structure and work of the mind more accessible in the past decade, some time is spent addressing recent findings in articles and documentaries as well as the text. Principal units include The Brain, Learning and Conditioning, Memory and Thought, Altered States of Consciousness, Intelligence, Personality Theory, Abnormal Psychology, and Nature or Nurture.

AP Psychology

ID: 42050 Grade: 11–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of B or higher in a tenth or eleventh grade social studies course is required to select this course in eleventh or twelfth grade; or current teacher recommendation.
Note: This course will be offered for the final time in 2018–19. Beginning in 2019–20, the course will be replaced with an Advanced Topic (AT) offering in psychology. Due to significant content similarities, students who take AP Psychology cannot later take the AT offering in pscyhology for credit. Students who are considering taking this course in eleventh grade are encouraged to speak with their counselors.

A student may choose Psychology or AP Psychology or both. They use different texts. What further differentiate the two are their level, duration, and purpose. AP Psychology students must be willing to pursue college level work. Students electing AP Psychology are expected to have demonstrated high academic achievement in previous course work and to be prepared for the rigor and fast pace of an AP section. Strong students are encouraged to enroll directly in AP Psychology, an advanced level course that introduces the systematic and scientific study of behavior and mental processes. History and methods, the biological basis of behavior, sensation and perception, states of consciousness, learning, thinking, motivation and emotion, development, personality, testing, intelligence, abnormal psychology, treatment, and social psychology comprise the syllabus. The eminent psychologists are surveyed. The AP Psychology course will receive a 0.25 additional GPA weighting (rather than 0.5). Students will be prepared for and strongly encouraged to sit for the AP exam in May.

MATHEMATICS

The mathematics curriculum is designed to meet the needs of students who have varying backgrounds, knowledge and skills, as well as diverse interests and career goals.

The goals of the mathematics program are:

- to provide opportunities for students to challenge themselves and to encourage them to do so,
- to provide students with options and wherever possible, keep doors open to high level math offerings,
- to ensure that all students learn what they need for college success, and where possible, advancement.

All students must earn two math credits in high school, one of which must be at the level of Geometry or higher. It is generally recommended that students take math for all four years of high school.

The math department embraces the use of technology and to this end, the TI–Nspire CX CAS calculator is prescribed for all math courses.

Highlighted below are the changes to course offerings and sequences that will be implemented in the coming year:

- The current AP Calculus BC/Multivariable Calculus course will be offered for the last time in its current form in 2018-19.
- The Functions, Statistics and Trigonometry (FST) course has been renamed Introduction to Statistics and Pre–Calculus and now provides students who excel with access to AP Calculus AB.
- In 2019–20, SAS will introduce a semester–long AP Calculus BC and a semester–long AT Multivariable Calculus and semester–long AT Linear Algebra courses to replace the year–long Multivariable/BC and Multivariable/ Linear Algebra offerings.

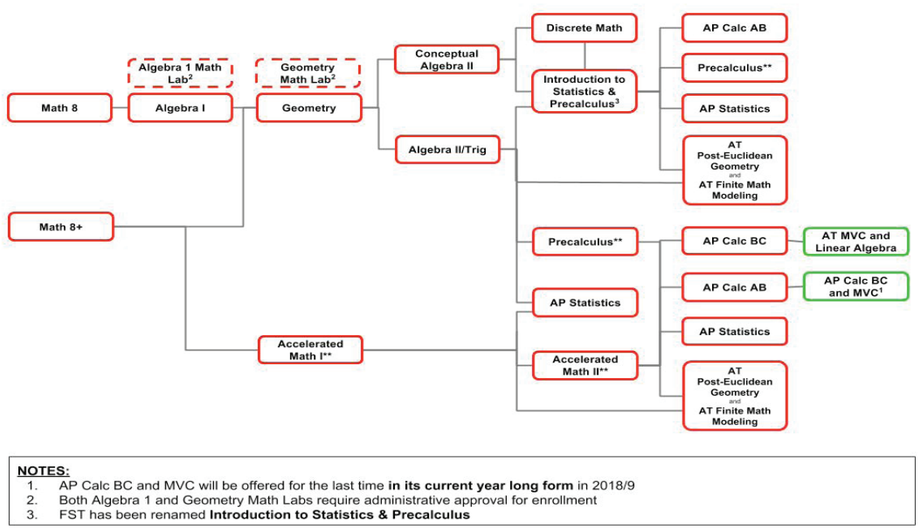
The following math department policies and practices should also be noted:

1. Students are generally able to double–up on math credits (take two courses concurrently) where they meet the prerequisites but there are two exceptions. Firstly, in order for a student to double up in Geometry and A2/T, they must obtain a recommendation from their Algebra 1 teacher and secondly, for ninth grade students, a double–up is not permitted.

2. Students looking to accelerate their math sequence are able to take a validation (skip) exam in order to bypass the next course. Students must meet the minimum grade prerequisites in order to be permitted to take the validation exam. If they are able to demonstrate the requisite knowledge in the validation exam, they will be allowed to 'skip' the course, but will not receive credit. The validation exam takes place the week before school officially starts for students.

3. New students will be placed based on the results of a placement assessment administered following admission.

HS MATH COURSE FLOWCHART



Algebra I

ID: 43003 Grade: 9–12 Length: Year
Credit: Math

This is the standard high school Algebra I course designed for students who have mastered the basic mathematics skills and concepts of Pre–Algebra. Algebra I covers linear, quadratic, rational and exponential functions, systems of inequalities and equations, and statistical analysis. The approach used will emphasize problem solving, oral and written communication, and reasoning skills. This course is aligned with Common Core Standards with a strong emphasis on technology.

Geometry

ID: 43011 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Algebra I or Algebra IB. Approval from eighth grade math teacher required to select this course in ninth grade.

This course is designed for students who have successfully completed Algebra I. Students deepen their understanding of geometric relationships, moving towards formal mathematical arguments. The course includes transformations, similarity, triangles, quadrilaterals, polygons, triangle trigonometry, circles, and area and volume of two– and three–dimensional figures. Coordinates, problem solving, and other elements of algebra are prevalent. This course is fully aligned to Common Core standards.

Geometry (Self–Paced)

ID: 43010 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Algebra I or Algebra IB. Approval from eighth–grade math teacher required to select this course in ninth grade.

This self–paced Geometry covers the same content as the more traditional Geometry course (43011), but students have the flexibility to move faster than the normal pace of the class. Students may take assessments before the normal due date but may not fall behind. Students who sign up for this course will benefit from the flexibility to plan the timing of assessments themselves but should be self–directed and strong independent learners.

Algebra II/Trigonometry

ID: 43013 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of C or higher in Geometry.

This course focuses on developing students' algebra skills and includes a full treatment of trigonometry. Algebra I topics are expanded to include polynomial, exponential, logarithmic and trigonometric functions as well as probability. Applications are integrated into all major topics. This course is fully aligned to Common Core standards.

Conceptual Algebra II

ID: 43004 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Geometry plus current Math teacher's recommendation.

This course will allow students to meet the minimum prescribed levels of Algebra required by most colleges. The course is designed to support students for whom the Algebra II/Trigonometry course is not a viable option. The course will focus on the development of the student's conceptual understanding of the Algebra II topics including elements of functions, quadratic, polynomial, exponential (and logarithmic) functions, and probability. The approach used will emphasize problem solving, oral and written communication, and reasoning skills.

Introduction to Statistics and Pre–Calculus

ID: 43007 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of B or higher in Conceptual Algebra II; or a Semester I grade of C or higher in Algebra II/Trigonometry. This course was previously named Functions, Statistics, and Trigonometry. If a credit was earned in that course, you cannot retake it under this new name.

This course focuses on further developing students' proficiency with algebra and probability, and it includes a review and extension of trigonometry topics previously learned. Students will learn about arithmetic and geometric sequences and series, extend their understanding of probability to include counting methods, expected value and probability distributions, and review

trigonometric functions and transformations with an introduction to trigonometric identities. The course also includes exploration of topics including polynomials as well as logarithmic and exponential functions. This course provides students with a solid foundation to take Pre–Calculus, AP Statistics, AT Post–Euclidean Geometry, and AT Finite Math Modelling. This course was formerly known as Functions, Statistics and Trigonometry. The revised course now provides access to AP Calculus AB to students who excel.

Accelerated Math I

ID: 43014 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Math 8+ plus approval from eighthgrade Math teacher; or Semester I grade of A or higher in Algebra I plus current teacher recommendation.

This course is designed to serve highly motivated and able math students who excelled in Math 8+ or in Algebra 1 and are looking to access the highest level math offerings at SAS. It is the first year of a two year sequence that covers key content from Geometry and Algebra II/Trigonometry. The course aims to cover a broad range of topics and will therefore be high paced and rigorous. After successfully completing both Accelerated Math I and II, students will be able to enter AP Calculus. On transcripts this course is identified as being equivalent to an honors level course.

Accelerated Math II

ID: 43015 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of B or higher in Accelerated Math I.

This course is the second year of the Accelerated Math I and II sequence. It is designed to serve highly motivated and able math students looking to access the highest level math offerings at SAS. It covers key content from Algebra II/Trigonometry and Pre–Calculus. The course aims to cover a broad range of topics and will therefore be fast paced and rigorous. After successfully completing both Accelerated Math I and II, students will be able to enter AP Calculus. On transcripts this course is identified as being equivalent to an honors level course.

Pre–Calculus

ID: 43020 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of B or higher in Algebra II/Trig or FST.

This honors level course is a prerequisite for AP Calculus BC and the recommended course of study for students planning to take AP Calculus AB. Typically, students will find this to be a higher–paced, more time–intensive and rigorous option than previous courses in the sequence. Students wishing to be successful in this course will adopt a mindset that is committed to conceptual understanding as they look to examine the common themes that link this discipline together. During the first semester they will encounter sequences and series, probability distributions, and extend their knowledge in analytical trigonometry, polar relationships, and conic sections. Throughout the second semester they will master a variety of topics essential for calculus that include polynomial optimization, rational functions and limits, modelling with the natural base, and modelling problems in motion.

Discrete Mathematics

ID: 43017 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Conceptual Algebra II or Algebra II/ Trigonometry.

This course is designed for the student who wants to continue on in mathematics and learn many real–life applications, but might not intend to pursue calculus level classes. Discrete Math students find that the topics covered in class are closely related with many things they do in other disciplines.

Discrete Mathematics provides an introduction to a variety of contemporary topics that are useful in various fields such as business and social sciences, as well as the physical and computer sciences. The topics include use of graphs to model real life applications, election theory, fair division of assets, linear programming, logic, and applications of matrices, probability and statistics. Problem-based projects will be included in the class.

AP Statistics

ID: 43040 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester 1 grade of A or higher in Accelerated Math I, Algebra II/Trig; or a B or higher in FST; or a C+ or higher in any higher level Math course.

The purpose of this course is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. The four major themes are exploring data to find patterns, planning a study, exploring random phenomena using probability and simulations, and statistical inference, including confidence intervals and hypothesis testing. AP Statistics will receive a 0.25 additional GPA weighting (rather than 0.5). Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP Calculus AB

ID: 43026 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of an A or higher in Introduction to Statistics and Pre–Calculus, plus teacher recommendation; or semester I grade of B or higher in Pre–Calculus.

This course covers topics typically found in a first–semester calculus course at US universities. The course covers limits, continuity, differentiation and integration, and their applications. Success in this course requires a solid Pre–Calculus background. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP Calculus BC

ID: 43032 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of A in Pre–Calculus.

This fast paced course covers topics usually found in the first two semesters of a first year calculus course at US universities. The course covers all of the topics in AP Calculus AB: limits, continuity, differentiation and integration, and their applications. In addition, AP Calculus BC includes: new integration techniques, polar, parametric and vector calculus and sequences and series, including Taylor series. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP Calculus BC and Multivariable Calculus

ID: 43027 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of B or higher in AP Calculus AB.
Note: This course will be offered as a full–year course for the last time in 2018–19. Beginning in 2019–20, we will offer a semester–long AP Calculus BC (designed for students who have completed AP Calculus AB) and a semester–long AT Multivariable Calculus.

In this course, students first complete the AP Calculus BC syllabus, which covers several new integration techniques and a unit on Taylor Series. The course then covers topics typically found in a second year calculus course at US universities, such as partial differentiation, multiple integration, and vector analysis. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AT Multivariable Calculus and Linear Algebra

ID: 43036 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of B or higher in AP Calculus BC.
Note: This course will be offered as a full–year course for the last time in 2018–19. Beginning in 2019–20, we will offer a semester–long AT Multivariable Calculus and a semester–long AT Linear Algebra.

This course covers topics found in typical semester–long multivariable calculus and linear algebra courses at universities. The first semester will focus on multivariable calculus including visualizing and working with functions of several variables, vectors and vector–valued functions, differentiating functions of several variables, gradients, partial derivatives, and multiple integration of several variables. Students will complete a group project aligning their skills to real world physical models, while presenting their findings to a group of experts and finish the semester with an individual project that will connect multivariable calculus with new contexts.

The second semester will focus on linear algebra including systems of linear equations and their applications, linear independence and dependence, linear transformations and their matrix representations, matrix algebra, characterizations of invertible matrices, determinants, vector spaces and subspaces, null and column spaces, as well as Eigenvalues and Eigenvectors. During the second semester, students will do projects tied to real world

applications, which may include; animation, computer graphics, animal carrying capacities, google page rankings, and transformations.

In 2017–18, this course was significantly revised by our math faculty in collaboration with a mathematics professor at Davidson College. These changes have earned the course an Advanced Topic designation. The Advanced Topic (AT) designation indicates a course is at university level, putting it at or above the level of a traditional Advanced Placement (AP) course. The course requires rigorous study and emphasizes in–depth research. Like an AP course, this course has a grade point weighting of an additional 0.5.

AT Post–Euclidean Geometry

ID: 43041 Grade: 9–12 Length: Semester 1
Credit: Math
Prerequisite: Semester I grade of A or higher in Accelerated Math I or Algebra II/Trig; or a Semester I grade of B or higher in FST; or a Semester I grade of C+ or higher in any higher level Math course. Students must also have successfully completed a HS Geometry course or equivalent.

This elective course is designed for students who seek further advanced study and applications beyond the Geometry course, involving concepts acquired in Algebra II/Trigonometry. Topics will include non–Euclidean geometries, further work with transformations and constructions, and higher level work with conic sections. Project–based learning will be prevalent, involving real–world applications, such as the shapes of satellite dishes, origami, animation design, and the spherical geometry of the Earth. This course was collaboratively developed and endorsed by a professor at Grand View University. The AT designation indicates a course is at university level, putting it at or above the level of a traditional AP course. The course requires rigorous study and emphasizes in– depth research. Like an AP course, this course has a grade point weighting of 0.5 for the duration of the course.

AT Finite Math Modeling

ID: 43042 Grade: 9–12 Length: Semester II
Credit: Math
Prerequisite: Semester I grade of A or higher in Accelerated Math I or Algebra II/Trig; or a Semester I grade of B or higher in FST; or a Semester I grade of C+ or higher in any higher level Math course.

This elective course is designed for students who seek high level applications of math to real life situations. Mathematics will be used to explain and analyze elections, fair allocation of resources, and scheduling. Mathematical models will be used based on matrices, game theory, and graph theory. Project–based learning will be prevalent, involving real–world applications, such as perceived rewards, transportation networks, different systems of voting, and critical path schedules. This course was collaboratively developed and endorsed by a professor at Grand View University. The AT designation indicates a course is at university level, putting it at or above the level of a traditional AP course. The course requires rigorous study and emphasizes in–depth research. Like an AP course, this course has a grade point weighting of 0.5 for the duration of the course.

SCIENCE

Scientifically literate individuals possess both a knowledge of facts and an understanding of concepts from a wide range of scientific disciplines. They should also have the opportunity to develop, through experimentation, the process skills that encourage and enable continuous learning and critical thinking. The goal is to develop scientifically literate individuals who understand and appreciate the interrelationships of science, technology, and society. All courses incorporate technology based laboratories (including graphical analysis software) and interactive resources.

All SAS ninth graders must enroll in a biology course. Tenth graders must enroll in a physical science course—usually chemistry. Nearly all SAS graduates complete three years of science, with most earning four or more science credits.

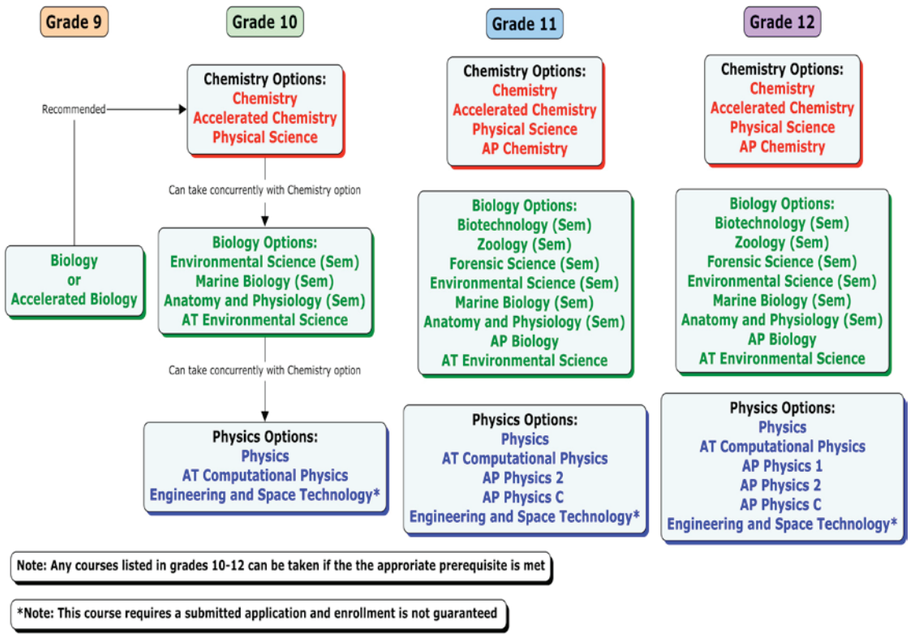
New high school students arriving from an "integrated science" program typically enroll in Biology, Accelerated Biology, or Chemistry if arriving in ninth or tenth grades. After completing two years of an integrated science program, Accelerated Biology, Accelerated Chemistry, or Physics are the typical choices.

LIFE SCIENCES

Biology

ID: 44005 Grade: 9–11 Length: Year
Credit: Life Science

Biology at SAS is a full–year, college–preparatory curriculum based on the Next Generation Science Standards (NGSS). As the course centers on the study of the living world, it is of special relevance and accessibility to students. Students will learn to use and improve their science processing skills in order to solve problems. Laboratory and field based investigations will allow students to have first–hand experience with modern methods of analysis. There are five life science topics in high school as outlined by NGSS: (1) Structure and Function, (2) Inheritance and Variation of Traits, (3) Matter and Energy in Organisms and Ecosystems, (4) Interdependent Relationships in Ecosystems, and (5) Natural Selection and Evolution. The NGSS performance expectations for high school life sciences blend core ideas with science and engineering practices and cross–cutting concepts to support students in developing usable knowledge that can be applied across the science disciplines.



Accelerated Biology

ID: 44008 Grade: 9–12 Length: Year
Credit: Life Science
Prerequisite: Approval from eighth grade science teacher is required to select this course in ninth grade. Note: This course was previously named Molecular Biology. If a credit was earned in that course, you cannot retake it under this new name.

Accelerated Biology is a rigorous course that follows the Next Generation Science Standards, is taught at a faster pace, and requires more critical reading and daily work than Biology. This course will be of particular interest to those who are interested in pursuing a college major or career in scientific fields such as medicine, engineering, or the pure sciences. There are five life science topics in high school as outlined by NGSS: (1) Structure and Function, (2) Inheritance and Variation of Traits, (3) Matter and Energy in Organisms and Ecosystems, (4) Interdependent Relationships in Ecosystems, and (5) Natural Selection and Evolution. The NGSS performance expectations for high school life sciences blend core ideas with science and engineering practices and cross–cutting concepts to support students in developing usable knowledge that can be applied across the science disciplines. Laboratory and field based investigations will allow students to have first–hand experience with modern methods of analysis built around computer-based probeware. Students enrolling in this course should be able to read at or above grade level and should have demonstrated high levels of achievement in previous science courses. On students' transcripts, this course is designated as being equivalent to an honors course.

Biotechnology

ID: 44016 Grade: 11–12 Length: Semester
Credit: Life Science

Biotechnology is designed for students with at least one year of biological science, who are prepared for an in–depth study of the scientific foundations and technological applications of genomic and protein biotechnology. The course emphasizes laboratory techniques and exposes students to a variety of fields including microbiology, cell biology, genetics, bioinformatics, and bioengineering. Students need a solid understanding of DNA structure and replication, protein synthesis, and gene control mechanisms. It is an excellent course for students who are considering careers in any biological science field, such as genetics, biomedical engineering, or biomedical research.

Environmental Science

ID: 44022 Grade: 10–12 Length: Semester
Credit: Life Science
Prerequisite: Concurrent enrollment in Chemistry or Accelerated Chemistry is required to select this course in tenth grade.

Environmental Science is a study of the interrelationships between man, other living things and the environment. Students will study all of the components of our environment and their interactions, and will seek to understand man's impact on the environment and discover ways by which we can minimize these impacts. Laboratory and field based investigations into some of these impacts will allow students to have first–hand experience with modern methods of environmental quality analysis built around computer-based probeware. This course is an applied science course in that it seeks to discover solutions to the most urgent problems facing human society today: the interrelated problems of population, resources, and pollution.

Forensic Science

ID: 44017 Grade: 11–12 Length: Semester
Credit: Life Science

In this course students will learn the real science behind the various laboratory techniques used when analyzing physical evidence from a crime scene. Students will be exposed to various academic fields including photography, mathematics, medicine, and entomology. Laboratory skills combined with basic forensic science procedures will be applied to topics as diverse as: analyzing fingerprints, DNA, blood, shoe and tire evidence, hair and fiber evidence, autopsy, and time of death estimation using insects.

Marine Biology

ID: 44021 Grade: 10–12 Length: Semester
Credit: Life Science
Prerequisite: Concurrent enrollment in Chemistry or Accelerated Chemistry is required to select this course in tenth grade.

This introductory course will explore the fundamentals of oceanography, the biology and diversity of marine organisms, and the patterns and processes that guide the ecological dynamics in various marine communities. The course will give students a general background in the taxonomy of marine organisms as well as the specific adaptations these organisms have evolved to survive in the ocean. Students will also be introduced to various marine ecosystems and the organisms that inhabit them. Laboratory and field based investigations will allow students to have first–hand experience with modern methods of analysis built around computer–based probeware.

Anatomy and Physiology

ID: 44010 Grade: 10–12 Length: Semester
Credit: Life Science
Prerequisite: Biology or Accelerated Biology

This course is designed for students interested in learning the important principles behind human movement, energetics, health, and disease. The course focuses on the form and function of the musculoskeletal system and how it is powered by the body's metabolism. Prior knowledge of cell communication and physiology will be leveraged to gain a more thorough understanding of the integration of different body systems, while examining the impact of modern living on our physiology. Students will be asked to challenge their bodies with varied activities such as muscular strength and modified VO2 max tests to further understand how their body responds to applied stresses. Students are expected to devise and conduct a scientific research study during the course in lieu of a final exam.

Zoology

ID: 44013 Grade: 11–12 Length: Semester
Credit: Life Science

Zoology is a lab–based course that emphasizes the principles of animal biology and an account of the major types and groups of animals from protozoans to vertebrates. The discussion of each animal type includes an account of its structure and bodily processes together with a summary of its habits and reproduction. Relations of animals to their natural environment and their importance to humans also receive consideration. The broader aspects of animal biology are studied; namely, anatomy, physiology (evolutionary relationships), and ecology.

AT Environmental Science and Field Research

ID: 44036 Grade: 10–12 Length: Year
Credit: Life Science
Prerequisite: Semester I grade of B+ or higher in Accelerated Biology plus concurrent enrollment in a chemistry class is required to select this course in tenth grade. Semester I grade of B or higher in Biology or Accelerated Biology, plus Semester I grade of B+ or higher in Chemistry or B or higher in Accelerated Chemistry are required to select this course in eleventh or twelfth grades.

This course offers an intensive, year–long inquiry into the integration of nature, society, economy, and wellness. Grounded in science, students in the class will explore a wide range of environmental issues both natural and human–made. It is designed for students who already have a solid grasp of biological and chemical sciences and can demonstrate a passion for examining solutions and alternatives for resolving, decreasing, and preventing environmental problems. The course will feature a variety of units to develop an understanding of the 17 UN Sustainable Development Goals through investigation of ecological services, the value of biodiversity and natural resources, and creative work toward the collaborative reduction of human ecological and carbon footprints. Students will develop insights into global cultures in less and more economically developed societies and build empathy for myriad worldviews through role–playing and panel debates on hot–topic issues. Fieldwork investigations will take students out of the classroom into regional terrestrial and aquatic ecosystems to conduct field research culminating in a college–level co–authored paper. Science and engineering practices will be applied through collaborative lab work and analysis of environmental quality, to determine ecosystem integrity. Students will be prepared to take the College Board AP Environmental Science exam. The AT portion of this course was collaboratively developed and endorsed by a tropical rainforest ecologist at Nanyang Technological University. The AT designation indicates a course is at the university level, putting it at or above the level of a traditional AP course. This course has a grade point weighting of 0.5.

AP Biology

ID: 44027 Grade: 11–12 Length: Year
Credit: Life Science
Prerequisite: Semester I grade of B or higher in Biology or Accelerated Biology, plus a Semester I grade of B+ or higher in Chemistry or B or higher in Accelerated Chemistry.

AP Biology is designed for students who are interested in higher studies in biological sciences, engineering, medicine, or related disciplines. This course will examine the four big biological ideas of Evolution, Energy, Information, and Interaction by looking at topics such as molecular and cellular biology, physiology of plants and animals, heredity, ecology, and evolution. While biological knowledge and concepts will be taught, students will approach the material from the perspective of science practices such as modeling, mathematical analysis, scientific questioning, experimental design and execution, data analysis and evaluation, and conceptual connections. Biological concepts will be examined through laboratory exercises that focus on inquiry and investigation. Throughout this course students will improve their capacities for problem solving and critical thinking, preparing them for further study in the biological sciences. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

Physical Science

ID: 44006 Grade: 10–12 Length: Year
Credit: Physical Science
Prerequisite: Biology or Accelerated Biology

This course will provide students with a fundamental knowledge of physical science while developing an understanding of their importance to society. Essential concepts of chemistry and physics are introduced in an engaging inquiry approach; without emphasizing applications involving Math. The course is a broad–based course integrating, among other topics, health science, technology applications, earth science, and global issues; with the common thread being physical science. The course stresses analytical skills that are vital for any student to be successful in science; ultimately placing responsibility for learning on students themselves as they explore individually and in groups how physical science concepts apply to their everyday lives. In addition to traditional laboratory work, students will be involved in a variety of technology centered decision–making activities and projects.

Chemistry

ID: 44014 Grade: 10–12 Length: Year
Credit: Physical Science
Prerequisite: Biology or Physical Science, plus completion of Algebra I or higher level Math course.

This course models the fundamental laws of chemistry, kinetic molecular theory, and atomic structure to make qualitative and quantitative representations and predictions about chemical processes. The first semester addresses student misconceptions of the particle model of matter in specific relation to conservation laws, the behaviour of gases, and energy transfer. The second semester builds on these concepts and focuses on quantifying chemical reactions using masses, gases and solutions. The year concludes as we look deeper into acids, bases, and equilibrium. The course encourages problem–solving, inquiry, and communication with an emphasis on graphs, diagrams, written explanations, and calculations.

Accelerated Chemistry

ID: 44023 Grade: 10–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of B+ or higher in Biology, plus completion of Geometry or higher level math course; or a Semester I grade of B or better in Accelerated Biology, plus completion of Geometry or higher level Math course.

Accelerated Chemistry is an introductory chemistry course designed for above–average students, in particular those who intend to pursue further science courses leading to a science–related career. It is a rigorous course in which students are expected to be able to read and comprehend technical material at or above grade level. The course presents contemporary ideas of chemistry based heavily on laboratory experiences done by both traditional methods and by the use of laptop–based probeware. Energy, stoichiometry, periodicity, chemical bonding and molecular geometry, chemical thermodynamics, chemical kinetics, equilibrium, and quantum mechanics are all examined. On transcripts, this course is designated as being equivalent to an honors course.

AP Chemistry

ID: 44031 Grade: 11–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of A or higher in Chemistry, plus either current teacher recommendation or Semester 2 grade of A or higher in Chemistry; or Semester I grade of B or higher in Accelerated Chemistry.

AP Chemistry is a rigorous, college–level course specifically intended for students who plan higher studies in science, engineering, or medicine. Topics studied include atoms and forces, kinetics, equilibrium, thermodynamics, quantum mechanics, and periodicity, electrochemistry, and gaseous behavior. Laboratory work involves careful measurements and applications of theory to explain and/or predict the behavior of chemical systems. Laboratory work will include both traditional and probeware–based experiences. The subject matter in this course is presented with an emphasis on both chemical calculations and the conceptual foundation of chemical principles, so a strong mathematics background is imperative. Students will be expected to demonstrate the ability to read and comprehend sophisticated material from college level textbooks and journals and to summarize concepts. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP Chemistry (Self–Paced)

ID: 44024 Grade: 11–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of A or higher in Chemistry, plus either current teacher recommendation or Semester 2 grade of A or higher in Chemistry; or Semester I grade of B or higher in Accelerated Chemistry.

This self–paced AP Chemistry covers the same content as the more traditional AP Chemistry course (44031), but students have the flexibility to move faster than the normal pace of the class. Students may take assessments before the normal due date but may not fall behind. Students who sign up for this course will benefit from the flexibility to plan the timing of assessments themselves but should be self–directed and strong independent learners.

Physics

ID: 44015 Grade: 10–12 Length: Year
Credit: Physical Science
Prerequisite: Algebra II or higher Math course

Physics is a math–oriented, problem–solving, laboratory–based approach to physics. It is designed for the student who intends to pursue further science courses. Through laboratory experiences and problem–solving activities, this course will treat each major area of physics in some detail, including mechanics, waves and light, and electricity. Students will use creative problem solving and technology to gather, analyze, and present data and conclusions about the physical world around them.

Engineering and Space Technology

ID: 44038 Grade: 10–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of B or higher in Accelerated Chemistry; or Semester I grade of B+ of higher in Chemistry; or current science teacher recommendation.
Note: This course is highly student–led. Students will be required to apply for enrollment so that we can balance the needed skill sets for our team. Experience in physics, computer science, leadership, or engineering are beneficial though not necessary to apply.

In this course, students will design and engineer an experiment that will run aboard the International Space Station. The environment of the ISS—a combination of microgravity and periods of high radiation exposure—presents a unique opportunity for students to further scientific understanding. Students will research science in a project–based environment, tying together fields and skills such as electrical engineering, computer science, materials engineering, finance, design, strategic networking, and more. The end product will contribute to scientifically significant research related to space. With a number of constraints, including size and energy use, students will think critically and work creatively to imagine, design, and build their experiment. The course is highly student–led, and requires investment in the process of design and learning by doing. Students can expect to work collaboratively and intensively and should be highly motivated in the sciences.

AT Computational Physics

ID: 44050 Grade: 10–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of A in Algebra II; or completion of Algebra II/Trig or higher level Math course.
Note: This course offers students options to pursue possible university credit.

This is an introductory college–level course in physics that will also incorporate coding using vPython and mathematical modeling using Excel. The first three quarters of the year will be dedicated to learning the introductory concepts ideas of classical mechanics as well as an introduction to coding. Students will learn physics theory, perform experiments and compare their experimental results to the data predicted via modeling. The last quarter of the year is dedicated to an individualized, student–initiated and designed advanced project using and applying the physics and computer generated data. The AT designation indicates a course is at university level, putting it at or above the level of a traditional AP course. The course requires rigorous study and emphasizes in–depth research. Like an AP course, this course has an additional grade point weighting of 0.5 for its duration.

Students taking this course may choose to sit the AP Physics 1 exam in May. Should students choose to do so, they will need to self–study one unit and independently prepare for the AP exam.

In addition, the content of this course meets the criteria for a Syracuse University physics course (SUPA PHY 101). Therefore, AT Computational Physics students may elect to earn Syracuse University credit by concurrently enrolling in SUPA PHY 101. Students must enroll in the Syracuse University system at the beginning of AT Computational Physics and successfully complete the applicable assessments in order to earn the Syracuse University credit. Please note that there is a cost per Syracuse University credit hour that families must pay if students choose to concurrently enroll. For further information, please see the Syracuse University Project Advance website (http://supa.syr.edu). To determine whether participation in this program is a fit for your long–term goals, please speak with your counselor.

AP Physics 1

ID: 44032 Grade: 12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of A in Algebra II; or completion of Algebra II/Trig or higher level Math course.
Note: In 2018–19, the course will be offered for the final time and is available only to seniors. Beginning in 2019–20, SAS will no longer offer AP Physics 1.

AP Physics 1 is an introductory algebra–based physics course that gives students an exposure to Newton's laws (kinematics, dynamics, uniform circular motion, gravity, rotation, oscillations), conservation laws (momentum, energy, work), mechanical waves (traveling waves, sound), electrostatics, and electric circuits. Additionally the course will include further topics such as electromagnetism to better prepare students who plan on taking AP Physics C in the following year. There will more time for hands–on explorations of physics content and inquiry labs. Investigations will require students to ask questions, make observations and predictions, design experiments, analyze data, and construct arguments in a collaborative setting. The course is based on six Big Ideas, which encompasses core scientific principles, theories, and processes that cut across traditional boundaries and provide a broad way of thinking about the physical world.

AP Physics 2

ID: 44033 Grade: 11–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of B or higher in AP Physics 1 or AT Computational Physics; or Semester I grade of B+ or higher in Physics, plus completion of Chemistry, completion of Accelerated Chemistry, or concurrent enrollment in Accelerated Chemistry.

AP Physics 2 is equivalent to a second–semester college course in algebra–based physics. The course covers fluid mechanics, thermodynamics, electricity and magnetism, waves and optics, and modern (atomic, nuclear and quantum) physics. Similar to Physics, AT Computational Physics, AP Physics 1, this course will allow students to achieve an in–depth understanding of the above additional topics using hands–on explorations of physics content and inquiry–based instructional strategies. In AP Physics 2, they will build on their existing understandings by using multiple representations of physical processes, solving multi–step problems, and designing investigations. The course is based on six Big Ideas, which encompasses core scientific principles, theories, and processes that cut across traditional boundaries and provide a broad way of thinking about the physical world. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP Physics C

ID: 44030 Grade: 11–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of B or higher in AP Physics 1 or AT Computational Physics; or Semester I grade of B+ or higher in Physics, plus completion or concurrent enrollment in AP Calculus AB or AP Calculus BC.

AP Physics C is a rigorous calculus–based physics course for those students planning on higher studies in science or engineering. It is equivalent to an introductory college–level physics course for science majors. The first semester covers the following topics in Newtonian mechanics: the laws of motion, energy, momentum, oscillations, and gravitation. Topics in the second semester include electricity and magnetism: electrostatics (including Gauss's Law), electric circuits, magnetostatics (including Ampere's Law) and electromagnetism (including Faraday's Law) and Maxwell's equations. Students who are successful in this course are prepared to sit for both portions of the AP Physics C examination. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

WORLD LANGUAGES

The SAS World Language program offers instruction in three different languages: Chinese (Mandarin, taught using simplified Chinese characters), French, and Spanish. In alignment with our K–12 program philosophy, we believe that the primary purpose of learning another language is to develop the ability to communicate effectively in real–life contexts. The goal of the World Language program, therefore, is to establish an understanding of the respective cultures and to develop language proficiency through a focus on communicative ability—in other words, a focus on what students are able to do with the language, beyond what they know about the language. Courses are taught in the target language beginning in all our Novice courses.

Interpersonal listening and speaking skills are a key component of our program and are the primary focus in our Novice and Intermediate courses, as these are the skills that are most important in the first stages of learning a language. In the Intermediate High and Advanced courses, while students continue to develop their interpersonal listening and speaking skills, increasing attention is given to the development and assessment of the interpretive skills (listening and reading), as well as presentational communication (speaking and writing).

Course names and design refer to the proficiency level being targeted by the end of each course (year–long or multi–year). It is necessary for students to reach the performance benchmarks before advancing to the next level because, as their language ability develops, their needs change, and, as such, instructional focus changes. The multi–year courses (e.g., Intermediate, Intermediate High) are designed to allow students to take the time they need to build greater confidence and consistency in their language abilities, while they experience new culturally–rich thematic units over a period of two to three years. Research and past practice have shown this to be the amount of time commonly required in order to achieve the performance targets indicated.

Students who have learned one of the three languages offered at SAS at home or as a second language in a target–language country will be assessed and may be advised to maintain the language on their own.

Two years of study of the same foreign language or the equivalent (e.g., Chinese/French/Spanish: Novice, Intermediate) proficiency is the minimum SAS graduation requirement. Since most colleges and universities include language study as an admission requirement, students are advised to attain at least an Intermediate–Mid level of proficiency. This level is generally acquired in three to four years of language study.

SEAL OF BILITERACY

Beginning with the graduating Class of 2019, the high school will offer the Seal of Biliteracy to qualified students. The Seal of Biliteracy serves to certify attainment of biliteracy for students and is awarded on high school diplomas. It is a formal statement of accomplishment and language proficiency, and it is awarded in the 31 US states that have already approved Seal of Biliteracy legislation as of February 1, 2018 (http://sealofbiliteracy.org/). It will be awarded in the three languages that are taught at SAS: Chinese, French, and Spanish.

In order to earn a Seal of Biliteracy at SAS, students must demonstrate a minimum of Intermediate High proficiency in all four skills: reading, writing, listening, and speaking. Proficiency will be gauged using school–determined standardized assessments. Families are responsible for paying any costs associated with taking these assessments. Students who are interested in pursuing the Seal of Biliteracy and who have completed the tenth grade may submit an application to the SAS Director of World Languages.

SPANISH, FRENCH, AND CHINESE

NOVICE

This year–long course is for students who have little or no experience with the language. It provides them with the necessary skills to understand and create meaningful communication from early on in a supportive and rich environment. This course focuses on the development of listening and speaking through interpersonal communication, and the performance exit target is Novice–High.

Novice–High speakers can manage a number of uncomplicated communicative tasks in straightforward social situations. They can express personal meaning by relying heavily on learned phrases (memorized language) or recombinations of these, as well as respond to simple, direct questions or request for information.

The skills of writing, plus interpretive listening and reading, are also integrated into the course to the extent that they foster the development of students' communicative ability as appropriate to the performance target.

Novice Courses

ID: 45040	*Spanish: Novice*
ID: 45050	*French: Novice*
ID: 45060	*Chinese: Novice*

Grade: 9–12 Length: Year Credit: Language

INTERMEDIATE

This multi–year course is for students who have reached at least a Novice–High level of performance in interpersonal listening and speaking. It is possible that students performing at the Novice–Mid level could be considered for admission with teacher recommendation.

With differentiation and new culturally rich thematic units each year, teachers engage and support students at whichever stage they are in the proficiency building process. This course focuses on interpersonal listening and speaking, and the performance exit target is Intermediate –Mid.

Intermediate–Mid speakers are able to successfully handle a variety of uncomplicated communicative tasks in straightforward social situations. They can express their own thoughts and maintain conversations by asking and answering a variety of questions, allowing them to exchange information about family, home, daily activities, interests, and personal preferences, as well as physical and social needs, such as food, shopping, and travel. This performance target is most commonly achieved over a period of two to three years.

The skills of writing*, plus interpretive listening and reading, are also integrated into the course to the extent that they foster the development of students' communicative ability as appropriate to the performance target.

*Intermediate Chinese courses will also include development and assessment of presentational speaking skills.

All Intermediate courses require a recommendation from the student's current language teacher. Students who are new to SAS will be assessed upon their arrival.

Intermediate Courses

ID: 45041	*Spanish: Intermediate*
ID: 45042	*Spanish: Intermediate II*
ID: 45043	*Spanish: Intermediate III*
ID: 45051	*French: Intermediate*
ID: 45052	*French: Intermediate II*
ID: 45053	*French: Intermediate III*
ID: 45061	*Chinese: Intermediate*
ID: 45062	*Chinese: Intermediate II*
ID: 45063	*Chinese: Intermediate III*

Grade: 9–12 Length: Year Credit: Language

INTERMEDIATE HIGH

This multi–year course is for students who have reached an Intermediate–Mid level of performance in interpersonal listening and speaking.

With differentiation and new culturally rich thematic units each year, teachers engage and support students at whichever stage they are in the proficiency building process. While this course continues to emphasize interpersonal listening and speaking, interpretive listening and reading, and presentational writing*, are more formally developed and assessed. For French and Spanish the performance exit target for each of these skills is Intermediate High. For Chinese, while the performance exit target is Intermediate High in listening and speaking, the exit target for reading and writing is Intermediate Mid.

Intermediate–High speakers are able to successfully handle uncomplicated tasks and social situations requiring an exchange of information about their school, recreation, particular interests, and areas of competence. They also demonstrate an increasing ability to express their own ideas about some topics beyond themselves (current events/ issues, matters of public, and community interest), and to resolve problems they might encounter in their daily lives. They aim to narrate and describe in three major time frames—present, past, and future—and mostly in connected paragraphs. This performance target is most commonly achieved over a period of two to three years.

*Intermediate–High Chinese courses will also include development and assessment of presentational speaking skills

All Intermediate–High courses require a recommendation from the student's current language teacher. Students who are new to SAS will be assessed upon their arrival.

Intermediate High Courses

ID: 45044 Spanish: Intermediate High
ID: 45045 Spanish: Intermediate High II
ID: 45046 Spanish: Intermediate High III

D: 45054 French: Intermediate High
ID: 45055 French: Intermediate High II
ID: 45056 French: Intermediate High III

ID: 45064 Chinese: Intermediate High
ID: 45065 Chinese: Intermediate High II
ID: 45066 Chinese: Intermediate High III

Grade: 9–12 Length: Year Credit: Language

ADVANCED

Advanced–level courses are for students who have reached at least an Intermediate–High performance level in interpersonal listening and speaking, interpretive listening and reading, and presentational writing. They should be able to express themselves orally and in writing in three major time frames—present, past, and future—and mostly in connected paragraphs. As well, they should be able to handle some topics beyond themselves (current events/issues, matters of public and community interest). These courses focus on all modes of communication—interpersonal, presentational, and interpretive and the performance target is at least Advanced Low for each.

Advanced–Low speakers are able to handle a variety of communicative tasks. They are able to participate in most informal and some formal conversations, including some topics related to current events, and matters of public and community interest. Advanced–Low writers can meet basic academic writing needs and compose texts of paragraph length and structure.

All advanced courses require a recommendation from the student's current language teacher. On students' transcripts, advanced courses are designated as being equivalent to an honors level course. Students who are new to SAS will be assessed upon their arrival.

Spanish: Advanced

ID: 45047 Grade: 9–12 Length: Year
Credit: Language
Prerequisite: Current teacher recommendation

Advanced Spanish is a one–year advanced–level course offered as an opportunity to further develop language skills. This course will continue to focus on spoken and written expression, including presentational speaking, while developing higher–level comprehension skills through culturally rich thematic units. It will also allow students to gain a deeper understanding and appreciation of Hispanic language and culture (products, practices, and perspectives). On students' transcripts, advanced courses are designated as being equivalent to an honors level course.

Chinese: Advanced

ID: 45070 Grade: 9–12 Length: Year
Credit: Language
Prerequisite: Current teacher recommendation

Advanced Chinese is a one–year advanced–level course offered as an opportunity to further develop language skills. This course will continue to focus on spoken and written expression, including presentational speaking, while developing higher–level comprehension skills through culturally rich thematic units. It will also allow students to gain a deeper understanding and appreciation of Chinese language, history, and culture. On students' transcripts, advanced courses are designated as being equivalent to an honors level course.

AP AND AT OPTIONS

AP Spanish Language and Culture

ID: 45024 Grade: 10–12 Length: Year
Credit: Language
Prerequisite: Current teacher recommendation
Note: Beginning in 2019–20, students who have completed at least one year in the Intermediate High course will be able to select this course in twelfth without a teacher recommendation. A teacher recommendation will still be required to select this course in gtenth and eleventh grades.

This AP course is comparable to a fourth-semester college course in Spanish. The course prepares students to demonstrate their level of Spanish proficiency with a higher degree of accuracy and fluency across the three communicative modes: spoken and written interpersonal communication; audio, visual and audiovisual interpretive communication; and spoken and written presentational communication. Students will also hone their ability to comprehend and communicate in formal and informal contexts reflective of the richness of Hispanic language and cultures. Instructional materials and activities are carefully and strategically adapted from authentic sources to support the linguistic and cultural goals of the course. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP French Language and Culture

ID: 45023 Grade: 10–12 Length: Year
Credit: Language
Prerequisite: Current teacher recommendation
Note: Beginning in 2019–20, students who have completed at least one year in the Intermediate–High course will be able to select this course in twelfth grade without a teacher recommendation. A teacher recommendation will still be required to select this course in tenth and eleventh grade.

This AP course is comparable to a fourth-semester college course in French. The course prepares students to demonstrate their level of French proficiency with a higher degree of accuracy and fluency across the three communicative modes: spoken and written interpersonal communication; audio, visual and audiovisual interpretive communication; and spoken and written presentational communication. Students will also hone their ability to comprehend and communicate in formal and informal contexts reflective of the richness of Francophone language and cultures. Instructional materials and activities are carefully and strategically adapted from authentic sources to support the linguistic and cultural goals of the course. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP Chinese Language and Culture

ID: 45025 Grade: 10–12 Length: Year
Credit: Language
Prerequisite: Current teacher recommendation
Note: Beginning in 2019–20, students who have completed at least one year in the Intermediate–High course will be able to select this course in twelfth grade without a teacher recommendation. A teacher recommendation will still be required to select this course in tenth and eleventh grade.

AP Chinese is designed to be comparable to fourth semester university courses in Mandarin Chinese. The course prepares students to demonstrate their level of Chinese proficiency across the three communicative modes (interpersonal, interpretive, and presentational) and the five goal areas (communication, cultures, connections, comparisons, and communities). Students are provided with ongoing and varied opportunities to further develop their proficiencies across the full range of language skills within a cultural frame of reference. Materials and activities are adapted from authentic sources to support the linguistic and cultural goals of the course. Both contemporary and historical Chinese culture are explored. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AT Chinese Language: History

ID: 45029 Grade: 11–12 Length: Year
Credit: Language
Prerequisite: Demonstrated proficiency levels of Advanced Low or higher in all four skills.

This inquiry and project–based course will provide students with the opportunity to gain deeper understanding of the significance of key historical periods in Chinese history, while developing their advanced Chinese language proficiency. The course is also designed for students to identify their interests in specific areas of Chinese history and culture and delve into the process of researching, analysing, and reevaluating existing perceptions or stereotypes, to draw their own evidence–based conclusions of the significance of some historical phenomena. Students will be expected to complete a comprehensive project related to their own areas of interest each semester. The course will include an extended essay and oral presentation based on their research to demonstrate the final learning outcomes. The course was collaboratively developed and endorsed by a professor at East China Normal University in Shanghai, China. The AT designation indicates a course is at university level, putting it at or above the level of a traditional AP course. The course requires rigorous study and emphasizes in–depth research. Like an AP course, this course has a grade point weighting of 0.5.

TECHNOLOGY, ELECTIVES AND CAPSTONE

Technology, Electives, and Capstone (TEC) courses prepare students for the real world. Students will develop critical thinking skills, often utilizing hands on, project–based experiences in these courses. They will have opportunities to explore their own interests, while blending core academic course knowledge and applications with authentic, creative demands. Please check the grade level requirements for each course. Some are only open to students in certain grades or those who have met specific prerequisites.

Beginning with the Class of 2018, all students must complete the SAS Catalyst Project as a requirement for graduation.

COMPUTER SCIENCE AND EMERGING TECH

Emerging Technologies

ID: 44501 Grade: 9–11 Length: Sem or Year
Credit: Elective

This semester–long survey course gives primarily underclassmen a view into design, digital fabrication, coding, and graphics at an entry level. Students explore a wide range of fundamental hands–on skills including digital sketching, fabrication using the laser cutter and 3D printer, basic app development and the interconnection of computing devices. The course is deliberately broad, spanning many of the design and technology courses currently taught at SAS, and for this reason is a good entry point into more specialized courses offered at the junior and senior level. This course is a recommended for students who have an interest in learning through discovery and working in teams while solving reality–based problems through design thinking. Students build on this course to later study 2D and 3D Graphics, Robotics, and Game Development. Students may take the course a second time if they wish to expand the knowledge, skills, and projects that they began developing during their first semester experience.

Computer Science I

ID: 44518 Grade: 9–12 Length: Semester
Credit: Elective
Prerequisite: Algebra 1 or Math 8+

This course provides an introduction to coding and computer science principles. Students will use computational thinking strategies to design, write, and test programs in Java object oriented programming, serving as an introduction to AP Computer Science), Alice (3D animation and game programming), and to design logic circuits (how computers work at the lowest levels). This hands–on course will give students the opportunity to appreciate and understand the depth at which businesses, engineering, and our daily interactions are dependent on computer science. Students learn by carefully designing a solution (algorithm) to problems, programming, and testing/debugging. This course is designed as an exciting and unintimidating jumping off point for those who want to understand what computer science and programming are all about and how they relate to the technological world in which we live. No prior knowledge of Java or programming is required. Successful completion of the course will fulfill the prerequisite for AP Computer Science.

Mobile Application Development

ID: 44504 Grade: 9–12 Length: Semester
Credit: Elective

Tablet, phones, and computers all have migrated to the use of specialized programs called Applications or "Apps." This course is designed to give students with no programming experience the opportunity to develop marketable Android mobile apps using the new Google App Maker application. Features like built–in templates, a drag–and–drop UI editor, and point–and–click data modeling let you quickly create beautiful apps. This course will be taught at the introductory level without any advanced concepts offered. Therefore, students with prior programming courses, or advanced programming skills are not allowed to select this course.

Graphic Design

ID: 44527 Grade: 10–12 Length: Semester
Credit: Elective

Graphic design is a part of daily life. From humble things like gum wrappers to huge things like billboards to the t–shirts people wear, graphic design is used to convey a message from a client to an audience. In this course students will learn how to use graphic design to inform, persuade ,and attract attention by creating and organizing the elements of typography, images, and the white space around them. Students will complete a variety of authentic projects that includes but is not limited to the design of posters and brochures. They will gain a solid foundation in the use of Adobe Illustrator, Photoshop, and InDesign. This course is a complement to the Newspaper and Yearbook courses.

Digital Game Development

ID: 44517 Grade: 10–12 Length: Semester
Credit: Elective

Games have been around for a very long time (consider the game Senet played by the ancient Egyptians). Games were used as ways to develop physical skills (consider throwing objects at targets) or training to develop military strategies (chess?) or to simply kill time while waiting for the crops to grow. Of course, creating games, and especially video games, requires more than just an idea of something that would be fun. Designers have to understand the mechanics of games, test the balance of the rules to ensure that all players have an equal opportunity to win, communicate how the game is played, and create the environment that will be used to play the game—whether a board game with dice or a computer. This course will cover the basic game development process, from design process through to playable digital and non–digital games. This will include study of game design mechanics and principles of the game design process (e.g., play balancing, testing), basic computer programming concepts, and concepts and production processes of game-related art, including background design, character design, and user interface design. Students will gain a very good sense of the game development process and the various creative and technical aspects involved.

ADVANCED OPTIONS

AP Computer Science

D: 44519 Grade: 10–12 Length: Year
Credit: Elective
Prerequisite: Semester I grade of B or higher in Algebra II/Trig or higher level math course; or Semester I grade of B or higher in Computer Science I; or concurrent enrollment in Algebra II/Trig or Accelerated Math II plus computer science teacher recommendation.

AP Computer Science is a full–year course designed to teach the fundamentals of programming with the Java programming language. It is designed as an accelerated first course in computer science or as a course for people who will major in other disciplines requiring significant involvement with computing. Prior knowledge of programming is not essential; although logic, math, and linguistic skills along with a strong core GPA are good indicators of success. AP Computer Science emphasizes programming methodology with a concentration on problem solving, algorithm development, object orient programming, and computational thinking principles. A large part of the course is built around the design, creation, and testing of computer programs or parts of programs that correctly solve a given problem. This year–long course is identical to a first semester programming course taught at most universities; therefore, students are expected to commit to a daily schedule of programming and studying activities. AP Computer Science will receive a 0.25 additional GPA weighting (rather than 0.5). Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AT Computer Science: Data Structures

ID: 44540 Grade: 11–12 Length: Year
Credit: Elective
Prerequisite: Semester I grade of B or higher in AP Computer Science.

This course is a standard college course on algorithms and data structures in an object–oriented environment. The sorting algorithms include selection, insertion, merge, quick, and heap. The data structures include arrays, linked lists, stacks, queues, trees, sets, maps, and graphs. Additional topics include recursion, the Java Collections framework, Big–O analysis, hash tables, unit testing, and class design. The programming language is Java. Students taking this course should be independent thinkers able to spend a significant amount of time at a computer outside of class. This course goes well beyond the material tested by the College Board's AP Computer Science A exam. This course is project–based and very hands–on, and emphasizes a use of real world data whenever possible. This course was collaboratively developed and endorsed by a professor at the University of Texas at Austin. The AT designation indicates a course is at university level, putting it above the level of a traditional AP course. The course requires rigorous study and emphasizes in–depth research. Like an AP course, this course has a grade point weighting of 0.5 for the duration of the course.

ENGINEERING AND ROBOTICS

Introduction to Robotics

ID: 46520 Grade: 9–12 Length: Semester
Credit: Elective

In this course students will learn new skills and apply critical thinking to solving concrete problems. Important learning goals of the course are innovation, perseverance, teamwork, and communication. The course is divided into three main segments: 1) Codecademy is used to walk students with no experience through basic coding laws and language, using the Python language. 2) Arduinos and additional introductory electronics kits allow students to understand the basics of hardware/software interfacing. Arduinos and their close relatives are at the heart of the hand phone, microwave oven, automobile, and airplanes. Using Arduinos leads to a basic understanding of the interaction between hardware and software. 3) VEX robots are approximately one cubic foot in size and are used in an in–class competitions– Ken and Barbie Firefighter rescue. Students design, build ,and drive robots to perform these real–world tasks. A technical poster, technical paper, and interviews with outside engineers are required as well.

Robotics Science

ID: 46522/46529 Grade: 9–12 Length: Sem or Year
Credit: Elective

This course teaches and applies learning in the areas of mechanics, electronics, CAD, robotics design, writing, art, and marketing. Students meet, network, and compete with local and international high schools and universities, at competitions including VEX robotics in Taipei, FRC robotics in Sydney, and MATE robotics in Surabaya, Indonesia. These competitions are the gold standard of STEM, and membership on a robotics team provides excellent preparation for students headed to careers in engineering, marketing, or science. Students choosing this course may take the course during the fall semester (select 46522), during the spring semester (select 46529), or for the full year (select both). Successful students are those who excel at teamwork, innovation, and perseverance. This course may be repeated for credit. Those who have previously taken the course are expected to assume leadership roles and mentor new students. Community service may include mentoring SAS robotics teams in the lower schools. Travel to out–of–country competition is optional, and is the financial responsibility of the student.

Engineering Science: Design, Build, and Transform

ID: 44012 Grade: 10–12 Length: Year
Credit: Elective

In this class students assume the role of designer–makers and learn to apply the design process to an increasingly difficult series of challenges. Collaboratively taught, this class will interest students wanting the opportunity to learn by tackling real problems within fields of study such as sustainable housing, transportation, community infrastructure, and energy. Students approach learning through creative problem solving and activities that retain a sense of playful exploration. Semester one includes a deep dive into the design process; prototyping and computer aided design (Sketchup) as well as exploratory work with tools such as Lego, Rube Goldbergs, folding techniques and 3D printing. Activities will strengthen basic skills in fabrication, collaboration, project management, and underlying scientific concepts. In the second semester student teams will be given guidance and opportunities to apply their skills to an authentic challenge and will work collaboratively to realize a solution of sufficient scale and complexity.

BUSINESS

Business

ID: 46524 Grade: 10–12 Length: Semester
Credit: Elective
Note: This course does not meet the NCAA Division I core course requirement for social studies. See counselor for details.

This course will explore the world of modern business through project–based learning. The course will guide students through the essential activities of an enterprise, including finance and accounting, human resources, operations, and marketing. Students will become critical thinkers, analyzing, discussing, and solving real–world business case problems. Students also improve their written and oral communication skills in authentic settings when reporting their solutions to business cases. Students will polish their technology skills by authentically using computers skills as business people would: preparing presentations, calculating, preparing, and analyzing quantitative data in Excel, and creating marketing materials using image and video manipulation tools. The course is designed for those who would like a better understanding the world of commerce or hope to one day join the business field.

Business of Sports (APEx)

ID: 48040 Grade: 10–12 Length: Semester
Credit: Elective

The APEx course focuses on the qualitative and quantitative aspects of our present facility in terms of planning and projection into the next few years. Students will study possibilities such as how to make the facility self–sustainable, the art of marketing the product, how to connect with stakeholders, and fundraising techniques. Students will learn hands–on techniques designed to make the entire SAS community aware of this futuristic project as we work toward our ultimate goal of a student–administered APEx. Assessments will center on project–based learning and group work. Thoughtful introspection and long termed goal–oriented students are needed, as learning will deviate from ordinary classroom situations. Good writing skills and public speaking experience are a plus.

Personal Finance: You and Your Money

ID: 46531 Grade: 10–12 Length: Semester
Credit: Elective

Few high school and college graduates are financially literate when they first enter the workforce. This course gives students an advantage in the real world by developing their financial literacy. Students will learn that high salaries don't guarantee future wealth unless earnings are properly managed. Students will learn to manage their money through responsible spending and investing habits. In this course students will track their own daily spending from the first day of the class, blog about their learning, and explore the merits of careful consumption and effective investing through a series of project–based discoveries. Please see Social Studies for other business and entrepreneurship offerings.

JOURNALISM AND MEDIA

Journalism: Newspaper

ID: 46400 Grade: 10–12 Length: Year
Credit: Elective

This is a project–based course offering exposure to all of the practices, skills, and tools used in contemporary print and online journalism. Students will learn how to interview, report, write, and edit as well as learn about the operation of a contemporary online newspaper: ethical practices, organization, editorial policy, production, and design. Output may be in the form of written stories, video stories (news packages), or even documentaries. Students will learn the multiple skills of the contemporary journalist. The traditional print reporter might have to learn to introduce their written post with a short stand–up video, a short interview with a principal source, or a voice–over with taped images of the event. The broadcast reporter will learn how to write three–paragraph introductions to news packages or video montage and to add written content that explores details that the news package cannot with its time limitations. There will be an attempt to schedule free periods consecutive to this class and students will use a combination of class time and free periods for mandatory staff meetings, small tools and skills sessions, and one–on–one sessions with the adviser. Students must be able to work independently on stories and projects. The course may be repeated for credit.

Journalism: Yearbook

ID: 46401 Grade: 9–12 Length: Year
Credit: Elective
Note: Limited enrollment. Priority will go to students who have completed a graphic design course or have equivalent knowledge.

Enjoy research, writing, photography, and/or layout design? Want to apply academic skills to real– world assignments? Ever dreamed of seeing your work in print? Then join the class that creates the Islander, the official photo journalistic publication covering a year in the life of SAS. This course is a dynamic mixture of hands–on instruction/production, lively discussion, computer and camera work, individual and group projects, and adrenaline–pumping deadlines. In addition to learning yearbook publishing skills, students will also develop a sense of time management, workplace ethics, and leadership finesse. Some after school and weekend hours are required to cover school events and meet deadlines. Because this course has limited enrollment and requires a certain number of students in each of the four grades, some students requesting the course may not be able to take it. This course may be repeated for credit.

AP CAPSTONE, ONLINE, INDEPENDENT, AND CATALYST

AT Entrepreneurship

ID: 46560 Grade: 10–12 Length: Semester
Credit: Elective
Prerequisite: Semester I grade of A or better in World History/World Studies is required to select this course in tenth grade; a B or higher in a tenth or eleventh grade social studies course is required to select this course in eleventh or twelfth grade, or current teacher recommendation.

Entrepreneurship provides real world, hands–on learning on what it's like to actually start a company. Students will learn marketing, finance, and other business disciplines, while also acquiring organizational skills such as time management and leadership development. Students start the semester with an immediate immersion into the Lean Startup methodology adopted from University of California Berkeley and Design Thinking techniques from Stanford University. Students develop skills through working in the field, observing and interviewing to discover problems, and learning techniques for validating hypotheses. They learn by doing, through real-world problems and collaborating with real entrepreneurs. Students learn processes including customer development, agile development, and rapid prototyping. This course has been developed in alignment with the University of California Berkeley Haas School of Business and Stanford University Entrepreneurial Program. The AT designation indicates a course is at university level, putting it at or above the level of a traditional AP course. The course requires rigorous study and emphasizes in–depth research. Like an AP course, this course has a grade point weighting of 0.5 for the duration of the course.

AT Seminar

ID: 48520 Grade: 10–12 Length: Year
Credit: Elective
Prerequisite: Semester I grade of A or higher in both English 9 and World History, or Semester I grade of A or higher in World Studies is required to select this course in tenth grade. Semester 1 grade of B+ or higher in English 10/American Studies is required to select this course in eleventh grade.
Note: AT Seminar requires independence, self–regulation, and time management to be successful. Please see the TEC department chair if you have questions.

The AT Seminar course is an inquiry–driven course that engages students in cross–curricular conversations that explore real–world topics and issues from multiple perspectives. Students learn to collect and analyze information with accuracy and precision in order to craft and communicate evidence–based arguments. Students also work collaboratively to submit a team project. The AT Seminar is year one of the AT Research and Catalyst program; merging the AT Seminar/ AT Research program with the Catalyst Project allows students to reflect on their passions and strengths while they develop the skills that help them to think and write academically. Upon completion of the AT Seminar, students will be prepared for a research, performance, or innovation–based AT Research and Catalyst experience the following academic year. This course has fully adopted the AP Seminar curriculum, and therefore, students will be eligible to take the AP Seminar exam in preparation for earning the AP Capstone Diploma. The AT designation indicates a course is at university level, putting it at or above the level of a traditional AP course. The course requires rigorous study and emphasizes in–depth research. AT Seminar requires independence, self–regulation, and time management to be successful. Like an AP course, this course has a grade point weighting of 0.5 for the duration of the course.

AT Research and Catalyst

ID: 48515 Grade: 11–12 Length: Year
Credit: Elective
Prerequisite: Semester I grade of B or higher in AP Seminar or AT Seminar.
Note: Completing this course is one of the ways in which a student may fulfill the Catalyst graduation requirement.

AT Research and Catalyst allows students to deeply explore an academic topic, problem, or issue of individual interest. For example, students can dig deeper into a topic studied in an AP or AT course, work across academic areas on an interdisciplinary topic or study a new discipline of interest, perhaps one a student would like to study in college. The course begins with students developing a greater sense of self by generating a learning profile, a SMART goal, and a project framework. As they explore their interests, students design, plan, and conduct qualitative and/or quantitative research and choose a methodology to address a potential research question. Ultimately, students hone in on a driving question and work on an independent research project. Students utilize the desired student learning outcomes (DSLOs) as they document their processes and curate their scholarly work in a portfolio. In addition, students will be guided to operationalize their personal networks in order to establish mentorships and other forms of experiential network–based learning (collaborative research studies, internships, etc.) The course culminates in an academic paper of approximately 5,000 words and presentation of their Research and Catalyst Project. This course has fully adopted the AP Research curriculum, and therefore, students will be eligible to take the AP Research exam in preparation for earning the AP Capstone Diploma. The AT designation indicates a course is at university level, putting it at or above the level of a traditional AP course. The course requires rigorous study and emphasizes in–depth research. Like an AP course, this course has a grade point weighting of 0.5 for the duration of the course.

The SAS Catalyst Project

ID: 48510 Grade: 11–12 Length: Semester
Credit: Elective
Note: Completing this course is one of the ways in which a student may fulfill the Catalyst graduation requirement.

The SAS Catalyst Project represents the culmination of academic, intellectual, and social–emotional learning experiences where students are provided guidance, resources, and flexible scheduling to explore interests and pursue passions. Teachers act as guides on the side for students where learning is differentiated for each student based on their interest, readiness, and learning profile. The desired student learning outcomes (DSLOs) of communication, collaboration, critical thinking, and creativity are emphasized, developed, and assessed. As students design, plan, and conduct their projects, they will focus on producing a tangible outcome, and encouraged to dive deep into relevant content and knowledge. Often, students experience real-world learning and problem solving in authentic contexts (e.g.,interviews, work study, scientific research, internships, etc.). Students will be taught how to employ the rich regional and global professional network; starting with working with a mentor from a respective field or profession. The project scope is limited only by the student's imagination. Juniors who have a strong interest in a particular project may complete the Catalyst Project as a junior. This would be especially true for students who are planning a heavier senior course load or are applying to a university requiring a demonstration of understanding in a particular academic area (e.g., UK universities).

Independent Learning

ID: 49013 Grade: 11–12 Length: Semester
Credit: Elective
Prerequisite: Students will be required to provide additional information and have their learning plan approved after the course selection process ends.

The Independent Learning option is designed so that students can study a topic or learn in an area in which no course is available or for students to pursue work experience programs like internships, externships, or employment that is supervised by SAS. Rising juniors and seniors should select six traditional SAS classes, with the independent course as a seventh course. For the independent learning option to be listed on the SAS transcript, it must be reviewed and approved by the Center for Innovation Coordinator, Dennis Steigerwald, by the start of the semester and must be completed by the end of the semester. Successful completion would provide one–half credit per semester and be listed on the transcript as a P (Pass). The course would not be included in the SAS GPA. In order to ensure that students benefit from the full academic program offered at SAS, an independent activity could not be used to fulfill the SAS subject area graduation requirements. Further information about independent learning options is available from the Coordinator of the Center for Innovation.

GOA Online Learning

ID: 48600 (S1) and/or ID: 48601 (S2)
Grade: 11–12 Length: Semester I and/or Sem II
Credit: Elective
Prerequisite: Students must meet and have their learning plan approved by the SAS GOA Site Director.

SAS is a member of the Global Online Academy (GOA), a consortium of the top independent schools from around the world. As a member of GOA, SAS students can enroll in courses as diverse as The Graphic Novel or Medical Problem Solving. Working closely with peers and teachers from the US and other international schools, SAS students have an exciting and flexible online learning opportunity that will challenge them to further develop cultural competence and global citizenship skills.

Students who would like specialized learning options beyond SAS's in–house course offerings may choose to enroll in a one–semester or year–long online course through GOA's broad and rigorous selection of online courses. If this sounds interesting, take a look at the GOA Course

Options on the next column and then speak with your counselor.

Students who would like to take a GOA course should select the "GOA Online Course" option during the SAS online course request process in the spring. Once a GOA course is selected, the student is committed to completing the course, so it is important that there be careful consideration. Unlike traditional SAS courses, GOA courses cannot be changed during the add/drop period at the beginning of a semester. In addition, students should note that collaboration with peers and teachers is an essential component of many GOA courses, and students may be expected to manage collaboration and communication across time zones. The SAS GOA Site Director, Patrick Green, will contact students to assist them through the process of signing up for a specific course through GOA.

Students in eleventh and twelfth grade may complete a maximum of one credit per year through GOA, with the GOA course replacing one of the six or seven courses that a student would ordinarily take during the academic year. Students are encouraged to select a course that allows them to follow their interests or passions and goes beyond the options available at SAS. A GOA course must be a course that is not already offered at SAS. Credits earned through GOA could be used to fulfill minimum number of SAS credits required for graduation, but would not fulfill department specific minimum requirements (except in the case of the World Language options).

The GOA transcript will become a part of the student's official academic record. To earn a credit, the course must be completed prior to the final day of the semester; otherwise the course will be listed as an F. On the SAS transcript, the course will be listed as "GOA Online Course" with a P (pass) grade and 0.5 credit per semester. The grade will not be included in the calculation of an SAS grade point average (GPA). The GOA transcript, including the actual grades, will be sent to colleges as an additional page of the SAS transcript.

While students are encouraged to enhance their learning through other online learning opportunities and report details on university applications, only GOA courses will be listed on the SAS transcript.

GOA COURSE OPTIONS

The GOA courses listed below are available for SAS students. For complete information on length of course,which semester the course is offered, and a full course details please consult the GOA online course catologue at www.globalonlineacademy.org/student–program/courses/

ART, MEDIA, AND DESIGN

Advocacy: This skills–based course will explore the creativity, effort, and diversity of techniques required to change people's minds and motivate them to act.

Architecture: In this course students will explore the architecture, engineering, and construction of some of the most important buildings from human history. Students will be encouraged to build models of elements of these structures to better understand the construction and engineering behind their design.

Creative Nonfiction: This course will focus on shaping real experiences into powerful narratives. Through the study of professional examples and their own work, students will learn how to identify great stories in their lives and in the world around them.

Music Theory and Digital Composition: In Music Theory and Digital Composition, students explore the structure, writing, and recording of music as a design problem, with the intention of creating and releasing a finished piece of original music.

Poetry Writing: This poetry–writing workshop explores identity and seeks to answer the question How are you shaped (or not) by the community you live in?

MATHEMATICS AND TECHNOLOGY

Computer Science I: Computational Thinking: This introductory level course focuses on thinking like a computer scientist, especially understanding how computer scientists define and solve problems.

Computer Science II: Analyzing Data with Python: In this course, students will utilize the Python programming language to read, manipulate, and analyze data.

Linear Algebra: In this course you will learn about the algebra of vector spaces and matrices by looking at how images of objects in the plane and space are transformed in computer graphics.

Number Theory: Once thought of as the purest but least applicable part of mathematics, number theory is now by far the most commonly applied: every one of the millions of secure internet transmissions occurring each second is encrypted using ideas from number theory.

SCIENCE AND HEALTH

Abnormal Psychology: This course focuses on psychiatric disorders such as schizophrenia, character disorders, anxiety disorders, substance abuse, and depression. As students examine these and other disorders they will learn about their symptoms, diagnoses, and treatments.

Bioethics: Ethics is the study of what one should do as an individual and as a member of society. In this course students will evaluate ethical issues related to medicine and the life sciences.

Global Health: What makes people sick? What social and political factors lead to the health disparities we see both within our own community and on a global scale? What are the biggest challenges in global health and how might they be met? Using an interdisciplinary approach to address these questions, this course hopes to improve students' health literacy through an examination of the most significant public–health challenges facing today's global population.

Medical Problem Solving I: In this course students will collaboratively solve medical mystery cases, similar to the approach used in many medical schools. Students enhance their critical thinking skills as they examine data, draw conclusions, diagnose, and treat patients.

Medical Problem Solving II: This course is an extension of the problem–based learning done in Medical Problem Solving I. While collaborative examination of medical case studies will remain the core work of the course, students will tackle more complex cases and explore new topics in medical science.

Neuropsychology: This course is an exploration of the neurological basis of behavior. It will cover basic brain anatomy and function as well as cognitive and behavioral disorders from a neurobiological perspective.

SOCIAL SCIENCES

9/11 in a Global Context: This skills–based course will explore the creativity, effort, and diversity of techniques required to change people's minds and motivate them to act.

Applying Philosophy to Modern Global Issues: This is an applied philosophy course that connects pressing contemporary issues with broad–range philosophical ideas and controversies, drawn from multiple traditions and many centuries.

Climate Change and Global Inequality: Through investigating historical, economic, political, and environmental perspectives on energy concepts and controversies, students develop a keen ability to understand and analyze global questions surrounding energy consumption and distribution.

Gender Studies: This course uses the concept of gender to examine a range of topics and disciplines that might include: feminism, gay and lesbian studies, women's studies, popular culture, and politics.

Genocide and Human Rights: Students in this course study several of the major genocides of the 20th century (Armenian, the Holocaust, Cambodian, and Rwandan), analyze the role of the international community in responding to and preventing further genocides (with particular attention to the Nuremberg tribunals), and examine current human rights crises around the world.

Prisons and the Criminal Law: In this course, students become familiar with the legal rules and institutions that determine who goes to prison, and for how long.

WORLD LANGUAGES

Arabic Language Through Culture I: This full–year course will highlight Modern Standard Arabic and some of the spoken dialect of the Levant.

Arabic Language Through Culture II: This full–year course continues the work of Arabic Language Through Culture I, highlighting Modern Standard Arabic and the spoken dialect of the Levant.

Japanese Language Through Culture I: This full–year course is a unique combination of Japanese culture and language, weaving cultural comparison with the study of basic Japanese language and grammar.

Japanese Language Through Culture II: Through language learning, students in this course share their voices, cultivate global perspectives, and foster appreciation of self and others.

VISUAL AND PERFORMING ARTS

SAS offers a number of options in the visual and performing arts to meet the needs and interests of all students.

The comprehensive visual arts program will appeal to students interested in art courses that enrich their high school experience, as well as those students who intend to pursue art careers. Courses available cover a broad range of skills that promote innovation using a variety of traditional and digital media.

In the performing arts, students are offered courses in instrumental and vocal music, dance, and theater. These classes and ensembles are geared for every level of experience and ability. Beginning and advanced courses give students superb performance opportunities with specialty classes available for students with greater interest in music. So that performing ensembles can best meet the needs of all students, some courses require an audition prior to enrollment.

VISUAL ARTS

Art I: Foundations

ID: 46100 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts

In this survey course students are exposed to a variety of media through study of the elements and principles of art and design. Students acquire and apply skills using a variety of media and techniques. Pencil, charcoal, colored pencil, various paints, clay, sculptural materials, and linoleum for printmaking are examples of media offered to students. Emphasis is placed on skills acquisition and creativity. This course enables students to identify their strengths and possible areas of interest for future development. It provides the necessary foundation for the more advanced Studio Art courses.

Ceramics I

ID: 46104 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts

In this one–semester course students learn basic hand building, decorating and glazing techniques. Students are free to develop their own ideas within structured guidelines while building on acquired skills. Students leave the class with an assortment of forms of different functions, shapes, and sizes. Instructional time is also spent on sculptural pieces. Students are responsible for preparing their materials and looking after their pieces through the various stages of the ceramic process from construction through glazing. A brief introduction to the potter's wheel and glaze chemistry will be given as a part of this course but will not be the focus. This course is a prerequisite for students who wish to continue on to learn potter's wheel techniques in Ceramics II.

Ceramics II

ID: 46105 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts
Prerequisite: Ceramics I

This class builds on the skills acquired in the Ceramics I class. Students will work towards further mastering basic hand building and may choose to learn wheel throwing techniques on the potter's wheel. A focus on modern ceramic art as it exists today will be the focus of cultural investigation. Students will be given design and glaze chemistry problems to solve using skills and innovation for developing self–expression. They are responsible for maintaining the ceramic supplies needed and for managing the clay process from construction through glazing.

Mixed Media and Digital Processes

ID: 46108 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts
Note: This course was previously named Printmaking and Mixed Media. If a credit was earned in that course, you cannot retake it under this new title.

This course is designed for students of all levels who are interested in experimenting with and combining a variety of materials and art processes. Students will explore a range of layering processes to create rich textures using techniques in painting, drawing, printmaking, collage, and photography to manipulate the surface of their work. Students will also learn to use Adobe Photoshop to edit, manipulate, and composite photo imagery to be printed and integrated into their mixed media surfaces. This course enables students to identify their strengths and possible areas of interest for portfolio development.

Studio Art

ID: 46106 Grade: 10–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Art Foundations; or acceptable portfolio. and teacher recommendation

In this course students are provided with the opportunity to further develop their artistic abilities and interests by honing their drawing and painting skills. They find and build upon their strengths in a variety of media within each unit. Students are exposed to a broad spectrum of art styles allowing each student to find and develop his or her particular area or areas of interest. Finding voice in their work and making connections both culturally and personally are a focus throughout the course. Students work to achieve higher levels of proficiency in art.

Studio Art is a Pre–AP course. The work created prepares students for Advanced Placement courses.

AP Studio Art: Drawing

ID: 46111 Grade: 10–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Studio Art; or acceptable portfolio and teacher recommendation.

The Drawing portfolio is designed to address a very broad interpretation of drawing issues and media. Light and shade, line quality, rendering of form, composition, surface manipulation, and illusion of depth are drawing issues that can be addressed through a variety of means, which could include painting, printmaking, mixed media, etc. Abstract, observational and inventive works may demonstrate drawing competence. The range of marks used to make drawings, the arrangement of those marks, and the materials used to make the marks are endless. Photography, videotapes, digital imaging, photocopies of work, and three–dimensional work may not be submitted for the Drawing Portfolio. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP Studio Art: 2D Design

ID: 46112 Grade: 10–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Studio Art; or acceptable portfolio and teacher recommendation.

This portfolio is intended to address two-dimensional (2D) design issues. Design involves purposeful decision making about how to use the elements and principles of art in an integrated way. The principles of design articulated through the visual elements help guide artists in making decisions about how to organize the elements on a picture plane in order to communicate content. Strong design is possible whether one uses representational, abstract, or expressive approaches to make art. For this portfolio, students are asked to demonstrate mastery of 2D design through any two-dimensional medium or process, including but not limited to, graphic design, digital imaging, photography, collage, fabric design, weaving, illustration, painting, and printmaking. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

AP Studio Art: 3D Design

ID: 46113 Grade: 10–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Studio Art; or acceptable portfolio and teacher recommendation.

This portfolio is intended to address sculptural issues. Design involves purposeful decision–making about using the elements and principals of art in an integrative way. In the 3D Design portfolio, students are asked to demonstrate their understanding of design principles as they relate to depth and space. The principles of design (unity/variety, balance, emphasis, contrast, rhythm, repetition, proportion/scale, figure/ground relationship) can be articulated through visual elements (mass, volume, color/ light, form, plane, line, texture). For this portfolio, students are asked to demonstrate mastery of 3D design through any three–dimensional approach, including, figurative or non–figurative sculpture, architectural models, metal work, ceramics, and three–dimensional fiber arts. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

THEATER

Stagecraft

ID: 46544 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts

Stagecraft covers the technical aspects of theater productions. Student assignments and projects will involve three topic areas: set design and construction, stage lighting, and theater sound systems. Projects in each of these areas will provide students with knowledge and hands on experience with technical equipment used in theaters. All student work that involves construction and work with electrical equipment will include proper safety instruction. All students must follow safety guidelines. This course can be repeated for credit.

Theater: Foundations

ID: 46307 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts

The ensemble is the foundation supporting all our work in theater. Students engage in wide variety of ensemble and theater exercises throughout the semester. They develop fundamental acting skills through scene work and acting exercises. Actor training focuses on realism, which has as its goal truthful behavior under imaginary circumstances.

Theater: Improvisation

ID: 46310 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts

Improv performers do not just 'make it all up' on the spot. There are skills and structures that provide the springboard for entertaining improvisation. Students will develop these skills and improv 'forms' in a workshop process emphasizing collaboration and play. Particular focus will be placed on those forms which lead to "long form" performance. (See the course description for Advanced Improvisation for more information about "long form.")

Theater: Advanced Improvisation

ID: 46314 Grade: 10–12 Length: Semester
Credit: Visual/Performing Arts
Prerequisite: Theater: Improvisation

Building on skills learned in Improv, students will work towards a 'long form' performance. The ensemble improvises a 20–30 minute set based on a single prompt from the audience. Long form relies more heavily on acting skills, ensemble memory, and active listening than short forms. Long form ensembles represent the cutting edge in today's Improv subculture. This course can be repeated for credit.

Theater: Production

ID: 46313 Grade: 10–12 Length: Semester II
Credit: Visual/Performing Arts
Prerequisite: Any Theater course

Students work in small and full–class ensembles devising, rehearsing, and performing theater for a public audience. This course prepares students and is the prerequisite for the AT Performing Arts: Theater course. A few after–school rehearsals may be required. This course can be repeated for credit.

Film/Acting Ensemble

ID: 46315 Grade: 10–12 Length: Semester
Credit: Visual/Performing Arts
Prerequisite: Any Theater or Filmmaking course

In this course, students form a collaborative ensemble to create short films for entry in film contests. Students will focus on either the performance or the technical aspects of filmmaking. Ensembles work together on creating story and dialogue, choosing locations, and a variety of other aspects related to the creation of short films.

Theater: Sketch Comedy

ID: 46316 Grade: 10–12 Length: Semester
Credit: Visual/Performing Arts
Prerequisite: Theater: Improvisation; or Theater: Foundations
Note: Offered in 2018–19; may not be offered in 2019–20. Some theater courses, such as this one, are not offered every year and may be offered in alternate years.

Students will create sketch comedy scenes for live performance and filming. Students will use improvisation at every stage and in all aspects of writing sketches. This includes developing characters, finding the funny, exploring relationships, and coming up with a good ending. Students will learn how to make improvisation the first step in writing a sketch as well as how to use improvisation to help them move forward when writing has already begun.

Musical Theater: History and Production

ID: 46226 Grade: 9–12 Length: Semester II
Credit: Visual/Performing Arts
Note: Not offered in 2018–19; may be offered in 2019–20. Some theater courses, such as this one, are not offered every year and may be offered in alternate years.

This course provides an in–depth study and practical application of musical theater. Students will research, rehearse, and perform material from the musical theater genre. In the first quarter, students will examine examples of Broadway musicals. In the second quarter, students will write, direct, produce, and perform original musicals. No prior experience is necessary, but students must be willing to engage with all aspects of the modern musical. This course will not be offered in 2018–19.

FILM AND PHOTOGRAPHY

Filmmaking

ID: 46404 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts

The emphasis in this course is the art and craft of filmmaking as students study and practice the single–camera style used by filmmakers in the production of features and documentaries. Assignments will include readings on film aesthetics and practices and the study of critically acclaimed, early and contemporary films. Practical, hands–on work includes a camera familiarization exercise, a digital–editing exercise, two structured exercises, and a final project. Students will write a treatment and script, and prepare a storyboard for the final project. Students will be required to complete work outside of regularly scheduled class meetings. This course may not be repeated for credit.

Advanced Filmmaking

ID: 46406 Grade: 10–12 Length: Semester
Credit: Visual/Performing Arts
Prerequisite: Filmmaking

Students take the skills and experience gained in Filmmaking and work independently to create short films for entry in film festivals. This course may be repeated for credit.

Digital Photography

ID: 46519 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts
Note: A student–owned digital camera is recommended.

This course will introduce students to the limitless possibilities of image making in the digital age. Students will be expected to learn the fundamental concepts and skills related to digital photography and graphic design. This is a project–based course that will require students to integrate the concepts of art and design into a series of assignments that they will create on the computer using Adobe Photoshop software. Students will also learn to use digital cameras, and scanners as image input devices and laser and color ink-jet printers as output devices. Topics will include: digital vs. traditional photography, basic digital image adjustment, advanced digital image manipulation, type and text, composite and photomontage, methods of printing, and presentation of digital images. Students will be required to submit prints for exhibition as well as prepare and present a final portfolio of their work at the end of the semester.

Advanced Digital Photography

ID: 46521 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts
Prerequisite: Digital Photography
Note: Access to a DSLR is recommended.

Advanced Digital Photography is designed as a continuation of the current semester–long Digital Photography course. The purpose of this second course is to provide motivated students with the opportunity to expand on the knowledge and skills they acquired in Digital Photography. This is a project–based course, which seeks to challenge the student's creative and technical skills through the creation of both straight and manipulated digital images. Topics to be covered will include advanced digital camera skills using a DSLR camera, advanced Photoshop skills as well as the use of several other digital image and multimedia software. Students will be expected to design a final creative project in a direction and area of their interest. Throughout the course, students will be required to submit prints for exhibition as well as prepare and present a multimedia final portfolio of their work at the end of the semester.

INSTRUMENTAL MUSIC

Concert Band

ID: 46202 Grade: 9–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Intermediate to advanced ability on a band instrument.
Fee: Performance attire S$50–S$150. A limited number of instruments are available for rental at S$150 per year.

Concert Band is open to all students who have had previous experience on a band instrument. The band will perform in concerts during the year, playing a variety of musical styles ranging from popular to classical. This course may be repeated each year for credit. All Concert Band members are required to attend all scheduled performances, including after school or weekends.

Symphonic Band

ID: 46210 Grade: 9–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Audition
Fee: Performance attire S$50–$150. A limited number of instruments are available for rental at S$150 per year.

Symphonic Band is an audition–based group for intermediate to advanced musicians who wish to challenge their skills with more difficult music. The band will perform in four major concerts during the year, playing a variety of musical styles ranging from popular to classical. This course may be repeated each year for credit. All Symphonic Band members are required to attend all scheduled performances, including after school or weekends.

Wind Ensemble

ID: 46208 Grade: 9–12 Length: Year
Credit: Visual/Performing Arts
Fee: Performance attire S$50–S$150. A limited number of instruments are available for rental at S$150 per year.

Wind Ensemble is a very advanced band course for serious musicians who wish to challenge their skills with more difficult music. They play a varied repertoire of classical and popular music and will be encouraged to do solo and small ensemble performances as well. The Wind Ensemble represents the school in the community through concerts and programs. This course may be repeated each year for additional credit. All Wind Ensemble members are required to attend all scheduled performances, including after school or weekends.

Jazz Improvisation

ID: 46217 Grade: 10–12 Length: Semester I
Credit: Visual/Performing Arts
Prerequisite: Successful audition to Wind Ensemble and teacher recommendation.
Fee: Please see Wind Ensemble

Jazz Improvisation is offered to advanced musicians seeking to further their knowledge and skill in the jazz idiom. Students will study basic chords, scales and patterns used in improvisation, further develop small ensemble and combo playing skills and explore a variety of jazz standards. Students in Jazz Improvisation will perform with both the Wind Ensemble and the high school Jazz Band. This is a fall semester course, and students in Jazz Improvisation will be enrolled in Wind Ensemble during the spring semester. Students interested in enrolling in Jazz Improvisation must audition successfully for Wind Ensemble and subsequently request the approval of the band director.

STRINGS

Concert Strings

ID: 46213 Grade: 9–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Experience with a string instrument
Fee: Performance attire S$50–S$120. Instrument rental at S$150 per year if required.

Concert Strings is designed to help students with one to three years experience playing a string–instrument to prepare for String Ensemble. This is an ideal setting for the string student who would like to switch instruments (i.e., violin to viola or cello to double bass). Special consideration will be devoted to developing technique, with particular emphasis placed on shifting, facility in the upper positions, developing a mature vibrato, and more advanced bow technique. Students will be exposed to a wide range of styles, including: classical, folk, jazz, and rock. The history of orchestral music, string instruments and the general maintenance of the instrument, will also be covered. This course may be repeated each year for credit. All students are required to attend all scheduled performances, including after school or weekends.

String Ensemble

ID: 46209 Grade: 9–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Audition
Fee: Performance attire S$50–S$120. A limited number of instruments are available for rental at S$150 per year.

String Ensemble is for the advanced student who is serious about music performance. Placement in this ensemble is by audition only and will consist of three octave scales, prepared repertoire and sight–reading. Students will improve their individual pedagogy as well as learn about the theory, style and form of music through the study and performance of quality literature. Study with a private tutor is highly recommended for students in this course. Attendance at scheduled performances is required. This course may be repeated for credit.

Chamber Strings

ID: 46229 Grade: 9–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Audition
Fee: Performance attire S$50–S$120. A limited number of instruments are available for rental at S$150 per year.

Chamber Strings is geared for the budding

virtuoso who is very serious about music, and wants to take their performance to the highest level (similar to Instrumental Music AP). The instrumentation for this ensemble will be set at 12 violins, four viola, four cello and two bass. Placement in this prestigious ensemble will be by rigorous audition stressing intonation and musicality. The demanding repertoire will be the catalyst for understanding the stylistic characteristics of music throughout the ages. The smaller size of this group will allow students to strive for a very refined, articulate performance standard, and exploration of the various tone colors possible on a stringed instrument.

VOCAL MUSIC

Concert Choir – Chorale

ID: 46203/46205 Grade: 9–12 Length: Sem or Year
Credit: Visual/Performing Arts
Fee: Performance attire S$50–S$150

The SAS Chorale is a SATB choral community that will sing a wide variety of choral repertoire both in the large group and in smaller ensembles. Students will advance their skills while learning about different musical styles through music prepared for public performance. From this choral experience, students will develop an excellent level of musicianship and will refine their vocal techniques. The Chorale represents the SAS community through various concerts and programs, sometimes as many as three or four per semester. Chorale members will participate in an annual Choir Festival with a well–known guest conductor. Students choosing this course may take it for just one semester (46203) or for the full year (select both 46203 and 46205). In order to be eligible to audition for SAS Singers it must be taken for the whole year. All Chorale members are required to attend all scheduled performances and rehearsals, including after school or weekends. This course may be repeated for credit.

Choral Ensemble – Chanterie

ID: 46212 Grade: 9–12 Length: Year
Credit: Visual/Performing Arts
Fee: Performance attire S$50–S$150

The SAS Chanterie is a choral community made up of females that will sing a wide variety of choral repertoire both in the large group and in smaller ensembles. Students will advance their skills while learning about different musical styles through music prepared for public performance. From this choral experience, students will develop an excellent level of musicianship and will refine their vocal techniques. The Chanterie represents the SAS community through various concerts and programs, sometimes as many as three to four per semester. All Chanterie members are required to attend all scheduled performances and rehearsals, including after school or weekends. This course may be repeated for credit.

SAS Singers

ID: 46206 Grade: 10–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Audition (must also have completed one continuous year of SAS high school choir during the year of the audition)
Fee: Performance attire S$50–S$150

SAS Singers is a balanced soprano, alto, tenor, bass (SATB) ensemble of selected musicians who wish to participate in a variety of musical performances. They will learn to analyze music, develop choral techniques, recognize musical styles, and demonstrate movement to music (choreography). They will serve as an elite group, singing many genres of music including jazz, popular, and madrigal music as well as top level choral repertoire. Each member will also be expected integrate with other choirs for major classical works. The Singers frequently represent the school in the community, sometimes five to eight times per semester. SAS Singers have one required evening rehearsal per week. This course may be repeated for credit.

ADDITIONAL MUSIC COURSES

Introduction to Guitar

ID: 46214 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts
Note: Offered each year. Students should provide their own guitars (preferably a classical instrument); there are a limited number of school instruments available for rent at S$50 per year.

Introduction to Guitar is designed for the beginning guitarist who wants to learn the fundamentals of guitar pedagogy in a classroom setting. Students will be exposed to a wide range of styles, including: classical, folk, jazz, and rock. The history of the guitar, what to look for when buying a guitar, along with tuning and general maintenance of the instrument will also be covered. Students will learn to read standard notation and tablature as well as strategies for reading rhythm patterns. This class will equip students with the skills necessary for a lifetime of enjoyment on this beautiful and practical instrument.

Advanced Guitar

ID: 46218 Grade: 9–12 Length: Semester
Credit: Visual/Performing Arts
Prerequisite: Successful completion of Introduction to Guitar or audition.
Note: Offered each year. Students should provide their own guitars (preferably a classical instrument); there are a limited number of school instruments available for rent at S$50 per year.

Advanced Guitar is a one–semester, elective course offering intermediate to advanced instruction on the guitar. Students in this course will improve their skill in open, power, and moveable (barre) chords, using a variety of accompaniment styles. Continued development of right hand technique (pick and finger style) will also be a focus. Students will improve their reading skills in both traditional notation and tablature. Increased knowledge of the guitar finger board will be a main goal for the course, along with the exploration of secondary chords and embellished chords. Students will be exposed to a wide range of quality literature designed to improve overall technique and musicianship. Students will also learn basic digital recording techniques using ProTools and an analogue mixing board. Students will leave this course with a portfolio CD of their recorded repertoire.

DANCE

Dance I – Introduction to Dance

ID: 48002 Grade: 9–12 Length: Semester
Credit: PE or Visual/Performing Arts

This course is designed for any student who would like to use dance to develop the physical fitness, confidence, and ability to dance either for fun or as a performer. This course combines fitness, dance technique, and dance choreography. The class is designed to improve physical skills such as posture, strength, flexibility, stamina, and balance, as well as introduce choreographic and improvisational techniques. Students will learn the techniques and vocabulary for various types of dance, including ballet, lyrical, contemporary, jazz, and hip hop. Students will incorporate what they have learned into creative dance choreography. Appropriate injury prevention techniques will be explored along with relevant aspects of anatomy. Students will perform for each other in class and have the option to perform at the semester show. All students are recommended to take Dance 1, even those with previous studio dance experience. Concepts covered within a dance education class are different from what is often covered in a studio technique class, and the two types of classes complement each other beautifully.

Dance II

ID: 48003 Grade: 9–12 Length: Semester
Credit: PE or Visual/Performing Arts
Prerequisite: Dance I; or dance teacher recommendation.

Dance II is a course designed for students who have a serious interest in dance and who wish to increase their knowledge and skills. This class provides an intensive approach to skill development, etiquette, discipline, and knowledge of three dance styles: ballet, jazz, and modern/contemporary. Each technique class will cater to specific needs and abilities. The semester is broken into three sections, during which each dance style is studied and practiced intensively. Students will also be asked to create a more in–depth piece of choreography that uses more complex choreographic concepts. Students will perform for each other in class and have the option to perform at the semester show.

Dance III

ID: 48004 Grade: 9–12 Length: Semester
Credit: PE or Visual/Performing Arts
Prerequisite: Dance I, plus Dance II or dance teacher recommendation.

This course allows students to continue their technical training in dance, while offering them more opportunities to explore choreography. It will also prepare students for the auditions for Dance Performance. Dance III has three major goals: 1) To continue building and strengthening the dancers' technique in a variety of dance forms; 2) to provide an opportunity for dancers to study and discuss and analyze dance history, philosophy and theory concepts to a greater depth; 3) to allow students the opportunity to choreograph longer pieces and pieces for different purposes. These performances will be performed and recorded. There are possibilities for performances outside of the classroom in this course. This class also provides an opportunity for more advanced dancers to learn the skills needed to teach creative dance classes to their peers and the wider community. Some costs may be incurred for the purchase of costumes and shoes.

Dance Performance

ID: 48005 Grade: 10–12 Length: Year
Credit: PE or Visual/Performing Arts
Prerequisite: Audition (must also have completed Dance III and taught in the after–school middle school dance program).

This course is designed for the serious dancer who has had dance training and would like to experience choreographing and performing more intensely. Students will continue learning and working on dance techniques. They will also learn more about choreography, dance design and choreographic devices. They will be expected to work as a team with guidance to teach, stage and direct their own dances for the semester production. Students will be asked to critique and evaluate their own and other dancers' choreography and performances in more depth using appropriate terminology. Students will be expected to rehearse at least three afternoons each week (4:15 p.m. to 6:00 p.m.), increasing to daily rehearsals prior to the show. They will be expected to attend all scheduled rehearsals and participate in school performances as well as attend community performances. Some costs may be incurred for the purchase of costumes and shoes.

ADVANCED OPTIONS

AT Performing Arts

ID: 46325 (Dance) / 46326 (Music) / 46327 (Theater)
Grade: 12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Completion of three courses in the performance discipline and completion of application process detailed below. Specific strands may also include course pre–requisites.

This course provides students with opportunities to create and engage with university–level performance experiences. Students working within one of the disciplines of Dance, Drama, Vocal or Instrumental Music will fulfill requirements specific to that discipline. These include: collaboration, guided research, exploration of methodologies, development of a performance, and in–depth written reflection. The application process is as follows: a) students audition as per usual for higher level performance groups by March, b) upon passing the audition, students submit a written application, and c) applicants are vetted by a performing arts teacher panel in April. All applicants must be rising seniors.

There are three strands within AT Performing Arts:

1. The Dance strand is designed for the serious dancer who has had sufficient dance training and can choreograph independently. Students will continue to be part of the Dance Performance class and the two semester production, but will also engage in guided research, exploration of methodologies, development of a performance, and in–depth reflection. This strand was collaboratively developed and endorsed by the Dean of the College of the Arts, California State University at Long Beach.

2. The Music strand is for serious music students. AT Music students will expand their group performance experience by performing as an individual and by deepening their skill as music analysts, theorists and historians. The strand was collaboratively developed and endorsed by a professor at the University of California Los Angeles.

3. The Theater strand requires students to work collaboratively to create a piece of original theater and has a prerequisite of Theater Production. Students will assume positions of leadership in the ensemble: creators, designers, and directors, as well as performers. AT Theater students must be enrolled in a theater course both semesters of their senior year. This strand was collaboratively developed and endorsed by the of Head of Theater and Dance at Texas Tech University.

The AT designation indicates a course is at university level, putting it at or above the level of a traditional AP course. The course requires rigorous study and emphasizes in–depth research and writing. Like an AP course, this course has an additional grade point weighting of 0.5.

PHYSICAL EDUCATION

Students must successfully complete three semester courses in Physical Education (PE). Students may repeat a PE course for an elective credit, but a repeated course may not be used to fulfill the PE graduation requirement. Students may not be enrolled in more than one PE course per semester. All students in physical education classes are required to participate actively in physical fitness, conditioning, and aerobic activities. Students will be assessed regularly on the rules and skills of the sports being taught, as well as on their level of fitness.

Technology is an integral part of the PE curriculum and the department adopts relevant applications as they become available. Due to the special nature of the subject area, the scope reaches beyond the laptop driven research and interaction framework to include specific software such as the Fitness Gram program. Results are linked to age specific scores from North America to provide teachers, students ,and parents with a comparison to others.

Video recordings of skills acquisition are routinely utilized to ensure that students are grasping specific movement patterns inherent in the learning of skills. Heart rate monitors are utilized so that students and teachers can track real time fitness levels in many courses. The use of pedometers allows students to ascertain the volume of movement they are involved in daily and stopwatches help to quantify progress.

Field Hockey, Softball, and Golf

ID: 48015 Grade: 9–12 Length: Semester
Credit: Physical Education

This course includes basic instruction in three areas. In field hockey, students will learn to properly handle the hockey stick and develop the skills of passing, receiving, dribbling, shooting, tackling, and goal keeping. In the softball unit, students will learn the primary skills of softball throwing, catching, running, and batting. They will develop skills required to play offensive and defensive positions. Upon completion of the softball and field hockey units, students will be able to employ appropriate strategies in game situations and will demonstrate skill in playing and officiating. At the conclusion of the course, students should be able to play softball and field hockey with enjoyment and confidence. Golf makes up the final unit of the course, which is designed for both beginners and experienced students. Students will develop many golf skills including hitting off a tee, driving with an iron, chipping, and putting. Course etiquette, score card understanding, safety aspects, penalties, and club selection will be covered. Instruction will be augmented with sessions at a local driving range. Upon completion of the unit, students will have the skills and proficiency to play a regular round of golf.

Fitness for the Body and Mind

ID: 48024 Grade: 9–12 Length: Semester
Credit: Physical Education

This course is designed to teach students the process of using exercise to not only challenge the body but also to stimulate the brain by using various exercise forms such as Yoga, Pilates, Drums Alive, Qi Kung, Tai Chi, and other martial art disciplines. Students will challenge their balance, strength, flexibility, coordination, and concentration through these various disciplines as well as through fusion exercises such as Iron Yoga, Yo Chi, Yoga with stability balls, Pilates with BOSU and TRX. The objective of this course is to seek an alternative route to stimulate cognitive development through providing physical and mental challenges, which in return, result in a stronger focus, self discipline, and ultimately in increased self confidence.

Group Fitness

ID: 48001 Grade: 9–12 Length: Semester
Credit: Physical Education

This is a group exercise program with an emphasis on strength and fitness conditioning offered to students looking to get stronger, fitter, and more importantly, to be able to move more efficiently through a variety of fitness related exercises and workouts. The course is designed to encourage intense and vigorous participation with a focus on the basic foundations of movement using a wide variety of fitness tools to enhance movement efficiency. The following equipment will be used: BOSU, Kamagon balls, SMART boards, Slastix bands, slingshots, suspension trainers, stability balls, medicine balls, slam balls, kettlebells, barbells, dumbbells, sandbells, sandbags, battle ropes, ladders, and hurdles. Students will learn to train like an athlete and will learn exercises to increase strength, endurance, coordination, flexibility, and balance through these various forms of group fitness exercises using a distinct progressional method. Students will use heart monitors to better understand how to maximize

their workouts for optimal health. Nutrition, kinesiology, and fitness concepts will also be covered to enhance their knowledge of fitness education.

Group Fitness II

ID: 48029 Grade: 9–12 Length: Semester
Credit: Physical Education
Prerequisite: Group Fitness

This course will provide students with the opportunity to get a deeper understanding behind the concepts of Movement Efficiency Training. In addition to applying these concepts for their own personal use, they will be able to safely design training programs for students and adults during class time or through the House of Pain after-school fitness club. Students will have the opportunity to set up their own training practices, market the program to students or adults, and teach, coach, or train small groups. Valuable information on motivational and cueing techniques, the principles of class design, creating a positive fitness experience, progressions and regressions for multi–level classes, exercise and movement selection, sequencing, choreography, program modifications, music and legal guidelines will also be covered in the course.

Indoor Team Sports

ID: 48009 Grade: 9–12 Length: Semester
Credit: Physical Education

This course is designed to develop and improve ball skills, teamwork, muscular strength, and endurance. Students will learn the basic skills, techniques and strategies of volleyball, basketball, team handball, and indoor soccer. They will practice these skills in individual and group drill situations. When students have mastered these basic skills, regulation games will be played. Students will be tested on all pertinent theoretical aspects of each activity.

International Sports

ID: 48008 Grade: 9–12 Length: Semester
Credit: Physical Education

This PE course will include the following three core disciplines/activities: Netball, (Indoor) Cricket, and Archery. Additionally students play two of the following other activities: ultimate frisbee, sepak takraw, tchouk ball and lacrosse. Each of the sports will focus on fundamental movement patterns (i.e. passing and receiving, shooting, batting, running, fielding) designed to make the student competent with regard to the basic skill sets in order to demonstrate and participate in organised play and interclass competition. At the conclusion of the course, students should be able to play all sports with enjoyment and confidence. A comprehensive skill and written assessment will be administered at the conclusion of each unit, as well as a practical based final exam project at the end of the course.

Climbing and Adventure Training

ID: 48028 Grade: 9–12 Length: Semester
Credit: Physical Education

This course is designed to introduce students to elements of adventure sports and adventure training. Adventure training challenges students in teams and as individuals through games and engineering configurations. The semester starts with trust building activities needed for both the climbing wall and the challenge course. Students will learn different types of knots and safety information needed to participate. Bouldering, belay work, various climbing routes, rappelling, and constant communication are skills that will be recurring through out the semester as we start on the indoor climbing wall and slowly and safely work our way to the high elements on our outdoor ropes course. An added aspect will be a fitness component that will support and enhance the students' endurance, flexibility, and strength in order to become more efficient on the wall.

Personal Defense and Combatives

ID: 48027 Grade: 9–12 Length: Semester
Credit: Physical Education

This course is designed to expose students to a variety of Mixed Martial Arts type techniques and strategies that combine stand up and ground work related to personal defense and athletic training. It involves martial arts techniques from disciplines such as boxing, jiu jitsu, judo, krav maga, tae kwon do and wrestling. Students will learn the basic elements of striking, kicking, takedowns, and ground defense work as well as mental strategies in a safe and controlled environment. Additionally students will learn self–defense principles and strategies on how to be safe and aware of potential dangers in their surroundings. The course will include both practical and theoretical work.

Racquet Sports

ID: 48016 Grade: 9–12 Length: Semester
Credit: Physical Education

This course is designed to expose the students to five distinct racket activities: badminton, table tennis, pickleball (modified indoor paddle tennis), soft indoor tennis, and court tennis. The course will focus on stroke development, game analysis, and play refinement. Students will work on improving hand–eye coordination and reaction time response. Singles and doubles play strategies will also be presented. Practicing court etiquette, officiating, scoring, and participating in round robin or bracket tournaments will conclude the class activities. A comprehensive skill and written assessment will be administered at the conclusion of each unit.

Soccer, Flag Football, and Rugby

ID: 48014 Grade: 9–12 Length: Semester
Credit: Physical Education

Through this course students will become knowledgeable about the rules and regulations of soccer, flag football, and rugby and will be able to officiate games. In soccer, students will learn to perform skills at a satisfactory ability level, integrate soccer skills into a regular game situation, apply rules and strategies, and also teach skills to the other students. In the flag football unit, students will learn locomotor skills such as running (forward, backwards), shuffling sideways, handing the ball off to another player, throwing, and catching with good biomechanics. Basic offensive and defensive plays and strategies will be explored and implemented in order for the student to fully understand and enjoy the experience of participation in flag football. Students will demonstrate knowledge of, correctly follow, and apply the rules of flag football. In the final unit of this course, coeducational rugby will be taught and played. Touch rugby will be introduced during the initial period of the course. After mastering the basic skills and techniques of the game, students will be able to apply them in scrums, rucks, mauls, lineouts, and kickoffs in drills and game situations.

Track and Field: Running Events

ID: 48017 Grade: 9–12 Length: Semester
Credit: Physical Education

This course will concentrate on the sprints, relays, and middle distance running events. The 100, 200, 400, 800 and 1,500 meter distances will be covered as well as the 4 x 100 and 4 x 400 relays. Students will complete the various training methodology for each discipline along with the relevant theory associated for the successful completion of the events.

Weight Training and Conditioning I

ID: 48018 Grade: 9–12 Length: Semester
Credit: Physical Education

This course is designed to meet the needs of students who demonstrate an interest in developing personal fitness skills and gaining knowledge of anatomy and physiology. The course introduces students to many aspects of physical fitness, weight training, and conditioning and their role in promoting strength, muscular endurance, cardiovascular endurance, agility and flexibility. Students will apply weight training and fitness concepts through the development of their own personal fitness program. Students will learn the proper use of the universal weight machine and free weights. Students will also become knowledgeable about various nutritional and weight control programs and will be able to analyze the effectiveness of each of the programs studied.

Weight Training and Conditioning II

ID: 48019 Grade: 9–12 Length: Semester
Credit: Physical Education
Prerequisite: Weight Training I

This course is designed to continue knowledge and skill in the components of physical fitness: strength, muscular endurance, cardiovascular endurance, agility, and flexibility. The resistance–training program includes free weights, circuit training, flexibility instruction, and aerobic activities. Theoretical instruction, comes from a variety of sources including physiology texts, salient journals, and teaching periodicals. The students' knowledge of this theoretical base, along with practical application, forms the core concepts of this offering. Students will be graded on both practice and theory.

Lifeguarding

ID: 48023 Grade: 10–12 Length: Semester
Credit: Physical Education
Prerequisite: Must be at least 15 years old and be able pass the swimming test. If uncertain about your swimming skills, check with a PE teacher before requesting this course.

The purpose of the Lifeguarding course is to teach lifeguards the skills and knowledge needed to prevent, recognize, and respond to aquatic

emergencies and to provide care for injuries and sudden illnesses. The American Red Cross Lifeguard Training Program curriculum is used as the basis for this course. Students may opt–in to receive the following certificates: Lifeguarding, First Aid, CPR, and AED Administration for the Professional Rescuer. Please note that in order to meet the rigorous standards for these certificates, students may be required to attend some outside–of–school hours sessions if they wish to receive all of the certifications.

ADVANCED OPTIONS

AT Kinesiology

ID: 48000 Grade: 11–12 Length: Semester
Credit: Physical Education
Prerequisite: Completion of Biology, plus a Semester I grade of B+ in Chemistry or B in Accelerated Chemistry; or recommendation of PE Department Chair.

This course is designed to provide students with selected foundational knowledge in kinesiology. Modules focus on basic anatomy and introduce key aspects of exercise physiology, biomechanics, and motor behavior. Students will have the opportunity to apply course content through project–based learning. Projects may look to explore and investigate areas such as human performance, personal wellness, public health, and quality of life across the lifespan. This course aims to prepare students to pursue further studies in physical education and medical fields. This course was collaboratively developed and endorsed by a professor at the University of South Carolina. The AT designation indicates a course is at university level, putting it at or above the level of a traditional AP course. The course requires rigorous study and emphasizes in–depth research. Like an AP course, this course has a grade point weighting of 0.5.

HEALTH/WELLNESS

All students are required to take one semester–long Health and Wellness course in tenth grade. All courses will include the following critical issues components: human sexuality and diseases, drug and alcohol issues, and decision–making.

Body Systems and Diseases

ID: 48011 Grade: 10–12 Length: Semester
Credit: Physical Education

This course is designed to help students better understand body systems and their functions. Students will understand the impact of personal health, behaviors and life–styles on body systems. Emphasis will be placed on such important diseases and disorders as heart disease, cancer, diabetes, and AIDS. Students will become aware of the major communicable and noncommunicable diseases with the emphasis on prevention, treatment, and significant medical breakthroughs. Students will also learn how research and medical advances influence prevention, life–style, wellness, and the control of health problems. Knowledge of the short and long term effects associated with the use of alcohol, tobacco, and other drugs on reproduction, pregnancy, and the health and wellness of an individual will be emphasized. A preventative versus a curative approach will be taken in order to encourage students to take responsibility for their own life–styles and wellness.

Safety and First Aid

ID: 48012 Grade: 10–12 Length: Semester
Credit: Physical Education

This course is designed to help students become aware of their surroundings and how they can affect their own and other's safety, and to help them deal with potential accidents and hazardous situations. The First Aid section will teach students what to do in a number of emergency medical situations. The course will follow American Red Cross Emergency Response programs for First Aid and CPR. Besides becoming proficient in CPR and other immediate related life saving techniques, complete emergency response first aid training will examine the most common injuries and situations associated with sports and other activities. Students will receive Red Cross certifications in both First Aid and CPR. Additionally, a three to four week study review of Critical Issues will be included on a variety of topics like alcohol, tobacco, (mis)used drugs, nutrition, sexuality, STIs and HIV/AIDS.

Life Balance: Body and Mind Wellness

ID: 48007 Grade: 10–12 Length: Semester
Credit: Physical Education

This course provides students with an opportunity to learn, discuss, and explore topics relevant to SAS teens and their overall wellbeing. The course will help students learn how to take healthy action and build toolkits to prepare them to handle the many challenges in their high school lives. Learning to reflect and process issues, and find language that will help one to articulate their needs will also be modeled. The core topics are mental health, healthy relationships, sexual health, physical health and nutritional health; this overall health framework will allow for the class to be responsive to current issues. This will be a very hands–on, participation focused, application minded, and project-based class.

Life Skills and Human Development

ID: 48010 Grade: 10–12 Length: Semester
Credit: Physical Education

This course provides students with a solid knowledge base about important personal and social skills to help them make appropriate life–style decisions. Topics include the misuse and abuse of alcohol, tobacco, and illicit drugs; human development, including reproduction, development of relationships, marriage, and divorce; and sexually transmitted diseases, including behaviors that lead to them and how to avoid them. Student participation in discussions and projects is a key element. Students should be mature and forthcoming in their attitudes toward the subject matter.

Quest is an exciting and innovative all–day, year–long program for juniors and seniors at SAS. Students who are interested in Quest should plan their high school career to ensure Quest fits in their education plan.

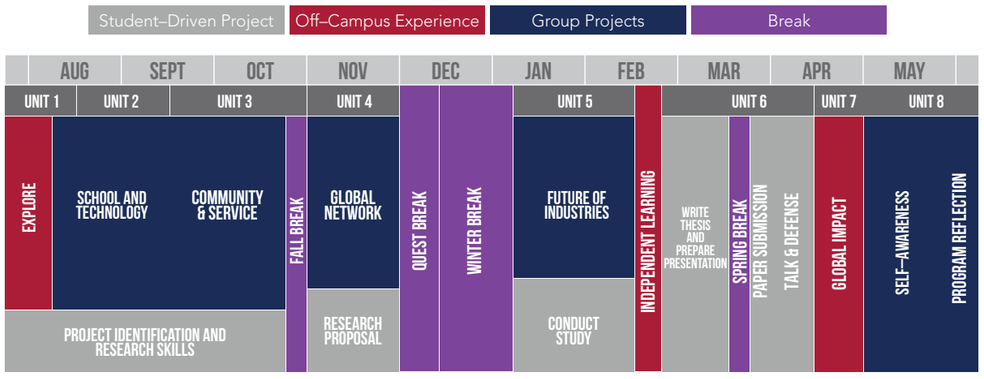
Quest provides structure and time to support students in pursuing their curiosity and passions. Instead of taking a traditional course load, students will earn six credits by engaging with interdisciplinary projects that are personalized to their interests. The program is designed to allow flexibility in scheduling so that students have the time to explore, innovate, and be inspired. Students will also develop skills and connections to the real world through different experiences such as:

- Corporate partnerships or internships
- Embedded service learning
- Off–campus experiences

YEAR OVERVIEW

The Quest calendar is designed to ensure students can participate in all extracurricular and spirit activities. With the exception of starting school two weeks early and receiving two extra weeks for winter break, the Quest calendar aligns with the SAS calendar.

The units stress skill acquisition through collaborative interdisciplinary projects personalized to the interests of each student. Students work individually throughout the year on a student–driven project, which culminates with a thesis paper, thesis talk, thesis defense. Quest students explore various topics, forms of communication, and are encouraged to engage with school, community, and global networks. Throughout the year, students will practice time–management, project organization and develop skills such as critical–thinking, creativity, cultural awareness, and communication which will be essential skills for their future.



DAILY SCHEDULE

Students in Quest will schedule their individual time around the Quest community times and their selected course. Throughout the day, the advisors will regularly provide personalized resources. Throughout the unit, the direct whole class instruction will be provided to ensure that students are meeting expectations and discovering strategies that work for them to be responsible for their own learning. As such, there is no set schedule for how Quest students will spend their time. Students will have flexibility and accountability to plan their time as needed.

To help visualize the uniqueness of the flexibility afforded the students, below is what a weekly schedule of a Quest student might look like:

Quest Community: required attendance at assigned locations

Individual Student: scheduled by the student around other obligations

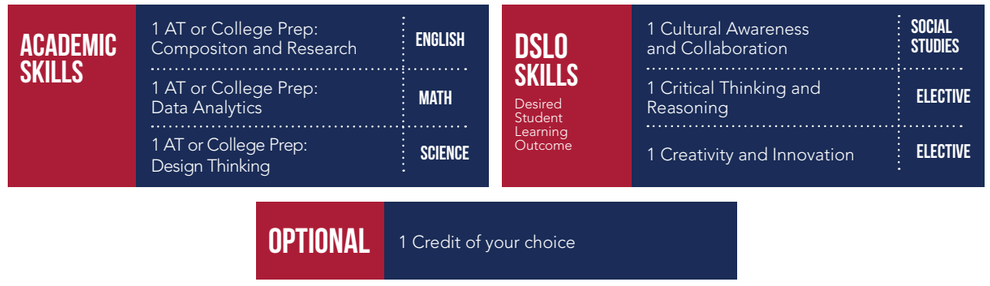
Group Scheduled: scheduled by the group for the completion of unit projects and committee work

8:30 – 10:00	CAREER GUEST SPEAKER: HEAD OF PUBLIC RELATIONS FOR COCA–COLA	SUBMIT AND REVIEW RESEARCH	REFINE QUESTIONS	VISUALIZING DATA WITH MS. POLUAN	DEVELOP STORYLINE OF FILM
10:15–11:30	INTERVIEW STUDENTS	OFF CAMPUS @ THE HUB: TO EXPLORE START UPS	SELF–SELECTED COURSE	INDIVIDUAL CONFERENCE WITH ADVISORS	
12:00 – 1:30	LESSON: CRITICAL THINKING AND FILM ANALYSIS		COMMUNITY MEETING / INITIAL PROTOTYPE		LOGICAL ORDER OF AN ESSAY
1:30 –3:00	SELF–SELECTED COURSE	DESIGN THINKING WITH MR. BRIGHT	REFINE GUIDING QUESTION	LESSON ON PROFESSIONAL EMAILS	SELF–SELECTED COURSE
AFTER SCHOOL	CO–CURRICULARS	CO–CURRICULARS	CO–CURRICULARS	CO–CURRICULARS	CO–CURRICULARS
EVENING		7–9 NETWORK WITH PROFESSIONALS			

TRANSCRIPTS

Quest provides students with a safe space to further their independent use of critical thinking, creativity, cultural awareness, and collaboration. These skills are embedded in the curriculum, and reflected on the transcript. A traditional transcript will be sent to college admissions officials that reflects the rigor of the program showing the six credits earned in Quest. Students can also choose to take one course at SAS, and as long as it fits in the Quest schedule this request will be accommodated.

Every student in Quest completes the student–driven project which satisfies the Catalyst requirement, and students may choose to receive all, some or no Advance Topic credits for their Quest credits. Students who wish to earn Advanced Topic credits will individually be held to a higher standard of skill acquisition and will define their learning objectives and how they personally go beyond the requirements. Quest is a rigorous program, but with personalized attention so all students can learn at high levels.



"Quest is unique because we are granted the ability to take control of our own learning. We invested time into our passions and established networks and connections with experts. Quest reinforced the importance of time management and being self–motivated. Using these skills helped me work with various NGOs committed to resolving the refugee crisis in Europe and with the Embassy of the European Union in Singapore. Working with these groups and organizations allowed me to set foot into the world we will inherit after we graduate which has given me the chance to get a head start for adulthood."

—Nigel Li (Class of 2017)

English: Research and Composition

ID: 48525 Grade: 11–12 Length: Year
Credit: English

In order to receive credit in English Research and Composition, students must meet the following requirements: research using credible sources, dynamic oral communication, engaging digital communication, and well–composed written essays. For the student–driven project the students will develop an informed research question, then gather and analyze scholarly journals, as well as completing a statistical analysis of their own data. Their research will culmintate in the writing of a thesis paper, thesis talk, and defense. Throughout the units the students will deliver multiple presentations that consider how style, content, and the advanced use of technology contribute to the power, persuasiveness, or beauty of a text (e.g. making documentaries, digital portfolios, websites, crafting arguments that rely on rhetoric to influence an audience). At the end of the year students will be able to communicate effectively in various formats while being mindful of audience and purpose.

AT English: Research and Composition

ID: 48526 Grade: 11–12 Length: Year
Credit: English
Prerequisite: Completion of AP Seminar, AP Research, AT Seminar, AT Research and Catalyst, or AP English Language and Composition; or Semester I grade of A or higher in eleventh grade English course; or current English teacher recommendation.
Note: Quest students who completed AP Seminar and earned a score of three or better on the exam may choose to submit the thesis papers they produce in this course to the College Board for AP Research exam scoring. These students will be supported within Quest to follow the AP Research guidelines. To earn the AP Capstone Diploma, students must earn scores of three or higher on the AP Seminar and AP Research exams and on four additional AP exams.

Please see above for detailed description of English: Research and Composition. Students wishing to earn Advanced Topic credit in English: Research and Composition will practice narrative, oral communication, digital communication, and argumentative skills at a level that demonstrates in–depth application of these skills. Students will complete one additional project per unit. These projects may be self–selected, but may also be suggested by the advisors.

Math: Data Analytics

ID: 48527 Grade: 11–12 Length: Year
Credit: Math
Prerequisite: Completion of Geometry; or recommendation of Quest advisor.

In order to receive credit in Math: Data Analytics, students are required to demonstrate their learning in interpreting categorical and quantitative data, making inferences and justifying conclusions and using probability to make decisions. Students do not need to dwell on the details of computation—the main focus is on understanding a few deep concepts and interpreting data and the results of statistical analysis. Students are required to collect, organize, represent, and analyze data through the use of statistical software or programming language.

AT Math: Data Analytics

ID: 48528 Grade: 11–12 Length: Year
Credit: Math
Prerequisite: Completion of Algebra 2/Trig or higher level Math course with Semester I grade of B or higher; or recommendation of Quest advisor.

Please see above for detailed description of Math: Data Analytics. Students who wish to earn Advanced Topic credit will individually be held to a higher standard of skill acquisition and will need to demonstrate a high level of data processing and analyzing skills. Students are required to collect, organize, represent, and analyze their own data through the use of statistical software or programming language. Students will also be defining their learning objectives and how they personally go beyond the requirements.

Science: Design Thinking

ID: 48529 Grade: 11–12 Length: Year
Credit: Science
Prerequisite: Completion of a chemistry course; or current science teacher recommendation.
Note: For potential college athletes, this course does not meet the NCAA Division I core course requirement for Science. See counselor for details.

Students will learn to produce strong designs, become more effective problem solvers, and communicate effectively with high emotional and intellectual impact. This project–based course requires that students apply engineering, science, math, and technology to solve complex, open–ended problems in a real–world context. Students will focus on the process of defining and solving a problem, not on getting the right answer. In practice, rigor in process and tools must be balanced with flexibility and adaptability towards the problems they solve, so instruction focuses on teaching multiple tested, iterative design processes as well as techniques and mindsets to sharpen creative analysis. Guest lectures from all disciplines illustrate different approaches to design thinking. This course develops students' skills to conceive, organize, lead, implement, and evaluate successful projects in any discipline.

AT Science: Design Thinking

ID: 48530 Grade: 11–12 Length: Year
Credit: Science
Prerequisite: Completion of a chemistry course with grade of B or higher; or completion of a physics course with grade of B or higher; or current science teacher recommendation.
Note: For potential college athletes, this course does not meet the NCAA Division I core course requirement for Science. See counselor for details.

Please see above for detailed description of Science: Design Thinking. AT–level students will be required to go above and beyond the college preparatory design thinking course requirements and demonstrate a higher level of rigor throughout the processes, vetting, production, application, and reflection that occur over the course of the year.

Cultural Awareness and Collaboration

ID: 48533 Grade: 11–12 Length: Year
Credit: Social Studies

Cultural awareness and collaboration requires students to participate in inquiry concerning various cultures in Singapore and around the world. When encountering people from various cultures, students are expected to understand the complexity of worldviews and to practice cultural awareness. They will demonstrate these skills in research, questioning, human interactions, and advocacy. In addition, students will practice and develop skills concerning collaboration with other members of Quest, the advisors, and the members of the wider community such as professionals in the field.

Creativity and Innovation

ID: 48531 Grade: 11–12 Length: Year
Credit: Elective

Creativity and innovation requires that students explore individual and organizational factors that stimulate and inhibit creativity in individuals and teams. Students are expected to demonstrate their ability and willingness to take risks while developing creative solutions and products for specific purposes. Students will reflect deeply within their portfolio and be assessed for their creative thinking processes around standards of courage, ethics, openness, originality, and practicality.

Critical Thinking and Reasoning

ID: 48532 Grade: 11–12 Length: Year
Credit: Elective

In order to receive credit in Critical Thinking and Reasoning, students are required to demonstrate their learning in explaining issues, selecting and using information to investigate a point of view or conclusion, thoroughly analyzing context and assumptions, taking a specific position and discussing the limits of position, and creating a logical conclusion based on the evidence and perspectives discussed.

ADVANCED STUDIES

SAS is committed to providing exceptional learning opportunities for the diverse needs and interests of our students. **Advanced Topic courses and Advanced Placement courses together form our advanced studies offerings.**

Our AT courses provide our students learning opportunities that are relevant, align to our desired student learning outcomes (DSLOs), and are recognized by colleges as a part of a rigorous and challenging course of study. We also recognize and value many of our AP courses and the deep culture that SAS has regarding our AP curriculum. It is for this reason that we have implemented SAS AT courses alongside high quality AP courses; each advanced studies course has been vetted and approved by our vetting team of administration, counselors, teachers, and admissions representatives. We now proudly offer over 40 advanced studies courses.

The 2016–17 course catalog introduced five new AT courses first, and in 2017–18, five more were introduced. This year, we are pleased to introduce two additional AT courses: AT Multivariable Calculus and Linear Algebra and AT Economics: Globalization. Over 20 AP courses remain available to students alongside 25 AP exams. With the SAS advanced studies course offerings, all students are ensured a rigorous and relevant course of study.

In addition, SAS is piloting a co–crediting partnership with Syracuse University through their Project Advance program. The Syracuse University Project Advance (SUPA) program is a concurrent enrollment program linking Syracuse University with secondary schools. Through this partnership, SAS can offer qualified high school students who are taking select Advanced Topic courses the opportunity to concurrently enroll in Syracuse University courses for university credit. During the 2018–19 school year, two courses at SAS will offer concurrent enrollment opportunities: AT Computational Physics and AT Economics: Globalization. Concurrent enrollment is not mandatory, and students will choose whether or not to participate at the beginning of the course. In some cases, students pursuing university credit through Syracuse University may be required to engage in self–study and complete additional assessments. In addition, please note that there is a fee per credit hour that participating students and families must pay. This fee is determined by Syracuse University Project Advance (http://supa.syr.edu). Additionally, we will continue to explore partnerships with Syracuse University for some of our other AT courses for subsequent years.

We are excited to offer these advanced studies courses and opportunities for our students. In addition to the information provided in this guide, we offer extensive responses to many of the most frequently asked questions on our school portal (http://www.sas.edu.sg/AdvancedStudiesFAQs).

We also encourage you to bring your questions to your high school counselors. They will gladly help clarify and are eager to support families and students to plan a course of study.

In this section, we summarize our Advanced Studies offerings. For full course descriptions, please refer to the entries for each course that appear earlier in this guide.

ENGLISH

AP English Language and Composition

ID: 41028 Grade: 11–12 Length: Year
Credit: English
Prerequisite: Semester I grade of B+ or higher in English 10/American Studies is required to select this course in eleventh grade. Students with a Semester I grade of B in English 10/American Studies or a Semester I grade of A+ in English 9/World Studies may select this course if they also obtain a current teacher recommendation.

AP English Literature and Composition

ID: 41029 Grade: 11–12 Length: Year
Credit: English
Prerequisite: Any English AP/AT course; or Semester I grade of B or higher in an eleventh–grade English course; or current teacher recommendation.
Note: This course will be offered for the final time in 2018–19. Beginning in 2019–20, the course will be replaced with an Advanced Topic offering in literature.

AT English: Writing Workshop and Publication

ID: 41046 Grade: 11–12 Length: Year
Credit: English
Prerequisite: Semester I grade of B or higher in an AP English course; or Semester I grade of B+ or higher in English 10/American Studies or in an eleventh grade English offering. Students with a Semester I grade of B in English 10: American Studies or in an eleventh grade English offering may select this course if they also obtain a current teacher recommendation. Students who have signed up will be required to submit a portfolio of creative writing pieces prior to the fall semester in order to remain in the course. See your English teacher for details.
Note: This course was previously named AT English: Writing Seminar. If a credit was earned in that course, you cannot retake it under this new title.

SOCIAL STUDIES

AP US History

ID: 42036 Grade: 10–12 Length: Year
Credit: US History
Prerequisite: Semester I grade of A or higher in World History/World Studies is required to select this course in tenth grade; a B or higher in a tenth or eleventh grade social studies course is required to select this course in eleventh or twelfth grade; or current teacher recommendation.

AP World History

ID: 42039 Grade: 10–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of A or better in World History/World Studies is required to select this course in tenth grade; Semester I grade of B or higher in a tenth or eleventh grade social studies course is required to select this course in eleventh or twelfth grade; or current teacher recommendation.
Note: 2018–19 will be the final time this course is offered. Beginning in 2019–20, the course will be replaced with an Advanced Topic (AT) offering in history. Students who take AP World History may choose to take the AT offering in history for credit. Students who are considering taking this course in eleventh grade are encouraged to speak with their counselors.

AP Human Geography

ID: 42051 Grade: 10–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of A or better in World History/World Studies is required to select this course in tenth grade; Semester I grade of B or higher is required in a tenth grade social studies course to select this course in eleventh grade; or current teacher recommendation.
Note: 2018–19 will be the final time this course is offered. Beginning in 2019–20, the course will be replaced with an Advanced Topic (AT) offering in geography. Students who take AP Human Geography may choose to take the AT offering in geography for credit. Students who are considering taking this course in eleventh grade are encouraged to speak with their counselors.

AP US Government and Politics

ID: 42035 Grade: 11–12 Length: Semester I
Credit: Social Studies
Prerequisite: Semester I grade of B or higher in a tenth or eleventh grade social studies course; or current teacher recommendation.

AP Comparative Government and Politics

ID: 42031 Grade: 11–12 Length: Semester II
Credit: Social Studies
Prerequisite: Semester I grade of B or higher in a tenth or eleventh grade social studies course; or current teacher recommendation.

AT Urban Studies

ID: 42060 Grade: 11–12 Length: Semester
Credit: Social Studies
Prerequisite: AP Human Geography; or a Semester I grade of B or higher in a tenth or eleventh grade social studies course is required to select this course; or current teacher recommendation.

AP Economics

ID: 42045 Grade: 11–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of B or higher in a tenth or eleventh grade social studies course; or current teacher recommendation.

AP Economics (Self–Paced)

ID: 42046 Grade: 11–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of B or higher in a tenth or eleventh grade social studies course; or current teacher recommendation.

AT Economics: Globalization

ID: 42016 Grade: 11–12 Length:
Credit: Social Studies
Prerequisite: AP Economics; or a Semester I grade of A in Economics plus teacher recommendation.
Note: This course offers students an option to pursue possible university credit.

AP Psychology

ID: 42050 Grade: 11–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of B or higher in a tenth or eleventh grade social studies course is required to select this course in eleventh or twelfth grade; or current teacher recommendation.
Note: This course will be offered for the final time in 2018–19. Beginning in 2019–20, the course will be replaced with an Advanced Topic (AT) offering in psychology. Due to significant content similarities, students who take AP Psychology cannot later take the AT offering in pscyhology for credit. Students who are considering taking this course in eleventh grade are encouraged to speak with their counselors.

MATHEMATICS

AP Statistics

ID: 43040 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester 1 grade of A or higher in Accelerated Math I, Algebra II/Trig; or a B or higher in FST; or a C+ or higher in any higher level math course.

AP Calculus AB

ID: 43026 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of an A or higher in Introduction to Statistics and Pre–Calculus, plus teacher recommendation; or semester I grade of B or higher in Pre–Calculus.

AP Calculus BC

ID: 43032 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of A in Pre–Calculus.

AP Calculus BC and Multivariable Calculus

ID: 43027 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of B or higher in AP Calculus AB.

Note: This course will be offered as a full–year course for the last time in 2018–19. Beginning in 2019–20, we will offer a semester–long AP Calculus BC (designed for students who have completed AP Calculus AB) and a semester–long AT Multivariable Calculus.

AT Multivariable Calculus and Linear Algebra

ID: 43036 Grade: 9–12 Length: Year
Credit: Math
Prerequisite: Semester I grade of B or higher in AP Calculus BC.
Note: This course will be offered as a full–year course for the last time in 2018–19. Beginning in 2019–20, we will offer a semester–long AT Multivariable Calculus and a semester–long AT Linear Algebra.

AT Post–Euclidean Geometry

ID: 43041 Grade: 9–12 Length: Semester 1
Credit: Math
Prerequisite: Semester I grade of A or higher in Accelerated Math I or Algebra II/Trig; or a Semester I grade of B or higher in FST; or a Semester I grade of C+ or higher in any higher level math course. Students must also have successfully completed a high school Geometry course or equivalent.

AT Finite Math Modeling

ID: 43042 Grade: 9–12 Length: Semester II
Credit: Math
Prerequisite: Semester I grade of A or higher in Accelerated Math I or Algebra II/Trig; or a Semester I grade of B or higher in FST; or a Semester I grade of C+ or higher in any higher level Math course.

SCIENCE

AT Environmental Science and Field Research

ID: 44036 Grade: 10–12 Length: Year
Credit: Life Science
Prerequisite: Semester I grade of B+ or higher in Accelerated Biology plus concurrent enrollment in a chemistry class is required to select this course in tenth grade. Semester I grade of B or higher in Biology or Accelerated Biology, plus Semester I grade of B+ or higher in Chemistry or B or higher in Accelerated Chemistry are required to select this course in eleventh or twelfth grade.

AP Biology

ID: 44027 Grade: 11–12 Length: Year
Credit: Life Science
Prerequisite: Semester I grade of B or higher in Biology or Accelerated Biology, plus a Semester I grade of B+ or higher in Chemistry or B or higher in Accelerated Chemistry.

AP Chemistry

ID: 44031 Grade: 11–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of A or higher in Chemistry, plus either current teacher recommendation or Semester 2 grade of A or higher in Chemistry; or Semester I grade of B or higher in Accelerated Chemistry.

AP Chemistry (Self–Paced)

ID: 44024 Grade: 11–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of A or higher in Chemistry, plus either current teacher recommendation or Semester 2 grade of A or higher in Chemistry; or Semester I grade of B or higher in Accelerated Chemistry.

AT Computational Physics

ID: 44050 Grade: 10–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of A in Algebra II; or completion of Algebra II/Trig or higher level Math course.

Note: This course offers students options to pursue possible university credit.

AP Physics 1

ID: 44032 Grade: 12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of A in Algebra II; or completion of Algebra II/Trig or higher level Math course.

Note: In 2018–19, the course will be offered for the final time and is available only to seniors. Beginning in 2019–20, SAS will no longer offer AP Physics 1.

AP Physics 2

ID: 44033 Grade: 11–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of B or higher in AP Physics 1 or AT Computational Physics; or Semester I grade of B+ or higher in Physics, plus completion of Chemistry, completion of Accelerated Chemistry, or concurrent enrollment in Accelerated Chemistry.

AP Physics C

ID: 44030 Grade: 11–12 Length: Year
Credit: Physical Science
Prerequisite: Semester I grade of B or higher in AP Physics 1 or AT Computational Physics; or Semester I grade of B+ or higher in Physics, plus completion or concurrent enrollment in AP Calculus AB or AP Calculus BC.

WORLD LANGUAGES

AP Spanish Language and Culture

ID: 45024 Grade: 10–12 Length: Year
Credit: Language
Prerequisite: Current teacher recommendation
Note: Beginning in 2019–20, students who have completed at least one year in the Intermediate-High course will be able to select this course in twelfth grade without a teacher recommendation. A teacher recommendation will still be required to select this course in tenth and eleventh grade.

AP French Language and Culture

ID: 45023 Grade: 10–12 Length: Year
Credit: Language
Prerequisite: Current teacher recommendation
Note: Beginning in 2019–20, students who have completed at least one year in the Intermediate High course will be able to select this course in twelfth grade without a teacher recommendation. A teacher recommendation will still be required to select this course in tenth and eleventh grade.

AP Chinese Language and Culture

ID: 45025 Grade: 10–12 Length: Year
Credit: Language
Prerequisite: Current teacher recommendation
Note: Beginning in 2019–20, students who have completed at least one year in the Intermediate High course will be able to select this course in twelfth grade without a teacher recommendation. A teacher recommendation will still be required to select this course in tenth and eleventh grade.

AT Chinese Language: History

ID: 45029 Grade: 11–12 Length: Year
Credit: Language
Prerequisite: Demonstrated proficiency levels of Advanced Low or higher in all four skills.

TECHNOLOGY, ELECTIVES AND CAPSTONE (TEC)

AP Computer Science

D: 44519 Grade: 10–12 Length: Year
Credit: Elective
Prerequisite: Semester I grade of B or higher in Algebra II/Trig or higher level math course; or Semester I grade of B or higher in Computer Science I; or concurrent enrollment in Algebra II/Trig or Accelerated Math II plus computer science teacher recommendation.

AT Computer Science: Data Structures

ID: 44540 Grade: 11–12 Length: Year
Credit: Elective
Prerequisite: Semester I grade of B or higher in AP Computer Science.

AT Entrepreneurship

ID: 46560 Grade: 10–12 Length: Semester
Credit: Elective
Prerequisite: Semester I grade of A or better in World History/World Studies is required to select this course in tenth grade; a B or higher in a tenth or eleventh grade social studies course is required to select this course in eleventh or twelfth grade, or current teacher recommendation.

AT Seminar

ID: 48520 Grade: 10–12 Length: Year
Credit: Elective
Prerequisite: Semester I grade of A or higher in both English 9 and World History, or Semester I grade of A or higher in World Studies is required to select this course in tenth grade. Semester 1 grade of B+ or higher in English 10: American Studies is required to select this course in eleventh grade.
Note: AT Seminar requires independence, self-regulation, and time management to be successful. Please see the TEC department chair if you have questions.

AT Research and Catalyst

ID: 48515 Grade: 11–12 Length: Year
Credit: Elective
Prerequisite: Semester I grade of B or higher in AP Seminar or AT Seminar.
Note: Completing this course is one of the ways in which a student may fulfill the Catalyst graduation requirement.

VISUAL AND PERFORMING ARTS

AP Studio Art: Drawing

ID: 46111 Grade: 10–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Studio Art; or acceptable portfolio and teacher recommendation.

AP Studio Art: 2D Design

ID: 46112 Grade: 10–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Studio Art; or acceptable portfolio and teacher recommendation.

AP Studio Art: 3D Design

ID: 46113 Grade: 10–12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Studio Art; or acceptable portfolio and teacher recommendation.

AT Performing Arts

ID: 46325 (Dance) / 46326 (Music) / 46327 (Theater)
Grade: 12 Length: Year
Credit: Visual/Performing Arts
Prerequisite: Completion of three courses in the performance discipline and completion of application process detailed below. Specific strands may also include course pre–requisites.

PHYSICAL EDUCATION

AT Kinesiology

ID: 48000 Grade: 11–12 Length: Semester
Credit: Physical Education
Prerequisite: Completion of Biology, plus a Semester I grade of B+ in Chemistry or B in Accelerated Chemistry; or recommendation of PE Department Chair.

QUEST

AT English: Research and Composition

ID: 48526 Grade: 11–12 Length: Year
Credit: English
Prerequisite: Completion of AP Seminar, AP Research, or AP Language and Composition; or Semester I grade of A or higher in eleventh–grade English course; or current English teacher recommendation.

Note: Quest students who completed AP Seminar and earned a score of three or better on the exam may choose to submit the thesis papers they produce in this course to the College Board for AP Research exam scoring. These students will be supported within Quest to follow the AP Research guidelines. To earn the AP Capstone Diploma, students must earn scores of three or higher on the AP Seminar and AP Research exams and on four additional AP exams.

AT Math: Data Analytics

ID: 48528 Grade: 11–12 Length: Year
Credit: Math
Prerequisite: Completion of Algebra 2/Trig or higher level Math course with Semester I grade of B or higher; or current math teacher recommendation.

AT Science: Design Thinking

D: 48530 Grade: 11–12 Length: Year
Credit: Science
Prerequisite: Completion of a chemistry course with grade of B or higher; or completion of a physics course with grade of B or higher; or current science teacher recommendation.
Note: For potential college athletes, this course does not meet the NCAA Division I core course requirement for Science. See counselor for details.

ANTICIPATED ADVANCED STUDIES OFFERINGS

The following courses are currently in development. While they are not offered during the 2018–19 school year, we are pleased to preview them here.

AT Literary Studies

ID: TBD Grade: 11–12 Length: Year
Credit: English
Prerequisite: Any English AP/AT course; or Semester I grade of B or higher in an eleventh grade English course; or current teacher recommendation.
Note: Course name is subject to change. This course is not offered in 2018–19. It will be offered for the first time in 2019–20.

AT Geography

ID: TBD Grade: 10–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of A or better in World History/World Studies is required to select this course in tenth grade; Semester I grade of B or higher is required in a tenth grade social studies course to select this course in eleventh grade; or current teacher recommendation.
Note: Course name is subject to change. This course is not offered in 2018–19. It will be offered for the first time in 2019–20.

AT Psychology

ID: TBD Grade: 11–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of B or higher in a tenth– or eleventh–grade social studies course is required to select this course in eleventh or twelfth grade; or current teacher recommendation.
Note: Course name is subject to change. This course is not offered in 2018–19. It will be offered for the first time in 2019–20. Students who have earned a credit in AP Psychology may not take this course for credit.

AT History

ID: TBD Grade: 11–12 Length: Year
Credit: Social Studies
Prerequisite: Semester I grade of A or better in World History/World Studies is required to select this course in tenth grade; Semester I grade of B or higher in a tenth or eleventh grade social studies course is required to select this course in eleventh or twelfth grade; or current teacher recommendation.
Note: Course name is subject to change. This course is not offered in 2018–19. It will be offered for the first time in 2019–20.

OTHER COURSES

LEARNING SUPPORT

SAS offers targeted services for students who need support, assistance, or further instruction in order to be successful in the regular academic program. The learning support department provides educational intervention to students identified as needing support in their academic course work. The goal of the program is to allow all students to learn at high levels at SAS.

Learning Support I

ID: 47501 Grade: 9 Length: Year
Credit: May be taken for credit or non–credit.
Prerequisite: By school professional referral.

The goal of this course is to help students acquire the skills necessary for success in their academic program. This course includes developing students' executive function skills and development of learning strategies and behaviors for academic success. Through small group instruction, students are assisted in applying these skills and strategies to their course work. This course is not intended to be used as supervised study.

Learning Support II

ID: 47502 Grade: 10–12 Length: Year
Credit: May be taken for credit or non–credit.
Prerequisite: By school professional referral.

The goal of this course is to help students acquire the skills necessary for success in their academic program. This course includes developing students' executive function skills and development of learning strategies and behaviors for academic success. Through small group instruction, students are assisted in applying these skills and strategies to their course work. This course is not intended to be used as supervised study.

English Language Arts Lab I

ID: 47510 Grade: 9 Length: Year
Credit: May be taken for credit or non–credit.
Prerequisite: By school professional referral.

This course is designed to provide assistance to identified students in ninth grade to improve their reading, writing, speaking, listening, and vocabulary skills in English. Students address strategies to read and write effectively. Interventions target reading comprehension, reading speed, organizing ideas for writing, developing writer's craft, revision process, and using grammar and mechanics to compose clear sentences, based on each student's individual needs.

English Language Arts Lab II and III

ID: 47511/2 Grade: 10–12 Length: Year
Credit: May be taken for credit or non–credit.
Prerequisite: By school professional referral.

This course is designed to provide assistance to identified students in tenth through twelfth grades to improve their reading, writing, speaking, listening, and vocabulary skills in English. Students address strategies to read and write effectively. Interventions target reading comprehension, reading speed, organizing ideas for writing, developing writer's craft, revision process, and using grammar and mechanics to compose clear sentences, based on each student's individual needs.

Algebra I Math Lab

ID: 47520 Grade: 9 Length: Year
Credit: May be taken for credit or non–credit.
Prerequisite: By school professional referral.

This course aims to assist identified students with the development of mathematical skills, knowledge, mindset and confidence. Students will receive instruction to improve computational fluency, numeracy, and algebraic skills, while also developing organizational, study, and test taking strategies. Given the small student to teacher ratio, the course focuses on providing individualized interventions, remediation, and pre- and re-teaching, which will target foundational, pre-Algebra, and Algebra skills.

Geometry Math Lab

ID: 47521 Grade: 10–12 Length: Year
Credit: May be taken for credit or non–credit.
Prerequisite: By school professional referral.

This course aims to assist identified students with the development of mathematical skills, knowledge, mindset and confidence. Students will receive instruction to improve computational fluency, numeracy, algebraic, and geometry skills, while also developing organizational, study, and test taking strategies. Given the small student to teacher ratio, the course focuses on providing individualized interventions, remediation, and pre- and re-teaching, which will target foundational, pre-geometry, and geometry skills.

SUPERVISED STUDY PROGRAM

The Supervised Study Program is designed to offer additional support for students who are academically at-risk by providing in-school supervision and structure during free blocks. SAS students are traditionally afforded the privilege of an unscheduled block (80 minutes every other day) during which they are allowed to make choices about their use of time; however, some students do not use their free time in a productive manner and need a more structured location in which to study.

A teacher may temporarily place students into Supervised Study as a way to assist students before they fail. Supervised Study is intended for those students who have the skill but may lack the will to complete their work. Reasons for placement may include (but are not limited to) low grades, missing or inconsistent homework, and poor organizational or time management skills. Supervised Study is not designed to address gaps in content knowledge, or poor behavior. Students found to be struggling in their learning may be placed in Supervised Study until specific tasks are completed or skills are mastered. Teachers will determine the length of a placement (minimum placement is two weeks).

In addition to teacher placements, counselors may place students in Supervised Study based upon poor grades at mid–semester progress time and at the end of each semester. Students who are new to the high school may also be placed in Supervised Study upon their arrival should their previous grades warrant it.

As long as there is room in the class, a counselor can add a student to Supervised Study. Full details and eligibility criteria for Supervised Study program can be found in the student handbook.

INTERIM SEMESTER

Students do not select their Interim Semester courses until the beginning of the academic year. The program is committed to:

- deepening students' understanding of the world around them;
- inspiring students to contribute to the global community;
- encouraging students to challenge themselves; and
- building a sense of community.

Courses are offered in the following categories. Beginning with members of the Class of 2016, students must complete at least one service learning Interim course:

Global Studies: These courses denote active participation and awareness of our interconnectedness with people and cultures around the world. Students will deepen their understanding of the world through themes. These themes may cross any academic discipline and often focus on development (resource management, environmental care, poverty), peace and conflict, cultural expression, and political conditions. Language study, which facilitates all cultural understanding, is also a valued focus area.

Service Learning: These courses have the capacity to touch on each of the desired student learning outcomes of the school's strategic focus. By using the model that knowledge leads to compassion, and compassion to action, service-learning projects give students the opportunity to make a positive impact on the local community in which they work. Service learning provides a framework in which students learn and develop through active contribution in thoughtfully prepared service that meets the needs of the community.

Eco-Adventure: These courses are designed around the belief that the outdoors provides the greatest context for humans to grow socially, emotionally and academically. As such, eco-adventure courses provide students opportunities to learn and develop physically and intellectually while being fully immersed in the natural environment. Students will return from these excursions with an improved self-perception, increased academic skill-set and a robust sense of the environmental dynamics of the region visited.

FLEXIBLE LEARNING OPTIONS

SUMMER SEMESTER

The SAS Summer Semester opens a new learning option, encouraging students to extend, diversify, and accelerate learning from the academic school year. It will allow students to explore new learning paths not available through existing course offerings. The Summer Semester program focuses on the whole child and presents learning opportunities in four distinct categories: intellectual curiosity, creative expression, sports and wellness, and travel adventures and service. Students will have an opportunity to select programs from all categories.

SAS is partnering with world leaders in a variety of fields to offer leading edge programs not available elsewhere in Singapore. These partners have designed exclusive programs for the SAS Summer Semester student. In addition to an SAS Summer Semester transcript, students participating in this programs will receive a Certificate of Participation from the partnering organization.

An SAS Summer Semester transcript will become a part of the student's official academic record. Courses that are eligible for credit will be listed on the SAS transcript as a P (pass) grade, which is similar to how credits are listed on the SAS transcript for students transferring into SAS from any other high school. Credits earned through the SAS Summer Semester could be used to fulfill SAS graduation requirements but would not be included in the calculation of a student's SAS grade point average (GPA). A Summer Semester transcript, including the actual grades or comments, would be sent to colleges as an additional page of the SAS transcript.

Note that Summer Semester courses which allow students to earn high school credit (e.g. biology, geometry) are self-paced. Students work independently to meet the standards of the course. In order to be successful in the program, a student should be self-motivated, focused, and have a keen interest in the subject area. An assessment of the student's progress will be made at the end of the first two weeks. This is to ensure the student is on pace to complete the course. If evidence indicates the student is clearly not on pace to meet the course standards, parents can withdraw the student from the course. They will receive half of the Summer Semester payment for the course back.

SCHOOL YEAR ABROAD

SAS, in partnership with the School Year Abroad (SYA) organization, is proud to offer high school students the opportunity to participate in a one–year study abroad opportunity during their junior or senior year. SAS joins a consortium of elite independent schools including the American School of London, Phillips Academy Andover, Phillips Exeter, St. Paul's School, and Taft in offering this program.

SYA is an independent nonprofit institution that owns and operates campuses in **China, France, Italy, and Spain**. SYA is the only high school study abroad program that requires students to live with a host family for an entire academic year. Our partnership with SYA allows SAS students to access their four language immersion campuses around the world for a year, while remaining SAS students.

Students apply to join SYA by completing an application on the **www.sya.org** website. Students must apply by the end of January to participate in the program during the next academic year, with acceptance decisions made shortly thereafter. Prior to applying, students should speak with their counselor to make certain the program will serve their needs and to review their SAS graduation credits. If accepted by SYA, tuition and fees will be paid directly to SYA. Only the SAS annual enrollment fee, which is required of all SAS students, would be required by SAS.

At the conclusion of the academic year an SYA transcript will be sent to SAS and will become a part of the student's official academic record. The credits will be listed on to the SAS transcript as a P (pass) grade, which is similar to how credits are listed on the SAS transcript for students transferring into SAS from any other high school. Credits earned through SYA could be used to fulfill SAS graduation requirements but would not be included in the calculation of an SAS grade point average (GPA). The actual SYA transcript, including the grades earned, would be sent to colleges as a second page of the SAS transcript providing colleges and universities with a full understanding of the SYA program.

COLLEGE PREPARATION

At SAS, a team of college counselors works with juniors and seniors every year to assist them in the process of selecting and applying to colleges and universities. The focus is on helping students find colleges that will be the best fit for them: colleges to which they are admissible, at which they will be successful and happy, and from which they will graduate.

Every SAS student is assigned a college counselor in the spring of sophomore year. At that point, the college counselor will work with the student on questions regarding curriculum planning and course registration. In the middle of junior year, the college counselors begin the college counseling process in earnest, meeting with students and families to talk about ideas and aspirations and to begin building a college list. The college counseling office also offers a wide range of programming for parents interested in learning more about college admissions.

The best way for students to prepare for college is to have robust academic and extracurricular lives. All students will benefit from investing themselves fully in a wide range of courses and from becoming meaningfully engaged in several extracurricular activities. But each student's college interests and search will be unique. The SAS college counselors are here to work with each individual student and family to talk about the journey ahead.

WHAT COLLEGES AND UNIVERSITIES CONSIDER

When admissions officers in the US review applications, they take a broad range of factors into consideration. At most schools, the first and most important factors are grades, course choices and rigor, and SAT or ACT scores. Most schools in the US will then also look at letters of recommendation, student essays, involvement in activities, and the college's own institutional priorities. US colleges like to see students who are both engaged in the classroom and who contribute to their communities in various ways.

Each year, between 10 and 20 percent of SAS seniors choose to apply to colleges in locations such as Australia, Canada, Japan, Singapore, South Korea, and the UK. Each of these countries reviews applications differently. The SAS High School College Counseling website has information about these countries and the factors they use in their admissions reviews.

At most non-US schools, students are required to be certain of their course of study at the time of application. Unlike in the US, where students can apply as "undecided," there is rarely such a thing as "undecided" in other countries. This means that students must be prepared to launch into a specific course of university study—and to stay with it for three years or until the degree is completed. Therefore, students interested in studying at non–US schools would generally benefit from deciding on their intended course of college study early on. In consultation with their college counselor, they should plan their course schedule with careful attention to the field that they think they might like to pursue in the future.

Most universities in the UK require that students sit for three AP exams (or five, in a handful of cases) related to their intended area of study. So students who are UK-bound should plan accordingly. Students should also look to round out their studies with Advanced Study (AP and AT) or regular course choices that will allow them to demonstrate their dedication to a particular field. The SAS college counselors are happy to provide additional information about course choices and how they relate to admission in the UK.

COURSE SELECTION AND COLLEGE

US colleges expect each student to pursue a curriculum that is appropriately rigorous—in other words, one in which the student can be challenged and can also be academically successful. This means that, when choosing high school courses, it is important to take a strong academic program—but it is even more important for students to take classes that they enjoy and in which they can earn strong grades.

The minimum SAS graduation requirements are just that: minimums. All students should look at the **recommended for college column** rather than the minimum credits column when deciding how many years of study to pursue in a given subject area. Students should speak to teachers and counselors for advice on exactly which courses to take.

When choosing classes, it is important to know that the level of academic challenge will vary from one student to another and from one subject to another. Our advanced studies courses—AP

and AT courses—are more challenging, asking students to undertake rigorous and sophisticated assignments and to work independently. When choosing courses, students who enroll in advanced studies classes must plan on dedicating significantly more time each day. Students should take this into consideration and be realistic about what they can and will do. Most students do not begin taking APs and ATs until eleventh or twelfth grade.

While both AP and AT courses receive a GPA bump at SAS, no US colleges require that students take advanced studies courses. US colleges simply want each student to take a course load that is appropriately rigorous. Most schools in the UK require that students sit for three (and, in a few rare instances, five) AP exams in their area of interest, so students who are UK-bound should plan to take at least three AP classes. Schools in Singapore, South Korea, and a few programs at a handful of universities in Australia will also expect to see some AP scores.

It is important to note that, while US colleges are looking for academically able students who have challenged themselves academically, they also want students who have contributed to their school or community. Colleges are looking for interesting people who will become active members of their campuses. They will seek out students who are significantly involved with and can demonstrate that they care about a few meaningful extracurricular activities. Students should, therefore, plan to balance their academic load with their other interests and activities.

GPA CALCULATION

Students applying to colleges and universities may be asked to submit a wide range of test scores. In the US, the most important standardized tests are the ACT and the SAT. In the UK, students must demonstrate their preparation for a particular subject area by submitting AP exam scores. A few colleges and universities may also ask students to submit Subject Test scores and/or English language proficiency scores from tests such as the TOEFL or IELTS. Students will work with their college counselors in junior year to develop testing plans appropriate to their college aspirations.

We do not recommend that students begin standardized testing until the middle of junior year (unless a particular test is aligned with a student's course choice, such as a specific AP exam or Subject Test). When it does come time to start the standardized testing process, students may wonder whether they should take the SAT or the ACT. There is no right answer to this question; most students fare equally well on both exams, and colleges and universities accept the two tests interchangeably. We suggest that students sit for a brief diagnostic of each test and see which of the two tests feels more comfortable and better suits their abilities.

STANDARDIZED TESTING

We recommend that each SAS student take either the SAT or the ACT at least once between December and April of their junior year. There is rarely any benefit to taking the test earlier than the winter of eleventh grade.

The best way to prepare for the SAT and the ACT is to read a lot and to engage fully in classes and homework. Students can self–study for these tests using a range of preparation books—we have many in the high school library—or by taking advantage of free online programs such as those offered by Khan Academy. We also offer practice testing here at SAS every October in the form of the PSAT9 for ninth graders, the Pre–ACT for tenth graders, and the PSATs for eleventh graders. Some students may choose to enroll in a formal test preparation course; however, please be aware that such test preparation is best done six to eight weeks before the test itself. There is no evidence that engaging in test preparation any earlier than this will help increase test scores.

It is worth noting that there are hundreds of US colleges that no longer require any standardized testing as part of their admissions processes. A list of these colleges may be found at www.fairtest.org.

Additional information about standardized testing may be found in the testing section of the SAS High School College Counseling website.

COLLEGE APPLICATION POLICIES

Each junior will be provided with a comprehensive list of SAS's college application policies at the junior family meeting, but we would like to highlight two of our policies here:

Maximum Applications

The maximum number of applications SAS will process is 10 per student. This is a lifetime, worldwide limit. Each application that SAS processes counts as a single application, whether the student is applying to a college for the first time or is reapplying as a first year student. The only exception is this: within the limit of 10 applications per student, the University of California and UCAS system applications each count as one. This policy is in the best interest of our students, encouraging them to research colleges carefully, choose colleges of true interest to them, and focus meaningfully on each application—thus enhancing their chances of admission. Universities are well aware of this policy and wholeheartedly support it. Historically, the average number of applications submitted is between five and six.

Disciplinary Reporting Policy

SAS will disclose any disciplinary infraction resulting in an out-of-school suspension when asked about disciplinary infractions by colleges.

APPENDIX I: COURSE SELECTION INSTRUCTIONS

Before Requesting Courses

After reviewing the information in this guide, use the four–year planning chart in the Appendix or in Family Connection to develop a high school plan of study. Make certain that the minimum graduation requirements are fulfilled, but remember they are just that—minimum requirements. College-bound students graduate with significantly more than the minimum credits. Students should enroll a challenging academic program in which they can be successful while also having time to participate in some activities.

How to Request Courses

- For students who do not plan to return to SAS next year, please complete this process anyway. It will help us plan for new students and can help students think about courses to consider whether at SAS or a different school. Teachers and counselors are happy to answer any questions about this request process or any of the SAS courses.
- Either parents or students can login to PowerSchool and click the class registration icon to open the course selection screen. Access to this page is only available during the registration period in spring. Follow the on–screen instructions to select courses for next year.
- All students must enroll in the correct number of credit hours. Students going into ninth or tenth grade must have seven, and students in eleventh or twelfth grade must have between six and seven credits.
- Click a subject area to see the available courses. The list of available courses is based upon the courses already completed, the prerequisites that have been met, or the recommendations entered by current teachers. New students who recently joined our school and have no SAS course history may appear to be missing a prerequisite. See a counselor so that prerequisite courses can be manually added.
- PowerSchool disconnects from the server after 15 minutes of inactivity. When a user clicks submit after a long period of inactivity, the login screen will sometimes appear instead of a summary. If that happens, login again and re–enter course requests.
- Once the correct number of credits has been entered, parents agree to the choices and click submit. The course requests will be displayed. Until the request period ends, students or parents can go back and review or change course requests.

Reviewing Graduation Credits

After submitting course requests and a summary of courses has been displayed, students can check graduation progress by clicking the **view graduation progress** link. These charts combine the credits that have been completed, are in–progress this semester, and have been requested for next year. The top graph shows progress at meeting minimum SAS graduation requirements, and the bottom one shows progress toward fulfilling typical college preparatory expectations.

While students don't need to be concerned if PowerSchool temporarily assigned credits in a different combination than expected (e.g., Dance could be assigned to either PE or Art), each area should be fulfilled once senior courses are entered. If not, stop by the College counseling office.

APPENDIX II: COURSE LIST

English
World Studies 2xYR
English 9 ..... YR
American Studies..... 2xYR
English 10 ..... YR
Creative Writing..... S1
British Literature S1
Literature/Imagination S1
Read, Write, and Publish ... S1
American Literature S2
21st Century Literature S2
Studies in Satire S2
World Literature..... S2
AP English Lang/Compo ... YR
AP English Lit/Compo ..... YR
AT English Writing Workshop /Publication ..... YR

Social Studies
World Studies 2xYR
World History..... YR
American Studies..... 2xYR
US History and Govt..... YR
AP US History ..... YR
History of Malaysia/Sing ... SM
AP World History ..... YR
AP Human Geography ..... YR
AP US Gov/Politics S1
AP Comparative Gov..... S2
AT Urban Studies..... SM
Economics ..... SM
Behavioral Econ/Game..... SM
AP Economics..... YR
AT Econ: Globalization ..... SM
Psychology ..... SM
AP Psychology..... YR

Mathematics
Algebra I..... YR
Geometry ..... YR
Algebra II/Trig..... YR
Conceptual Algebra II ..... YR
Intro to Stats/PreCal ..... YR
Accelerated Math I ..... YR
Accelerated Math II ..... YR
Pre–Calculus ..... YR
Discrete Math ..... YR
AP Statistics ..... YR
AP Calculus AB ..... YR
AP Calculus BC..... YR
AP Cal BC/Multivariable .... YR
AT Multivariable Cal/LinearYR
AT Post–Euclidean Geo S1
AT Finite Math Modeling... S2

Science
Biology ..... YR
Accelerated Biology*..... YR
Biotechnology ..... SM
Environmental Science ..... SM
Forensic Science..... SM
Marine Biology ..... SM
Anatomy and Physiology .. SM
Zoology ..... SM
AT Env Sci/Field Research . YR
AP Biology..... YR
Physical Science..... YR
Chemistry ..... YR
Accelerated Chemistry ..... YR
AP Chemistry..... YR
Physics ..... YR
Engineering Space Tech .... YR
AT Computational Physics . YR
AP Physics 1..... YR
AP Physics 2..... YR
AP Physics C ..... YR

World Languages
French: Novice ..... YR
French: Intermediate ..... YR
French: Intermediate II ..... YR
French: Intermediate III ..... YR
French: Intermed High ..... YR
French: Intermed High II ... YR
French: Intermed High III... YR
AP French Lang/Culture .... YR

Spanish: Novice..... YR
Spanish: Intermediate ..... YR
Spanish: Intermediate II..... YR
Spanish: Intermediate III.... YR
Spanish: Intermed High..... YR
Spanish: Intermed High II .. YR
Spanish: Intermed High III . YR
Spanish: Advanced..... YR
AP Spanish Lang/Culture... YR

Chinese: Novice ..... YR
Chinese: Intermediate ..... YR
Chinese: Intermediate II .... YR
Chinese: Intermediate III ... YR
Chinese: Intermed High .... YR
Chinese: Intermed High II . YR
Chinese: Intermed High III YR
Chinese: Advanced ..... YR
AP Chinese Lang/Culture .. YR
AT Chinese Lang: History .. YR

TEC
Comp Sci/Emerging Tech
Emerging Tech..... SM/YR
Computer Science I ..... SM
Mobile App Dev ..... SM
Graphic Design..... SM
Digital Game Develop..... SM
AP Computer Science ..... YR
AT Computer Science..... YR

Engineering/Robotics
Intro to Robotics..... SM
Robotic Science..... SM/YR
Engineering Science..... YR

Business
Business..... SM
Business of Sports ..... SM
Personal Finance ..... SM

Journalism
Newspaper ..... YR
Yearbook..... YR

Capstone/Catalyst
AT Entrepreneurship..... SM
AT Seminar ..... YR
AT Research Catalyst ..... YR
SAS Catalyst Project ..... SM
Independent Learning..... SM
Global Online Academy ... SM

Visual/Performing Arts
Visual Arts
Art I Foundations..... SM
Ceramics I..... SM
Ceramics II..... SM
Mixed Media/Digital ..... SM
Studio Art ..... YR
AP Art: Drawing..... YR
AP Art: 2D Design ..... YR
AP Art: 3D Design ..... YR

Theater
Stagecraft ..... SM
Foundations..... SM
Improvisation..... SM
Adv Improvisation ..... SM
Production S2
Film/Acting Ensemble ..... SM
Sketch Comedy ..... SM
Musical Theater S2

Film/Photography
Filmmaking ..... SM
Adv Filmmaking..... SM
Digital Photography ..... SM
Adv Digital Photography .. SM

Instrumental Music
Concert Band ..... YR
Symphonic Band ..... YR
Wind Ensemble ..... YR
Jazz Improvisation S1

Strings
Concert Strings..... YR
String Ensemble ..... YR
Chamber Strings..... YR

Vocal Music
Concert Choir ..... SM/YR
Choral Ensemble ..... YR
SAS Singers ..... YR

Additional Music
Introduction Guitar ..... SM
Advanced Guitar ..... SM

Dance
Dance I ..... SM
Dance II ..... SM
Dance III ..... SM
Dance Performance ..... YR

Advanced Option
AT Performing Arts ..... YR

Physical Education
Fld Hockey/Softball/Golf .. SM
Fit for the Body/Mind ..... SM
Group Fitness ..... SM
Group Fitness II ..... SM
Indoor Sports..... SM
International Sports ..... SM
Climbing/Adventure Tr ..... SM
Personal Defense..... SM
Racquet Sports ..... SM
Soccer/FlagFtbl/Rugby..... SM
Track: Running ..... SM
Weight Training I ..... SM
Weight Training II ..... SM
Lifeguarding ..... SM
AT Kinesiology..... SM

Health/Wellness
Body Systems ..... SM
Safety/First Aid ..... SM
Life Balance ..... SM
Life Skills ..... SM

Quest
Eng: Research/Compo ..... YR
AT Eng: Research/Compo . YR
Math: Data Analytics ..... YR
AT Math: Data Analytics ... YR
Sci: Design Thinking ..... YR
AT Sci: Design Thinking .... YR
Cultural Awareness ..... YR
Creativity/Innovation ..... YR
Critical Thinking ..... YR

Advanced Studies
AP English Lang/Compo ... YR
AP English Lit/Compo ..... YR
AT English Writing Workshop /Publication ..... YR
AP US History ..... YR
AP World History ..... YR
AP Human Geography ..... YR
AP US Gov/Politics S1
AP Comparative Gov..... S2
AT Urban Studies..... SM
AP Economics..... YR
AT Econ: Globalization ..... SM
AP Psychology..... YR
AP Statistics ..... YR
AP Calculus AB ..... YR
AP Calculus BC..... YR
AP Cal BC/Multivariable .... YR
AT Multivariable Cal/LinearYR
AT Post–Euclidean Geo S1
AT Finite Math Modeling... S2
AT Env Sci/Field Research . YR
AP Biology..... YR
AP Chemistry..... YR
AT Computational Physics . YR
AP Physics 1..... YR
AP Physics 2..... YR
AP Physics C ..... YR
AP Spanish Lang/Culture... YR
AP French Lang/Culture .... YR
AP Chinese Lang/Culture .. YR
AT Chinese Lang: History .. YR
AP Computer Science ..... YR
AT Computer Science..... YR
AT Entrepreneurship..... SM
AT Seminar ..... YR
AT Research Catalyst ..... YR
AP Art: Drawing..... YR
AP Art: 2D Design ..... YR
AP Art: 3D Design ..... YR
AT Performing Arts ..... YR
AT Kinesiology..... SM
AT Eng: Research/Compo . YR
AT Math: Data Analytics ... YR
AT Sci: Design Thinking .... YR

Learning Support
Learning Support I..... YR
Learning Support II..... YR
English Lang Arts Lab I ..... YR
English Lang Arts Lab II/III YR
Algebra I Math Lab ..... YR
Geometry Math Lab ..... YR
Permission/assessment is required for these courses.

APPENDIX III: OVERVIEW OF ADVANCED STUDIES OFFERINGS

DEPARTMENT	2017-18	2018-19	2019-20	2020-21
English				
AP English Language	✓	✓	✓	✓
AP English Literature	✓	✓	-	-
AT Literary Studies* *(place-held name)*	-	-	✓	✓
AT Writing Workshop & Publication	✓	✓	✓	✓
Mathematics				
AP Calculus AB	✓	✓	✓	✓
AP Calculus BC	✓	✓	✓	✓
AP Calculus BC/Multivariable	✓	✓	semesterised	semesterised
Honors Multivariable Calculus & Linear Algebra	✓	-	-	-
AT Multivariable Calculus & Linear Algebra	-	✓	semesterised	semesterised
AP Calculus BC *(semester long)*	-	-	✓	✓
AT Multivariable Calculus *(semester long)*	-	-	✓	✓
AT Linear Algebra *(semester long)*	-	-	✓	✓
AP Statistics	✓	✓	✓	✓
AT Post-Euclidean Geometry *(semester long)*	✓	✓	✓	✓
AT Finite Math Modelling *(semester long)*	✓	✓	✓	✓
Physical Education				
AT Kinesiology *(semester long)*	✓	✓	✓	✓
Science				
AP Biology	✓	✓	✓	✓
AP Chemistry	✓	✓	✓	✓
AT Environmental Science & Field Research*	✓	✓	✓	✓
AP Physics 1	✓ (available only to juniors & seniors)	✓ (available only to seniors)	-	-
AT Computational Physics*	✓	✓	✓	✓

	2017-18	2018-19	2019-20	2020-21
AP Physics 2	✓	✓	✓	✓
AP Physics C	✓	✓	✓	✓
Social Studies				
AP Gov & Politics: Comparative *(semester long)*	✓	✓	✓	✓
AP Gov & Politics: US *(semester long)*	✓	✓	✓	✓
AP Human Geography	✓	✓	-	-
AT Geography *(place-held name)*	-	-	✓	✓
AP Macroeconomics *(in full year AP Economics)*	✓	✓	✓	✓
AP Microeconomics *(in full year AP Economics)*	✓	✓	✓	✓
Honors Advanced Economics: Globalization	✓	-	-	-
AT Economics: Globalization	-	✓	✓	✓
AP Psychology	✓	✓	-	-
AT Psychology *(place-held name)*	-	-	✓	✓
AT Urban Studies *(semester long)*	✓	✓	✓	✓
AP US History	✓	✓	✓	✓
AP World History	✓	✓	-	-
AT History *(place-held name)*	-	-	✓	✓
Technology, Electives, Capstone				
AP Computer Science	✓	✓	✓	✓
AT Computer Science: Data Structures	✓	✓	✓	✓
AT Entrepreneurship *(semester long)*	✓	✓	✓	✓
AT Seminar*	✓	✓	✓	✓
AT Research & Catalyst*	✓	✓	✓	✓
Visual & Performing Arts				
AP Art Portfolio (Drawing)	✓	✓	✓	✓
AP Art Portfolio (2D)	✓	✓	✓	✓
AP Art Portfolio (3D)	✓	✓	✓	✓
AT Performing Arts (Music, Dance, or Theater)	✓	✓	✓	✓

	2017-18	2018-19	2019-20	2020-21
World Languages				
AP Chinese Language and Culture	✓	✓	✓	✓
AP French Language	✓	✓	✓	✓
AP Spanish Language	✓	✓	✓	✓
Quest				
*AT Data Analytics, AT Design Thinking, AT Research & Composition**	*available through our Quest program*			

* denotes an AT course where the AP exam will still be offered
‡ number does not include ATs available through the Quest program

NB: All offerings are year long unless otherwise stated. Should any additional ATs be developed that will replace an AP, a year of course refinement and community education will occur after the development year.

APPENDIX IV: FOUR–YEAR PLANNING CHART

Department	Ninth grade	Tenth grade	Eleventh grade	Twelfth grade	To Graduate	College Recom'd	Total Earned
English					4	4	
Math					2	4	
Science	Biology				2	3–4	
Soc Studies US citizens and University of California applicants are required to complete a US History course.					2	3–4	
Language					Intermediate	3-4	
V/P Arts University of California requires one credit or two semesters in the same type of V/P art.					1	1	
PE					1.5		
Health		Required in tenth grade			0.5		
Catalyst Project					See General Information section for options		

**Please note that courses offered are subject to change.*

Minimum Total Credits for Graduation = 24

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NOTES:

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