



# HIGH SCHOOL PROGRAM PLANNING GUIDE

2021-22



# USING YOUR PROGRAM PLANNING GUIDE

At Singapore American School, we believe that every student is unique. With access to over 180 college-preparatory, support, and college-level courses, SAS students can pursue pathways that meet their diverse needs and interests. We are committed to assisting students with developing programs of study that meet their academic and college goals, lead to a healthy lifestyle, and afford ample opportunities 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.

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 carefully choose courses each spring for both semesters of the following school year. Students who are new to SAS will meet with a counselor to select courses after enrollment. All students and families are responsible for taking the time to fully understand what a course will cover, whether there are any 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.

All members of the SAS faculty are available to assist students and families as courses are selected for the next academic year. Please feel free to contact us. We look forward to another fantastic school year!

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## NOTEWORTHY IN 2021-22

The 2021–22 school year will bring some changes to Singapore American School. We are excited to offer a new course 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.

### QUEST PROGRAM - WHAT IS NEW IN QUEST?

- **One-Day Quest for Juniors and Seniors**

The one-day Quest option is open to interested juniors and seniors. The one-day option is an enhancement to SAS students' existing educational opportunities already available through our mainstream course offerings. One-day Quest students will earn four credits by engaging with interdisciplinary projects and institutional partnerships (similar to an unpaid internship) personalized to their interests.

- **Two-Day Seniors-Only Quest - Full Immersion**

The two-day Quest option allows for a senior to be *all-in*. The benefit of the two-day program is the opportunity to maximize time for off-campus experiential learning, such as completing a partnership (similar to an unpaid internship) up to five days per week or in-depth research in the first semester. In the second semester, students continue to have the flexibility and time for other off-campus or off-island opportunities outside of school.

- **Quest Elements Common to One-Day and Seniors-Only Two-Day Program**

Students of both the one-day and two-day options have opportunities for the partnership and the year-long in-depth research. Both will also fulfill the Catalyst graduation requirement. Every student in Quest completes a research thesis called the student-driven study (SDS), and students may choose to receive all, some, or no Advanced Topic credits for their Quest credits.

Please see the Quest section of this guide for more information on the new course offerings.

### NEW COURSES FOR 2021-22

- **AT Spanish Language: Latin American History and Culture Through Arts & Media (World Language Department)**

The World Language department is excited to offer an additional opportunity for our Spanish language learners. AT Spanish: Latin American History and Culture provides further opportunities to pursue all modes of communication at the college level.

The decision to add an additional Spanish course was informed by feedback from students, parents and counselors. We are thankful for, and always welcome, such feedback.

### ANTICIPATED NEW COURSE FOR 2022-23

- **Modern Philosophy (Social Studies Department)**

The Social Studies department is looking forward to adding Modern Philosophy to our course offerings in 2022-23. The purpose of this course is to provide students with the fundamental knowledge and skills necessary to critically examine contemporary ethical and philosophical situations.



## ADDITIONAL UPDATES FOR 2021-22 AND BEYOND

### 1. Impact of the SAS Curriculum Review Cycle

SAS continually engages in review and reflection of our various curriculum and programs. During the 2020-21 school year, PK-12 school-wide reviews of our Learning Support and Math department programming were conducted. We formed student, faculty, and parent focus groups to support and strengthen this work, and to align our practices with our beliefs as a community.

Furthermore, our health department continues to process emerging themes regarding a proactive approach to student wellness and child safeguarding. We want our high school students to be empowered to advocate for their own wellness and safety. As a school community, we will continue to engage in building deeper curricular ties in our health courses to support these emerging themes.

We highlight these curricular reviews in our Program Planning Guide as the outcomes of this school year's work may guide additional improvements during the 2021-22 school year within our Health, Learning Support, and Math departments.

### 2. Math Department: Course Name Changes and Alignment

As a result of our curriculum review process, the math department realigned curriculum so that more students have access to higher level math courses. Thus, the current *Introduction to Statistics and Precalculus (ISP)* course will become *Precalculus with Statistics* in the 2021-22 school year and can satisfy the prerequisite for *AP Calculus AB*. Additionally, the current honors-level *Precalculus* course will become honors-level *Precalculus with Parametrics* in the 2021-22 school year and can satisfy the prerequisite for both *AP Calculus AB and BC*. Both of these new courses can fulfill the prerequisite for *AP Statistics*. We are excited about these opportunities to provide more access to advanced courses for our students.

### 3. Science Department: AT Computational Physics Review

As a part of our commitment to continuous review and reflection on our Advanced Studies program, we engage regularly in curriculum and program renewals of our Advanced Studies courses. AT Computational Physics was one of our first Advanced Topic offerings and during the 2020-21 school year, a committee of stakeholders (including students and parent focus groups) engaged in a review of the AT Computational Physics course to assess success and identify areas for possible further development or change. The key findings and improvements resulting from the review team's work are summarized below:

- In our current program, AT Computational Physics serves simultaneously as a first-year physics course and as an introduction to the scientific applications of computational modeling. The review team has concluded that our students' learning would be better supported if the school addressed these two functions via two distinct courses. This key finding has prompted the school to move towards teaching key concepts associated with first-year physics separately from (and prior to) teaching computational modeling.
- Based on the review team's recommendation, the high school science department will develop a new year-long, honors-level Accelerated Physics course. Accelerated Physics will complement our existing Accelerated Biology and Accelerated Chemistry courses and will provide students with a focused initial physics experience. This new course will emphasize the key concepts typically addressed in first-year physics courses. Students who wish to continue their study of physics by exploring computational modeling may subsequently take the new semester-long AT Physics: Computational Modeling course that is described below.
- Like Accelerated Biology and Chemistry, Accelerated Physics will carry an honors designation on the SAS transcript and will not receive any additional grade point weighting. Accelerated Physics will be developed next year and will first be taught during the 2022-23 school year. It will be accessible to students in grades 10, 11, and 12, and it will provide students with

an improved first-year physics experience. The course will also accelerate students' ability to access other advanced-level physics courses, including our new AT Physics: Computational Modeling course, AP Physics 2, and AP Physics C.

- Once students have completed a year of initial physics study, they will be better equipped to explore computational modeling. The review team has recommended that our current AT Computational Physics be re-developed as a new second-year, semester-length AT course tentatively titled AT Physics: Computational Modeling. The new AT course will continue to focus on the scientific applications of computational modeling as well as on our Advanced Topic criteria. Like all other Advanced Studies courses, the new AT course will receive additional grade point weighting.
- The new AT Physics: Computational Modeling course will first be taught during the 2023-24 school year. The current AT Computational Physics course will continue to be offered through the end of the 2022-23 school year.
- Based on the recommendation of the review team, the new Accelerated Physics course will be aligned to the [Next Generation Science Standards \(NGSS\)](#). Accelerated Biology and Accelerated Chemistry are also aligned to NGSS. Ensuring that Accelerated Physics students master these standards will help them to develop into exceptional scientific thinkers and to be prepared for the continued study of physics. While Accelerated Physics is not designed to prepare students for the AP Physics 1 exam, the course will cover the concepts assessed on that exam, and students who are enrolled in Accelerated Physics may sit for the AP Physics 1 exam at SAS. Since this is not an AP course, it will not count towards the AP credit limit. We note that from a college standpoint, AP Physics 2 and AP Physics C are more highly valued than AP Physics 1. By offering Accelerated Physics, the school will ensure students have greater access to the AP Physics 2 and AP Physics C and are better prepared to be successful in those courses. Once we have concluded our course development work, the High School Head of Advanced Studies will explore potential co-crediting options with university partners.

#### 4. Social Studies Department: Courses in Alternating Years

As the department continues to review, update, and expand our current course offerings, we will be moving some of our non-advanced semester courses to alternating years (i.e., some courses will only be offered every other year). We use this approach in other departments and this will enable us to provide students with more choices over their 4 years in high school. Please pay attention to the 'Notes' section of each social studies course to identify which year(s) courses will be offered in which years.

#### 5. Grade 9 Humanities

As part of the research and development process, interdisciplinary learning was identified as a key recommendation for the High School. It was recommended *"that all students will be required to take an Interdisciplinary/Project-Based Learning course upon their arrival at SAS. This course will teach the skills and content needed to excel through the SAS experience."* Similar sentiments about the importance of making cross-curricular, interdisciplinary connections have been shared with us by college admissions representatives and industry leaders. Over the past 3 years, grade nine programming in the high school English and Social Studies department has continued to evolve through a review process. A formal research and recommendation process was conducted by a team of teachers in 2019-20 resulting in the decision to unify our grade nine program with a single structure and curriculum. Therefore, 2021-22 will be the final year that World Studies 9, English 9, and World History 9 will be offered. In 2022-23, all grade nine students will enroll in a singular grade 9 English and World History humanities course. This course will address our school's learning aspirations through both Common Core and the C3 framework curriculum standards in an interdisciplinary model and provide us the opportunity to make connection, community and collaboration a hallmark of the grade 9 experience. We formed student, faculty, and parent focus groups to support and strengthen this work, and will continue to refine this work throughout the 2020-21 and 2021-22 school years.



For more information, please visit the grade nine humanities webpage (<https://www.sas.edu.sg/mysas-portal/high-school/humanities-g9>)

## 6. Requesting a Prerequisite Override

During the 2020-21 school year, we are reviewing our process to request a prerequisite override for a course. Currently, in exceptional circumstances, students who do not meet a course grade or specific course prerequisite may approach their teachers and department chair for consideration of a prerequisite override or teacher recommendation. The criteria to consider and approve an override or teacher recommendation is established by the teachers currently teaching the student and by the teacher(s) of the course the student is requesting. We highlight this process in our Program Planning Guide, as the outcomes of this school year's review may influence changes for the 2021-22 school year.

# GENERAL INFORMATION

## HIGH SCHOOL DAILY SCHEDULE

Our high school follows a 4 day block schedule rotation. This means that students meet with each of their teachers for 75-80 minutes every other day. Additionally, students meet with their advisory twice a week for 30 minutes. Each day they also have a 35 minute lunch block.

## SCHEDULE CHANGES

Please select courses carefully! Since returning students have opportunities in April and May 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. Please note the additional facts related to schedule changes:

- Students must speak with a counselor to request changes.
- All requests must be for educationally sound reasons and approved by a counselor.
- Changes are subject to availability in classes. For this reason, it is important that students choose courses in March that they intend to remain in for the school year.
- 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.
- The add/drop period ends after the eighth school day.
- 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 the courses for the entire senior year when they apply to most colleges.
- Should a change in a senior's second semester courses be made, colleges must be notified of those changes. 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.

## 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
World Language**	**	3-4
Visual/Performing Arts	1.0	1
Physical Education	1.5	
Health Education	0.5	
Catalyst Project	0.5	
Minimum Total Credits***	24.0	

*Clarifying Details:*

\*Social Studies : US citizens (not dual citizens) are required to earn one credit in U.S. 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 would not necessarily 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 Interim service course (0.25 credit) is required.

## ADVISORY, HOUSE SYSTEM & STUDENT GOVERNMENT

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

Advisory serves as an essential component of our character education program. Every student who is enrolled at SAS is expected to participate in advisory and attendance is mandatory.

Each advisory is composed of approximately 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 twice per week for 30 minutes. 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 meetings 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 best ensure the social/emotional health of all students; improve academic success; and 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. 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 and to take ownership in a successful project process. Further, grading is based on process and not product, so what students choose for their project is less important than how they conduct their work. 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 and that they will have developed skills that are essential for their future.

## FREQUENTLY ASKED QUESTIONS

### Where can I learn more about the Advanced Studies program?

On our online portal, a comprehensive frequently asked questions webpage is available (<https://www.sas.edu.sg/academics/high/advanced-studies/helpful-resources/faqs>) to help answer 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 to plan a course of study with their child.

### How many AP courses can my child take?

To ensure students enroll in a balanced selection of courses, the school has capped the total number of Advanced Placement credits that a student may earn. Starting with the graduating class of 2021, students may earn up to seven (7.0) year-long-equivalent AP credits during their high school careers.

### What does the AP credit limit mean for access to AP exams?

In 2021-22, we will offer a combined total of over 40 Advanced Placement (AP) and Advanced Topic (AT) courses within the Advanced Studies program.

It is possible for students who plan appropriately to take more than seven AP examinations - in some instances, as many as 15 AP examinations.

There are a number of AT courses that permit enrolled students to sit the associated AP exam:

- AT Environmental Science & Fieldwork (AP Environmental Science exam)
- AT Computational Physics (AP Physics 1 exam)
- AT Seminar (AP Seminar exam)
- AT Research & Catalyst (AP Research exam)
- AT English: Literature (AP English Literature exam)

We also offer two year-long credit AP courses that provide students access to two separate AP exams per course. These courses provide one credit and two exams:

- The AP Economics course offers both the AP Macroeconomics exam and the AP Microeconomics exam
- The AP Physics C course offers both the AP Physics C: Electricity & Magnetism exam and the AP Physics C: Mechanics exam

Finally, we offer two half-credit semester-long AP courses. Each of these semesters offers access to one exam per course:

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

### **What is the AP Capstone Diploma?**

To receive the AP Capstone Diploma, students must successfully complete both AT Seminar and AT Research & Catalyst. In addition, they must earn a score of 3 or higher on both the AP Seminar and AP Research exams, and earn a score of 3 or higher on four additional AP exams of their choosing. A student will typically take AT Seminar in the sophomore or junior year, followed by AT Research & Catalyst. The AP Capstone Diploma is awarded by the College Board.

### **How can I fulfill my Catalyst project graduation requirement?**

There are four 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 build skills that allow them to self-direct their learning and:

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

### **What are the Catalyst options?**

All four of the options below fill the Catalyst graduation requirement. There are some significant differences between them.

#### **1. 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.

#### **2. AT Research & Catalyst**

After successfully completing AT Seminar, most of our students enroll in the year-long AT Research & Catalyst. AT Research & 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.

#### **3. AT Performing Arts & Catalyst**

AT Performing Arts 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. Students apply for the program. The application process is as follows:

- students audition as per usual for higher-level performance groups.
- upon passing the audition, students submit a written application.
- applicants are vetted by a Performing Arts teacher panel. During the school year, AT Performing Arts students across disciplines meet weekly to conduct guided research, explore methodologies, develop performances, establish connections with artistic advisors, and engage in in-depth reflection.



#### 4. Quest

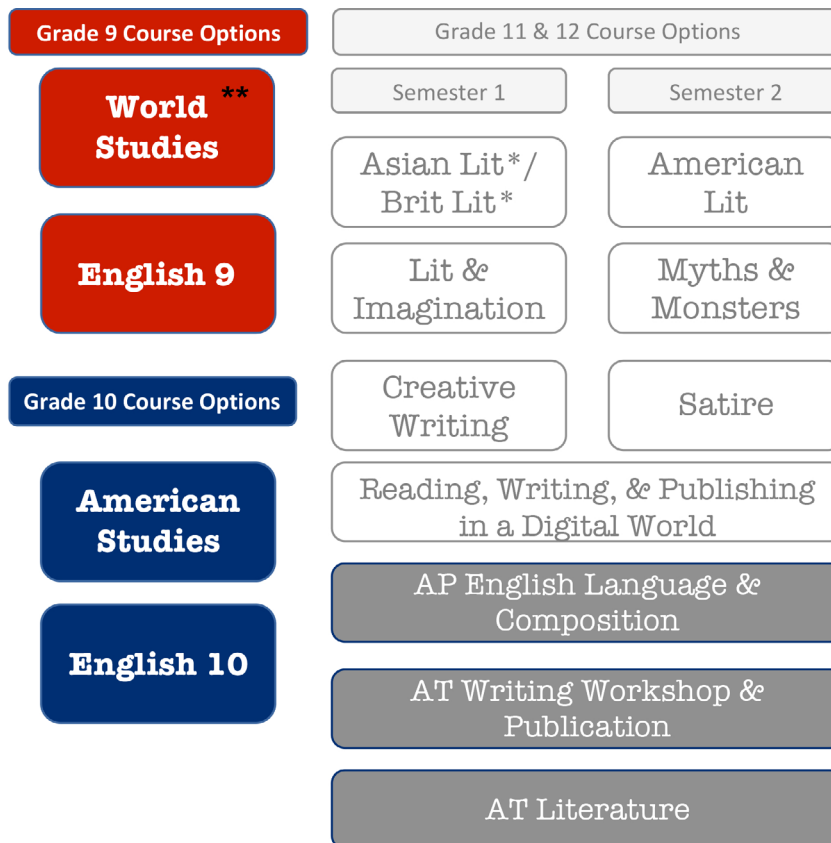
Quest is an immersive program that supports students in pursuing their curiosity and passion. Instead of taking traditional courses, students earn six credits through interdisciplinary projects that are personalized to their interests. The year culminates with a junior or senior project thesis paper,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

### FOUR WAYS TO FULFILL THE CATALYST GRADUATION REQUIREMENT

SAS Catalyst Project	AT Research & Catalyst	AT Performing Arts & Catalyst	Quest
<ul style="list-style-type: none"> <li>Students earn their graduation requirement through this personalized course (one semester is the minimum requirement)</li> <li>Prerequisite: None. This course is accessible to everyone in their junior or senior year</li> <li>Note: Optionally, students may extend their Catalyst experience by taking the course for a second semester</li> </ul>	<ul style="list-style-type: none"> <li>Students earn their Catalyst graduation requirement through this year-long AT course</li> <li>Prerequisite: Successful completion of AT Seminar</li> <li>Notes: Students who successfully complete AT Seminar and AT Research &amp; Catalyst are also eligible to earn the AP Capstone Diploma; a student must complete the full year in AT Research to satisfy the Catalyst graduation requirement</li> </ul>	<ul style="list-style-type: none"> <li>Students earn their Catalyst graduation requirement through this year-long AT course</li> <li>Prerequisite: Enrollment to the program by application in senior year</li> <li>Note: Due to the essential, collaborative nature of AT Performing Arts, students must remain enrolled in this course for the full year in order to satisfy the Catalyst graduation requirement</li> </ul>	<ul style="list-style-type: none"> <li>Students earn their Catalyst graduation requirement through their personalized participation in the Quest program</li> <li>Prerequisite: Enrollment to the Quest program via application in junior or senior year</li> <li>Note: Quest is an immersive program; students earn credits by pursuing interdisciplinary projects that are personalized to their interests</li> </ul>

# ENGLISH

The English curriculum focuses on the areas of reading, writing, speaking and listening, research, and language. Each area will be assessed in every English course in various ways, and students skills will be revisited and refined over the course of the four-year program. Students must take an English class every semester they attend SAS. All ninth-grade students must take English 9 or World Studies, while tenth-grade students must take English 10 or American Studies. Upperclassmen may opt to take any of the following courses during the eleventh and twelfth grade years: AP English Language and Composition, AT English: Writing Workshop & Publication, AT English: Literature, or the Junior/Senior option courses. Please note that enrolling in some of these courses requires students to first meet stated prerequisites.



\* Courses offered alternating years.

\*\* Grade nine English and World History programming are undergoing a curriculum review. The 2021-22 school year will be the final year that World History, English 9, and World Studies will be offered. In 2022-23, there will be one humanities course that all 9th-grade students will take.

## FAQ: What factors should ninth graders consider when deciding between English 9 and World Studies?

English 9, World History, and World Studies each challenge students to dive more deeply into covered content knowledge and empower students to make meaningful connections across disciplines. As a double-block course, World Studies meets every day with the same teacher. English 9 and World History each meet every other day. For students enrolled in English 9 and World History, transcripts will include two independent grades, whereas students in World Studies will receive a single grade that counts for both their English and Social Studies credits. Whether a student elects to take World Studies or English 9 and World History, the student will need to engage thoughtfully with content 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. Both pathways will prepare students for higher level social studies and English courses (Advanced Studies).

**World Studies (English 9/World History)**

ID: 41005      Grade: 9      Length: Year  
Credit: English/Social Studies (2)

Prerequisite: None

*Note: Double block/credit in English and World History. Our grade nine English and World History programs are undergoing a curriculum review. The 2021-22 school year will be the final year that World History, English 9, and World Studies will be offered. In 2022-23, all ninth graders will be enrolled in a humanities course to meet their English and Social Studies credit requirements.*

*For more information, please visit the grade 9 humanities webpage (<https://www.sas.edu.sg/mysas-portal/high-school/humanities-g9>).*

This interdisciplinary 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. It meets daily, earning students both an English and a Social Studies credit upon completion. Students will read critically, analyzing historical texts alongside complementary literary texts organized by the conceptual frameworks of environment and values, power, globalization, and revolution. Students will develop their argumentative, informative, and narrative writing skills and pursue research projects of personal interest. Through these projects, students will develop questions, read and think like a historian, evaluate sources, and communicate ideas. They will also develop their vocabulary using the individually levelled program, Membean, and refine their syntax through the study of a variety of sentence constructions. Students are expected to participate fully in class discussions, work in small groups, and make formal presentations, with a focus on persuasive speaking skills. They will be challenged to demonstrate the development of their skills and understandings in final culminating projects.

**English 9**

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

Prerequisite: None

*Note: Our grade nine English and World History programs are undergoing a curriculum review. The 2021-22 school year will be the final year that World History, English 9, and World Studies will be offered. In 2022-23, all ninth graders will be enrolled in a humanities course to meet their English and Social Studies credit requirements.*

*For more information, please visit the grade 9 humanities webpage (<https://www.sas.edu.sg/mysas-portal/high-school/humanities-g9>).*

English 9 is a year-long survey course which focuses on building a strong foundation of skills as well as an appreciation of literature and language through thematic units. Over the course of the year, students will write for a variety of purposes (to analyze, to inform, to reflect, to convince, and to narrate) and read a variety of texts (from novels, plays, poetry, and short stories to nonfiction). As members of the class community, students will also practice and refine their discussion and presentation skills to both build and share their understandings. Finally, language study in English 9 allows students to refine their knowledge of grammar and vocabulary to clarify, elaborate, and analyze. English 9 culminates in an interdisciplinary project with World History that allows students to explore topics of interest using the inquiry cycle and to present on those topics using multiple genres.

**American Studies (English 10/US History & Government)**

ID: 41014      Grade: 10      Length: Year  
Credit: English/US History (2)

Prerequisite: None

*Note: Double block/credit in English and U.S. History & Government*

This course is a thematic study of the American experience through the lenses of history, economics, civics and literature, with a focus on skills development. Through the thematic units "American Values and the Meaning of Citizenship," "All Men are Created Equal?," "Push and Pull: Following the Dollar," and "War, Peace and Global Leadership," 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 U.S. History & Government credit. Throughout the year, students will develop their writing in a variety of genres (e.g., argument, narration, analysis, synthesis), responding insightfully to both literature and history. They will also pursue course-related areas of interest for their research projects. Accordingly, students will critically read a variety of nonfiction, fiction and poetry reflecting the American Experience. In addition to their in-class reading, students will be encouraged to read widely outside of class in order to make connections. The course will require participation in class discussions, collaborative work in small groups, and several presentations. Language usage and mechanics instruction will focus on student's writing needs. Students will also continue to develop skills in visual literacy by critically viewing documentaries and films.

## English 10

ID: 41013      Grade: 10      Length: Year  
Credit: English  
Prerequisite: None

English 10 is primarily a survey of American Literature in which students are asked to think critically and reflect on essential questions throughout the year: What are my values and where do they come from? How do the works we've read and the characters we've met cast a light on societies represented in the literature and reflect our own? Instruction and assignments are focused on improving all aspects of language: reading, writing, listening, and speaking. Students read a variety of classic and contemporary fiction, nonfiction, drama, and poetry, along with regular independent reading, with the goal of moving from comprehension into critical reading. The course emphasizes the discussion of literature to further students' understanding of themes that surface through the reading. The writing of short essays is stressed through rhetorical and literary analyses and informative, narrative, and argumentative pieces, including a focus on revision. Instruction on language usage and mechanics focuses on students identifying and correcting problems evident in their writing and development of sophisticated sentence fluency.

## JUNIOR/SENIOR OPTIONS

The junior and senior options continue the development of skills and intensive study of literature of a college preparatory English sequence. These 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.

## JUNIOR/SENIOR SEMESTER I OPTIONS

### Asian Literature: An East-West Perspective

ID: 41019      Grade: 11–12      Length: Semester  
Credit: English  
Prerequisite: None

*Note: Will be offered in 2021-22. May not be offered in 2022-23.*

The Asian Literature course gives students an opportunity to explore traditional and modern texts created and produced in Asia or by Asian authors abroad. It begins in Singapore, where students write creative narratives about the country in which they live and read literature from the island. They will then expand to a broader continental lens through multiple texts—a compilation of retold myths from across the region paired with a selection of novels that they will read in smaller literature circles. These discussion texts will ask students to examine their culture viewpoints and pre-conceptions. They will conclude the semester by selecting a modern popular cultural text to research and analyze. This engaging inquiry project allows



them to investigate Asian pop culture, their own media use and tastes, and Asia's cultural impact on the modern world.

### **British Literature: The World of Shakespeare**

ID: 41006    Grade: 11–12    Length: Semester I  
Credit: English

Prerequisite: None

Note: Will not be offered in 2021-22. May be offered in 2022-23.

This semester-long course is designed for students who would like to read Shakespeare's plays and poems closely, critically, and creatively. Students will develop close reading and viewing skills, explore Shakespeare's language, and experiment with themes and literary features in critical and creative writing, discussion, and informal performance. Study will focus on craft, meaning, inquiry, and both individual and collaborative exploration of Shakespeare's sonnets and plays (comedy, tragedy, history, romance).

### **Creative Writing**

ID: 41042    Grade: 11–12    Length: Semester  
Credit: English

Prerequisite: None

This 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 Advanced Topic Writing Workshop and Publication, it does serve as an excellent foundation and introduction to the creative writing process.

### **Literature & the Imagination (Science Fiction)**

ID: 41011    Grade: 11–12    Length: Semester I  
Credit: English

Prerequisite: None

Through the reading and viewing of both classic and contemporary science fiction, students in this course will examine the philosophical (ethical), scientific, and political ideas developed in this genre. 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. Consequently students will examine/analyze and explore both written text and film via essays, close reading commentaries, and discussions. Students will also get the chance to write their very own science fiction stories. The variety of science fiction writers and directors includes (but is not limited to) H.G. Wells, Mary Shelley, Ray Bradbury, Robert Heinlein, Ridley Scott, and Denis Villeneuve.

## **JUNIOR/SENIOR SEMESTER II OPTIONS**

### **Contemporary American Literature**

ID: 41008    Grade: 11–12    Length: Semester II  
Credit: English

Prerequisite: None

Contemporary American Literature explores short stories, graphic novels, novels, nonfiction, poetry, and film from 1980 through the present. Students who want to glimpse into modern American culture and discuss controversial perspectives, voices, and values will enjoy this course. Skills practiced in the course include researched arguments, literary analysis responses, creative responses to reading, participating in literature circle discussions, and presenting critical lenses within a novel. The course culminates with a personalized research project that demonstrates the skills learned throughout the semester with a contemporary text.

**World Literature: Myths & Monsters**

ID: 41017    Grade: 11–12    Length: Semester II  
Credit: English

Prerequisite: None

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, stories and films that feature classic and contemporary visions of vampires, demons, ogres and perhaps the most frightening monster of all - mankind. Students should expect to work both independently and with peer groups to examine readings and explore ideas. The course will require development of skills in literary analysis, close reading of challenging text, discussion and exploration of philosophical ideas connected to the literature, as well as research and presentation of information.

**Studies in Satire**

ID: 41022    Grade: 11–12    Length: Semester II  
Credit: English

Prerequisite: None

This semester course is designed for students who wish to explore and analyze a variety of satire throughout the ages to examine just how satire works. Students will begin by exploring 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 a variety of satirical texts ranging from classical to more contemporary examples. The texts studied will include essays, short video clips, music, and full-length films. Throughout the semester, students will focus on developing the following skills: explanatory writing, presentation, argument writing, and close reading. Students will even get a chance to try their hand at writing their very own satire. Overall, the course seeks to enhance students' critical thinking skills by closely analyzing the criticisms inherent in works of satire.

**JUNIOR/SENIOR FULL-YEAR OPTIONS****Reading, Writing, & Publishing in a Digital World**

ID: 41025    Grade: 11–12    Length: Year  
Credit: English

Prerequisite: None

In this year-long course, students will examine how the Internet has fundamentally changed the ways we communicate, altering how we think, speak, and write about our world. In semester one, this course considers intellectual histories of past and contemporary media in order to help students frame how they think, read, write, speak and publish today. Students read classic and contemporary literature to reflect upon how our personal, social and national narratives are evolving. Consideration of audience is a central focus of this class. Why do we acquire and publish digital content? With so much power to disseminate descriptions, expositions, arguments and stories comes great responsibility. Students will critically analyze, evaluate, write, and speak using digital mediation, exploring a wide variety of genres and forms. During semester two, this course returns to and focuses upon the most innate, human medium: oral communication. Students will learn and practice real-time, interpersonal communication skills. They will study the rhetoric of Socrates, Aristotle and Cicero to provide a solid foundation for speech construction and delivery. The course will culminate with students inquiring into a technology-related area of their choosing and performing a multi-modal presentation.

**ADVANCED STUDIES COURSE OPTIONS****AP English Language & 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 11th grade. Students with a Semester I grade of B in English 10/American Studies or a Semester I grade of A+ in both English 9 & World History or World Studies may seek an override which requires approval from current English teacher, counselor, and English department chair.  
Note: This course has an additional grade point weighting of 0.5.

AP English Language & Composition is a university-level course in which students read and write for a variety of rhetorical purposes. Over the course of one year, students will learn skills of rhetorical analysis, argument, and argumentative synthesis. Texts for the course vary and are drawn

from any rhetorical situation from the last four centuries, requiring students to respond to both current controversies and enduring philosophical questions. Students planning to take AP Language & Composition during their junior year are cautioned: successful completion of the course requires a much greater effort and is significantly more demanding than English 10. Students best suited to this course are avid, proficient readers, attuned to current events, and interested in understanding the power of language to shape our identities, our perceptions, and our world. Students will be prepared for and will be strongly encouraged to sit for the AP exam in May.

### AT English: Writing Workshop & Publication

ID: 41046      Grade: 11–12      Length: Year  
Credit: English

*Prerequisite:* Any English AP/AT course; or Semester I grade of B or higher in an 11th-grade English course; or Semester I grade of B+ or higher in English 10/American Studies. Students with a Semester I grade of B in English 10/American Studies may seek an override which requires approval from current English teacher, counselor, and English department chair.

*Note:* 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.

*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. This course has an additional grade point weighting of 0.5.*

Designed for students who already have a regular writing practice in any creative genre, and can demonstrate a passion for creative writing, this course is an inquiry into the world of writing and publication, culminating in publication of an anthology of works composed, edited, designed, and marketed by students. Students will learn creativity and collaboration skills as a backdrop to their focus on writing. Skills we develop include idea generation, giving and responding to peer feedback, intensive revision, and purposeful reflection. Students will have the choice to learn editing, design, marketing, or events planning on smaller teams. The course features workshops to improve drafting and editing skills, study and analysis of writing that focuses on process and audience, encounters with visiting local and international authors, and a writers' retreat to encourage growth of relationships

and community. The course demands rigorous independent work and responsibility to meet community expectations and deadlines.

### AT English: Literature

ID: 41047      Grade: 11–12      Length: Year  
Credit: English

*Prerequisite:* Any English AP/AT course; or Semester I grade of B or higher in an 11th-grade English course; or Semester I grade of B+ or higher in English 10/American Studies. Students with a Semester I grade of B in English 10/American Studies may seek an override which requires approval from current English teacher, counselor, and English department chair.

*Note:* Students who have signed up will be required to submit a short video prior to the fall semester in order to remain in the course. This video serves to introduce you as a reader and creator. See your English teacher for details.

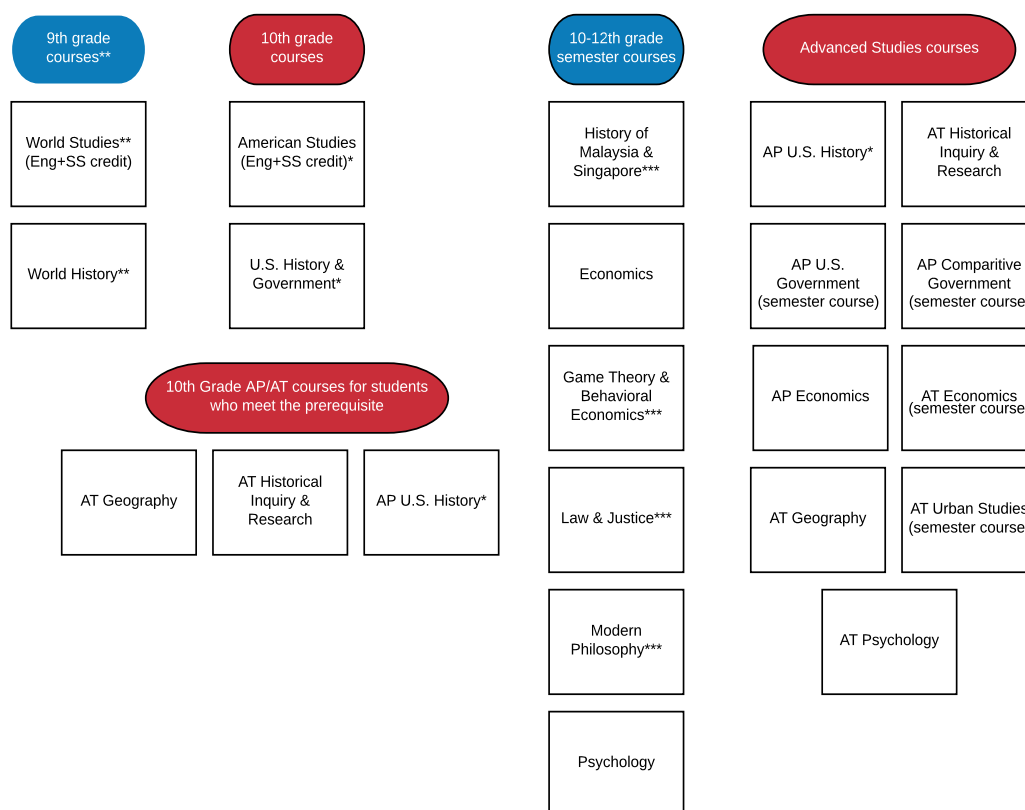
*The Advanced Topic (AT) designation indicates a course is at university level, putting it at or above the level of a traditional Advanced Placement (AP) course. This course has an additional grade point weighting of 0.5.*

AT English: Literature is for avid readers interested in pursuing deeper and more creative ways to read. The course will build a critical reading community that discusses, questions, shares, and creates. There will also be opportunities to make choices and decisions about texts and assessments. The central question of the course is: How does engaging with a text through multiple modalities deepen understanding and relevance? Integral to the course are long-term reading and reinvention projects where students will respond to and reinvent a text through performance and other creative works. Students will also learn to interpret texts through conventional academic lenses; writing and revising to analyze, propose and reflect. The course has a demanding reading, writing and creating workload, and is meant for students who are interested in challenging literary texts combined with a cognitive mentorship approach in which the teacher learns and creates alongside the students as a member of the reading community.

# SOCIAL STUDIES

Social Studies offerings are consistent with the SAS Desired Student Learning Outcomes (DSLOs), and are designed to allow students to develop and demonstrate character, collaboration, communication, creativity, critical thinking, cultural competence, and core 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 take action as they 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, psychology, and philosophy, as well as the opportunity to take Advanced Studies Courses in many of those disciplines.

## SOCIAL STUDIES COURSE OPTIONS



\*U.S History credit.

\*\*Grade nine English and World History programming are undergoing a curriculum review. The 2021-22 school year will be the final year that World History, English 9, and World Studies will be offered. In 2022-23, there will be one humanities course that all 9th-grade students will take.

\*\*\*Courses offered alternating years.

## REQUIRED NINTH-GRADE WORLD HISTORY OPTIONS

All SAS ninth grade students must be enrolled in either World History or World Studies, which is a double-block course that combines English 9/World History course.

World History, English 9 and World Studies each challenge students to dive more deeply into covered content knowledge and empower students to make meaningful connections across disciplines. As a double-block course, World Studies meets every day with the same teacher. World History and English 9, each meet every other day. For students enrolled in World History and English 9, transcripts will include two independent grades, whereas students World Studies will receive a single grade for both their English and Social Studies credits. Whether a student elects to take World History or World Studies, the student will need to engage thoughtfully with content 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. Both pathways will 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)

Prerequisite: None

*Note: World Studies is a combined double-block English 9 and World History course. Our grade nine English and World History programming are undergoing a curriculum review. The 2021-22 school year will be the final year that World History, English 9, and World Studies will be offered. In 2022-23, all ninth graders will be enrolled in a humanities course offering to meet their English and Social Studies credit requirements.*

For more information, please visit the grade 9 humanities webpage (<https://www.sas.edu.sg/mysas-portal/high-school/humanities-g9>).

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

Prerequisite: None

*Note: All ninth graders must enrol in either this course or World Studies. Our grade nine English and World History programming are undergoing a curriculum review. The 2021-22 school year will be the final year that World History, English 9, and World Studies will be offered. In 2022-23, all ninth graders will be enrolled in a humanities course offering to meet their English and Social Studies credit requirements.*

For more information, please visit the grade 9 humanities webpage (<https://www.sas.edu.sg/mysas-portal/high-school/humanities-g9>).

World History will provide students with the opportunity to explore critical issues, individuals, and turning points in the history of the world from various cultural perspectives. 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 evaluate primary and secondary sources, and communicate ideas in group discussion, written essays, and presentations. Through the conceptual 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 concepts, supported by historical evidence and evaluate the various ways

to be engaged citizens. The course concepts and skills are linked to the English 9 course and students will be encouraged throughout the year to make connections between these courses.

**U.S. HISTORY OPTIONS**

All U.S. citizens (not dual citizens) must earn one credit in U.S. History. The courses listed below meet this requirement.

**American Studies (English 10/U.S. History)**

ID: 41014      Grade: 10      Length: Year

Credit: English/US History (2)

Prerequisite: None

*Note: American Studies is a combined double-block English 9 and US History & Government course.*

The course meets daily with the same teacher. Sophomores can either choose the double-block American Studies or choose English 10 and either US History & Government, AP U.S. History or any other social studies course.

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

**U.S. History & Government**

ID: 42012      Grade: 10–12      Length: Year

Credit: US History

Prerequisite: None

U.S. History & Government enables students to make thoughtful judgments on issues of the past, present, and future. Students will analyze events in U.S. History for their significance and relevance to today. We will foster independent learning, and student voice and choice. The first semester will feature analysis of the U.S. Constitution and government, and student participation in history and government competitions. The second semester will conclude with a simulation in which students will immerse themselves in solving challenges facing the U.S. and the world. The students will study the history of the United States as experienced by a variety of different groups of people, many of whom have been traditionally marginalized in the teaching of this course. Students will be assessed on the acquisition of core knowledge, their ability to apply knowledge, and the connections they make between material

they learn and the United States today. Students will demonstrate their knowledge and skills in a number of different ways, with inquiry projects playing a significant role in each quarter of the year.

## ADDITIONAL SOCIAL STUDIES SEMESTER COURSE OFFERINGS (GRADE 10-12)

### History of Malaysia & Singapore

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

Prerequisite: None

Note: Offered in 2020-21 and 2022-23. Will not be offered in 2023-24.

This course provides an overview of the events and forces that have created the modern nations of Malaysia and Singapore. Students will consider 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 paths followed on their roads to independence. Emphasis will also be placed on Singapore and Malaysia today. Students will examine these societies, cultures, economies, and political development through simulations, debates, independent research, lectures, field trips, and visits from Singapore artists.

### Modern Philosophy

ID: 42025 Grade: 10–12 Length: Semester  
Credit: Social Studies

Prerequisite: None

Note: Will not be offered in 2021-22. Will be offered in 2022-23.

This course will require students to examine concepts such as logic, happiness, and reality to construct arguments answering questions such as: "What do I know for sure?", "Over the ages, how has the definition of happiness changed across different cultures?" and "How does reality differ amongst individuals?" Students will read and analyze different multicultural philosophers' engagement with life's most interesting ethical dilemmas. Students will be asked to come prepared to have intellectual conversations, engage in inquiry and develop creative projects to synthesize sources from media to experts. The purpose of Modern Philosophy is to provide students with the fundamental knowledge and skills necessary to critically examine contemporary

ethical and philosophical situations. This course promotes independent thinking and encourages critical examinations of philosophical writings.

### Law & Justice

ID: 42024 Grade: 10–12 Length: Semester  
Credit: Social Studies

Prerequisite: None

Note: Offered in 2021-22. Will not be offered in 2022-23.

This course has been developed to promote a cross-cultural understanding of the law. Students will compare the legal systems of the United States and Singapore. Law & Justice is intended to provide SAS students with the ability to understand U.S. government, individual rights, laws and legal disputes, as well as those of our host country. Students will be encouraged to engage deeply with social policy guided by significant themes in jurisprudence and theories of justice, including individual liberty, privacy, democracy, and the relationship between the citizen and the state. We will accomplish this through case studies, and mock trials of landmark and contemporary conflicts. Students who take part in Law & Justice will discuss and write about current and controversial issues, engage in simulations of democratic practices, receive pertinent civic instruction, interact with experienced lawyers and jurists, and learn how to formulate arguments in support of policies they advocate. Students will gain a practical understanding of law and the legal system, historical and current controversies, and how this system might relate to their everyday lives.

### Economics

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

Prerequisite: None

Note: This course is not available for students who have already completed advanced studies in economics.

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 & Game Theory**

ID: 42023      Grade: 10–12      Length: Semester  
Credit: Social Studies

Prerequisite: None

*Note: This course does not meet the NCAA Division I core course requirement for Social Studies. See counselor for details. Offered in 2021-22. Will not be offered in 2022-23.*

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 come from history, current world events, and the immediate world around us. Individual analysis, small group discussion, and class discussion are common formats. The final project will be a research paper applying Game Theory concepts to a ‘real life’ example.

**Psychology**

ID: 42010      Grade: 10–12      Length: Semester  
Credit: Social Studies

Prerequisite: None

*Note: This course is not available for students who have already completed advanced studies in psychology.*

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.

**ADVANCED STUDIES COURSE OPTIONS****AP U.S. 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 grade 10; a B or higher in a 10th- or 11th-grade social studies course is required to select this course in grades 11 or 12, or current teacher recommendation.*

*Note: This course meets the U.S. History credit requirement for U.S. citizens (not dual citizens). This course has an additional grade point weighting of 0.5.*

This course provides students with an understanding of major themes in U.S. history, including American identity, economic and social life, political change and continuity, and the U.S. 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. Students are required to be internally motivated, to have good reading comprehension and analytical writing 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.

**AT Historical Inquiry & Research**

ID: 42064      Grade: 10–12      Length: Year  
Credit: Social Studies

*Prerequisite: Semester I grade of A or higher in World History/World Studies is required to select this course in grade 10; a B or higher in a 10th- or 11th-grade social studies course is required to select this course in grades 11 or 12, or current teacher recommendation.*

*Note: 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. This course has an additional grade point weighting of 0.5.*

This in-depth, focused history course fosters in students the skills that professional historians use in their work. Students will begin in the field of historiography by examining trends in the historical profession. From this base, students engage in 4 historical inquiries, becoming progressively more open and responsive to student choice and interest. Students are expected to develop and nurture a passion for history throughout, and will

designate an area of specialization for their final inquiry. It is expected that students will produce academic works, public products, engage in in-person interviews, and defend their conclusions and methodologies.

### AP U.S. Government & Politics

ID: 42035 Grade: 11–12 Length: Semester I  
Credit: Social Studies

*Prerequisite:* Semester I grade of B or higher in a 10th- or 11th-grade social studies course is required; or current teacher recommendation.

*Note:* This course has an additional grade point weighting of 0.5.

AP U.S. Government and Politics provides a college-level, nonpartisan introduction to key political concepts, ideas, institutions, policies, interactions, roles, and behaviors that characterize the constitutional system and political culture of the United States. Students will study U.S. foundational documents, Supreme Court decisions, and other texts and visuals to gain an understanding of the relationships and interactions among political institutions, processes, and behaviors. They will also engage in current policy debates and electoral events, and will explore their political socialization and emerging ideology. This is usually a first semester course. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

### AP Comparative Government & Politics

ID: 42031 Grade: 11–12 Length: Semester II  
Credit: Social Studies

*Prerequisite:* Semester I grade of B or higher in a 10th- or 11th-grade social studies course is required; or current teacher recommendation.

*Note:* This course has an additional grade point weighting of 0.5.

AP Comparative Government and Politics introduces students to the rich diversity of political life globally. The course uses a case study approach to examine the political structures; policies; and political, economic, and social challenges of six selected countries: China, Iran, Mexico, Nigeria, Russia, and the United Kingdom. Students compare the effectiveness of approaches to many global issues by examining how different governments solve similar problems. In this discussion based course, they will read and interpret data, make comparisons and applications, and develop evidence-based arguments. Throughout we will explore current policy events in our six case studies and globally. This is usually a second semester course. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

### AT Geography & Field Research

ID: 42063 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 grade 10; a Semester I grade of B or higher is required in a 10th-grade social studies course to select this course in grade 11; or current teacher recommendation.

*Note:* 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. This course has an additional grade point weighting of 0.5.

Geography takes advantage of its position to examine relevant concepts and ideas from a wide variety of disciplines. This helps students develop an appreciation of, and a respect for, alternative approaches, viewpoints and ideas. This course focuses on four major themes of human geography and ensures that students acquire elements of a variety of research and fieldwork methodologies. The AT Geography course embodies global and international awareness in several distinct ways. It examines key global issues and utilizes examples and detailed case studies at a variety of scales, from local to regional, national to international. This is an inquiry-based course that will involve fieldwork in a variety of locations in Singapore, as well as research projects on a variety of global locations and issues.

### AT Urban Studies

ID: 42060 Grade: 11–12 Length: Semester  
Credit: Social Studies

*Prerequisite:* AT Geography; or a Semester I grade of B or higher in a 10th- or 11th grade social studies course is required to select this course; or current teacher recommendation.

*Note:* 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. This course has an additional grade point weighting of 0.5.

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 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. All assessments for this course are inquiry/project-based, with no traditional 'pencil-and-paper' tests.

### AP Economics

ID: 42045      Grade: 11–12      Length: Year  
Credit: Social Studies

*Prerequisite: Semester I grade of B or higher in a 10th- or 11th-grade social studies course; or current teacher recommendation.*

*Note: This course has an additional grade point weighting of 0.5.*

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, this course, where students proceed at the normal AP pace, and a self-paced AP Economics (42046). 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 10th- or 11th-grade social studies course; or current teacher recommendation.*

*Note: This course has an additional grade point weighting of 0.5.*

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 or higher in Economics plus teacher recommendation.*

*Note: Students may elect to earn Syracuse University credit by concurrently enrolling in SUPA ECN 203. Students must enrol 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 enrol. For further information, please see the SUPA 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.*

*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. This course has an additional grade point weighting of 0.5.*

This 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 course requires rigorous study and emphasizes in-depth research.

## AT Psychology

ID: 42062      Grade: 11–12      Length: Year  
Credit: Social Studies

*Prerequisite: Semester I grade of B or higher in a 10th- or 11th-grade social studies course; or current teacher recommendation.*

*Note: Students who have taken AP Psychology previously are not eligible to take this course. This course is aligned to the criteria for a Syracuse University psychology course (SUPA PSY 205). AT Psychology: students may elect to earn Syracuse University credit by concurrently enrolling in SUPA PSY 205. Students must enrol in the Syracuse University system at the beginning of AT Psychology. Please note that there is a cost per Syracuse University credit hour that families must pay if students choose to concurrently enrol. For further information, please see the SUPA 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.*

*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. This course has an additional grade point weighting of 0.5.*

AT Psychology introduces students to the scientific study of human behavior and mental processes. Through examining basic theories, research discoveries, and the applied use of psychology, students will understand multiple perspectives demonstrating that, while psychology covers diverse topics they are not separate and distinct, rather they are integrated and together combine to give us the entire picture of human behavior, cognition, and emotion. Students will learn to access, critically read, and evaluate current research in the field of psychology and will conduct both individual and group research into a topic of interest, thus gaining a strong understanding of the psychological principles as applied to their lives and the world around them. They will complete the course with a strong foundation in scientific research methodology. Students in AT Psychology will have the option to take it as a dual-enrollment course with Syracuse University.

# MATHEMATICS

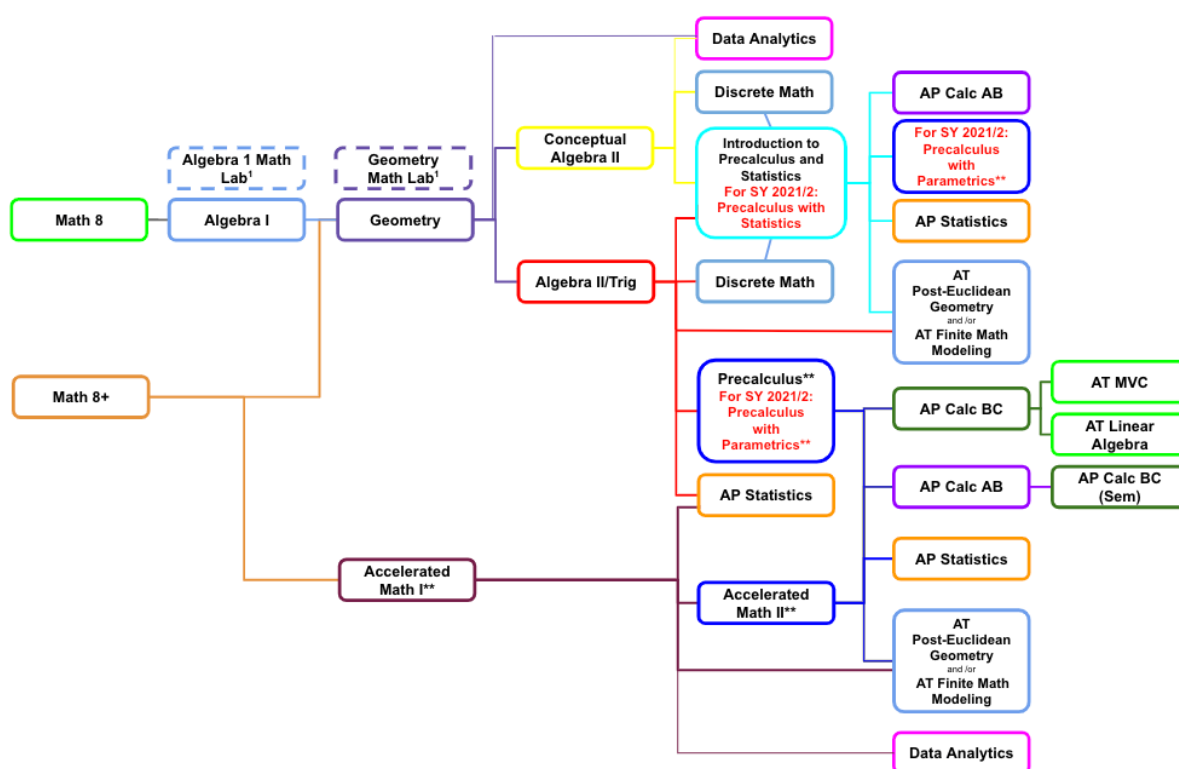
The mathematics curriculum is designed to meet the needs of students who have varying backgrounds, knowledge and skills, as well as diverse interests and career goals. The goals of the mathematics program are: to build mathematically-minded thinkers who find joy in productive struggle; to empower students to think critically, reason effectively, communicate clearly, and solve problems; to guide students toward a mastery of mathematics skills that lead to college success.

To “cultivate exceptional thinkers, prepared for the future” the math department realigned its curriculum so that more students have the opportunity to take a higher level (college) course. Thus, the current Introduction to Statistics and Pre-Calculus (ISP) course will become Pre-Calculus with Statistics in the 2021-22 school year and can satisfy the prerequisite for AP Calculus AB. Additionally, the current Pre-Calculus\*\* course will become Pre-Calculus with Parametrics\*\* in the 2021-22 school year and can satisfy the prerequisite for AP Calculus AB and BC. Both of these new courses can fulfill the prerequisite for AP Statistics.

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 therefore requires students to bring a non-CAS TI-Nspire calculator to each class. This calculator is also approved for use in the AP, SAT, and ACT exams.

## HS MATH COURSE FLOWCHART



NOTE:

- Both Algebra 1 and Geometry Math Labs require administrative approval for enrollment
- Introduction to Statistics and Pre-Calculus will no longer be offered from the school year 2021-22. Instead we will offer Pre-Calculus with Statistics.
- Pre-Calculus\*\* will no longer be offered from the school year 2021-22. Instead we will offer Pre-Calculus with Parametrics\*\*.

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) when they meet the prerequisites, however there are two exceptions. First, in order for a student to double up in Geometry and A2/T, they must obtain a recommendation from the math department chair; and second, for ninth grade students, a double-up is not permitted.
2. Students looking to accelerate their math sequence are able to take a validation exam in order to bypass the next course. Students must meet a minimum grade prerequisite 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, so families must plan proactively.
3. New students to SAS will be placed based on the results of a placement assessment administered following admission.
4. Students who fall below a prerequisite for a specific math class at the end of Semester I will be eligible to take their desired math class by earning the necessary grade prerequisite at the end of Semester II. Students who make the grade in Semester II should contact the math department chair and their counselor to request the schedule change.

## Algebra I

ID: 43003      Grade: 9–12      Length: Year

Credit: Math

Prerequisite: None

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 students will learn about 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.

## Geometry

ID: 43011      Grade: 9–12      Length: Year

Credit: Math

Prerequisite: Algebra I or Math 8+ plus approval from 8th-grade math teacher required to select this course in grade 9.

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.

## Algebra II/Trigonometry

ID: 43013      Grade: 9–12      Length: Year

Credit: Math

Prerequisite: Semester I grade of C or higher in Geometry.

Building on work with linear, quadratic, and exponential functions in Algebra 1, students in Algebra II/Trig extend their repertoire of functions to include higher degree polynomials, logarithmic, absolute value, square-root, cube-root, and trigonometric functions. Students will analyse these functions through several lenses: simplifying expressions, applying transformations, solving equations, and modelling. Graphing calculators will be used to facilitate graphic solutions to application problems. Students will end the year with a unit on probability. This course is fully aligned to the Common Core.

## Conceptual Algebra II

ID: 43004      Grade: 9–12      Length: Year

Credit: Math

Prerequisite: Geometry plus current math teacher's recommendation.

Note: This course is officially named Algebra II. It is only open to students who have a teacher recommendation. Most students would select Algebra II/Trig.

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 function theory, quadratic, polynomial, exponential & logarithmic functions, and probability. The approach used will emphasize problem solving, oral and written communication, and reasoning skills.

### Data Analytics

ID: 43016      Grade: 9–12      Length: Year  
Credit: Math

*Prerequisite: Successful completion of Geometry. This math course is designed for students who are interested in applying statistical models with real datasets.*

The course will include applied examples of data collection, processing, representation, interpretation, analysis, and evaluation to provide students with hands-on experience and introduction to data science. Students will use a popular open source data science tool, the "R" open source statistical analysis and visualization system, to aid in data management. At the end of the course, students will have had the opportunity to gain insights on data through examples, discussions, and individual projects based on student interests.

### Pre-Calculus with Statistics

*(formerly known as Introduction to Statistics and Pre-Calculus)*

ID: 43008      Grade: 9–12      Length: Year  
Credit: Math

*Prerequisite: Semester I grade of A or higher in Conceptual Algebra II; or a Semester I grade of C or higher in Algebra II/Trigonometry.*

This course focuses on further developing students' proficiency with algebra and probability, including a review of trigonometric functions, transformations, and an introduction to trigonometric identities. Students will extend their understanding of probability to include counting methods and probability distributions. Students are also introduced to the statistical analysis of the relationship between two sets of data. This course includes exploration of polynomials, logarithmic, and exponential functions and provides students with a solid foundation to take AP Statistics, AT Post-Euclidean Geometry, AT Finite Math Modelling, and AP Calculus AB.

### 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.

### Accelerated Math I

ID: 43014      Grade: 9–12      Length: Year  
Credit: Math

*Prerequisite: Math 8+ plus approval from 8th-grade math teacher; or Semester I and Semester II grade of A or higher in Algebra I*

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 with Parametrics**

*(formerly known as Pre-Calculus)*

ID: 43021      Grade: 9–12      Length: Year  
Credit: Math

*Prerequisite: Semester I grade of B or higher in Algebra II/Trig or Introduction to Statistics and Precalculus.*

This course is a prerequisite for AP Calculus BC. 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 need to adopt a mindset that is committed to conceptual understanding as they look to examine the common themes that link this discipline together. Topics include polynomial optimization, sequences and series, probability distributions, analytical trigonometry, polar relationships and conic sections, rational functions, modelling with the natural base, and modelling problems in motion (parametrics). On transcripts this course is identified as being equivalent to an honors level course.

**ADVANCED STUDIES COURSE OPTIONS****AP Calculus AB**

ID: 43026      Grade: 9–12      Length: Year  
Credit: Math

*Prerequisite for 2021-22: Semester 1 grade of B or higher in Pre-Calculus or Accelerated Math II. Semester 1 grade of A or higher in ISP.*

*Prerequisite for 2022-23: Semester 1 grade of B or higher in Pre-Calculus with Statistics. Semester 1 grade of C or higher in Pre-Calculus with Parametrics or Accelerated Math II.*

*Note: This course has an additional grade point weighting of 0.5.*

This course covers topics typically found in a first-semester calculus course at U.S. 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 for 2021-22: Semester 1 grade of A or higher in Pre-Calculus. Semester 1 grade of A or higher in Accelerated Math II.*

*Prerequisite for 2022-23: Semester 1 grade of B or higher in Pre-Calculus with Parametrics or in Accelerated Math II.*

*Note: This course has an additional grade point weighting of 0.5.*

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 (Post-AB)**

ID: 43033    Grade: 9–12    Length: Semester I  
Credit: Math

*Prerequisite:* Semester I grade of B or higher in AP Calculus AB.

*Note:* Designed for students who have completed AP Calculus AB. This course has an additional grade point weighting of 0.5.

This course will review some topics from AP Calculus AB, such as limits, continuity, differentiation and integration, and will also introduce 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 Statistics**

ID: 43028    Grade: 9–12    Length: Year  
Credit: Math

*Prerequisite for 2021-22:* Semester 1 grade of A or higher in Accelerated Math I, Algebra II/Trig; or a Semester I grade of B or higher in ISP; or a Semester 1 grade of C+ or higher in Pre-Calculus.

*Prerequisite for 2022-23:* Semester 1 grade of A or higher in Accelerated Math I, Algebra II/Trig; or a Semester I grade of B or higher in Pre-Calculus with Statistics; or a Semester 1 grade of C or higher in Pre-Calculus with Parametrics.

*Note:* AP Statistics will receive an additional grade point weighting of 0.5.

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. Students will be prepared for and strongly encouraged to sit for the AP exam in May.

**AT Post-Euclidean Geometry**

ID: 43041    Grade: 9–12    Length: Semester I  
Credit: Math

*Prerequisite for 2021-22:* 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 ISP; or a Semester I grade of C+ or higher in Pre-Calculus. Students must also have successfully completed a high school Geometry course or equivalent.

*Prerequisite for 2022-23:* Semester 1 grade of A or higher in Accelerated Math I, Algebra II/Trig; or a Semester I grade of B or higher in Pre-Calculus with Statistics; or a Semester 1 grade of C or higher in Pre-Calculus with Parametrics. Students must also have successfully completed a high school Geometry course or equivalent.

*Note:* 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. This course has an additional grade point weighting of 0.5.

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.

**AT Finite Math Modeling**

ID: 43042      Grade: 9–12      Length: Semester II  
Credit: Math

*Prerequisite for 2021-22: 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 ISP; or a Semester I grade of C+ or higher in Pre-Calculus.*

*Prerequisite for 2022-23: Semester 1 grade of A or higher in Accelerated Math I, Algebra II/Trig; or a Semester I grade of B or higher in Pre-Calculus with Statistics; or a Semester 1 grade of C or higher in Pre-Calculus with Parametrics.*

*Note: The Advanced Topic (AT) designation indicates this course is at university level, putting it at or above the level of a traditional Advanced Placement (AP) course. Like an AP course, this course has an additional grade point weighting of 0.5.*

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 cryptography, networks, iterative processes, and scheduling. Mathematical models will be used based on matrices, modular algebra, and vertex-edge graphs. Project-based learning will be prevalent, involving real-world applications, such as bin-packing, transportation networks, encryption, and spanning trees.

**AT Multivariable Calculus**

ID: 43043      Grade: 9–12      Length: Semester  
Credit: Math

*Prerequisite: Completion of AP Calculus BC; or concurrent request with semester-long AP Calculus BC (Post-AB)*

*Note: The Advanced Topic (AT) designation indicates this course is at university level, putting it at or above the level of a traditional Advanced Placement (AP) course. This course has an additional grade point weighting of 0.5.*

This course covers topics found in typical semester-long multivariable calculus courses at universities. The course 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.

**AT Linear Algebra**

ID: 43044      Grade: 9–12      Length: Semester  
Credit: Math

*Prerequisite: Semester I grade of A or higher in AP Calculus AB; or Completion of AP Calculus BC; or concurrent request with semester-long AP Calculus BC (Post-AB).*

*Note: 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. This course has an additional grade point weighting of 0.5.*

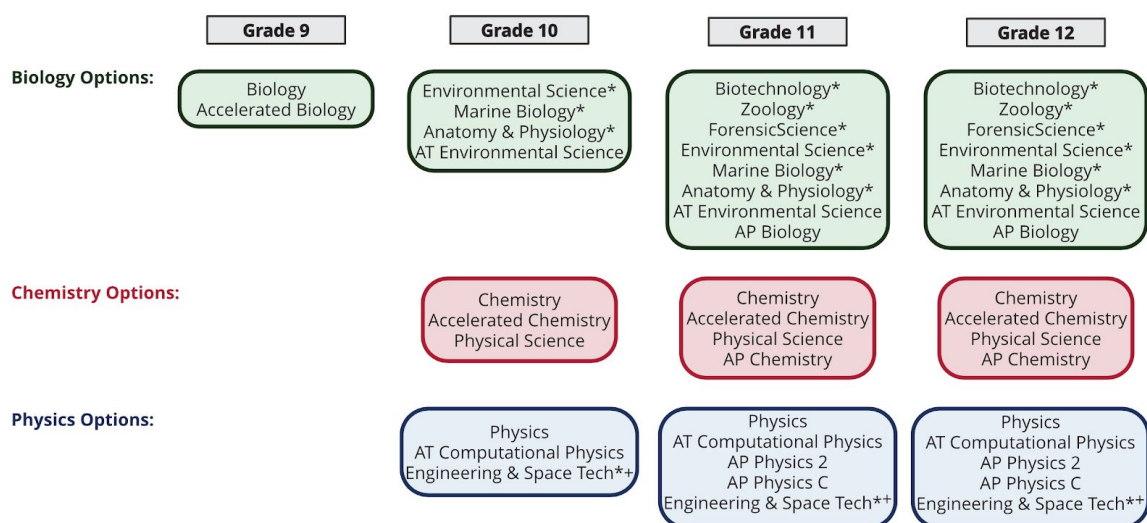
This course covers topics found in typical semester-long linear algebra courses at universities. The course will focus on systems of linear equations and their applications, linear independence and dependence, linear transformations and their matrix representations, matrix algebra, characterizations of invertible matrices, determinants, vector spaces and subspaces, null and column spaces, and possibly Eigenvalues and Eigenvectors. During the semester, students will do projects tied to real world applications, which may include; animation, computer graphics, animal carrying capacities, google page rankings, and transformations.

# SCIENCE

The goal of the Science Department is to develop scientifically literate individuals who understand and appreciate the interrelationships of science, technology, and society. Based on the Next Generation Science Standards (NGSS), science courses at SAS 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. All science courses incorporate technology-based laboratories (including graphical analysis software) and interactive resources.

All 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 in ninth or tenth grades from an integrated science program typically enroll in Biology, Accelerated Biology, or Chemistry. After completing two years of an integrated science program, Accelerated Biology, Accelerated Chemistry, or Physics are the typical choices.



## Notes:

Any course listed for Grades 10 - 12 can be taken if the appropriate prerequisite is met.

\* denotes a semester-length course.

+ denotes this course requires a submitted application and enrollment is not guaranteed.

## Biology

ID: 44005      Grade: 9–11      Length: Year

Credit: Life Science

Prerequisite: None

Biology 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: Structure and Function; Inheritance and Variation of Traits; Matter and Energy in Organisms and Ecosystems; Interdependent Relationships in Ecosystems; Natural Selection and Evolution.

## Accelerated Biology

ID: 44008      Grade: 9–12      Length: Year

Credit: Life Science

Prerequisite: Approval from 8th-grade science teacher is required to select this course in grade 9.

Accelerated Biology is a full year, honors level 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 students who are passionate about science or may be interested in a science-related career. There are five life science topics in high school as outlined by NGSS: Structure and Function; Inheritance and Variation of Traits; Matter and Energy in Organisms and Ecosystems; Interdependent Relationships in Ecosystems; Natural Selection and Evolution. 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.

### Biotechnology

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

*Prerequisite: The completion of a one-year biology course.*

Biotechnology is a hands-on course for students who are interested in learning new biological lab skills and their application. Students will be given choice in their learning, which can range from cheese-making to DNA fingerprinting or CRISPR. Student-designed investigations are emphasized as students are exposed to a variety of fields including microbiology, cell biology, genetics, and bioengineering. It is an excellent course for students who are considering careers in any biological science field, such as medicine, genetics, biomedical engineering, or biomedical research.

### 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 grade 10.*

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 & 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 the human body as it relates to each system within it. The course is designed with student input providing them an opportunity to learn topics of the human body they find most relevant. Opportunities will be provided for dissection and extending knowledge through analysis of disease on the body system. 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.

### Zoology

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

*Prerequisite: None*

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.

### Forensic Science

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

*Prerequisite: None*

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 commensurate with basic forensic science procedure will be used to analyze topics as diverse as: fingerprints, DNA, blood, shoe, tire, hair & fiber evidence, autopsy, and time of death estimation.



## 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 grade 10.*

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 to 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. Environmental Science 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.

## 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.*

Chemistry is a full-year, college-preparatory curriculum based on the Next Generation Science Standards (NGSS). 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 core topics of chemistry as outlined in the NGSS include: (1) Matter and its interactions, (2) Forces and interactions, and (3) Energy. 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. This 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 a full-year, honors level course that is aligned to the Next Generation Science Standards. Taught at a faster pace, it requires more daily work than Chemistry. This course will be of particular interest to those students who intend to pursue further science courses leading to a science-related career. The core topics of chemistry as outlined in the NGSS include: (1) Matter and its interactions, (2) Forces and interactions, and (3) Energy. Within this framework, additional depth in the Accelerated Chemistry curriculum is provided on the topics of stoichiometry, atomic theory and periodicity, chemical bonding and molecular geometry, thermodynamics, kinetics, equilibrium, and electrochemistry. Laboratory investigations will allow students to have first-hand experience with both traditional and modern methods of analysis built around computer based probeware. Students enrolling in this course should be able to read and demonstrate numeracy at or above grade level and should have demonstrated high levels of achievement in previous science courses.

## Physical Science

ID: 44006      Grade: 10–12      Length: Year  
Credit: Physical Science

*Prerequisite: Biology or Accelerated Biology*

Physical Science is a newly redesigned full-year, lab-based course intended to fuel a student's love of science. This interdisciplinary, highly interactive course focuses on the fundamental concepts of chemistry, physics, and earth science. The structure of this course emphasizes projects, demonstrations, and experiments instead of traditional tests. Students will be actively involved with hands-on, experiential units driven by their interests. Potential topics could be the science of explosions or the study of interesting but unexplained scientific phenomena.

## Physics

ID: 44015      Grade: 10–12      Length: Year  
Credit: Physical Science

*Prerequisite: Geometry, Accelerated Math 1, or any higher-level mathematics course*

Physics is a full-year, college-preparatory curriculum based on the Next Generation Science Standards (NGSS). The major topics defined by the NGSS for Physics are Forces and Interactions, Energy, and Waves and Electromagnetic Radiation. For each topic, students perform laboratory activities to discover or verify physical phenomena and solve problems with calculations. The laboratory activities help students improve their skill of engaging with arguments from evidence; solving problems with calculations helps students refine their skill of mathematical and computational thinking. At the end of each topic students perform a project to apply their knowledge and skills for the topic to an interesting situation, showing how physics explains the world.

## Engineering & 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+ or 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.

## ADVANCED STUDIES COURSE OPTIONS

### AP Biology

ID: 44027      Grade: 11–12      Length: Year  
Credit: Life Science

*Prerequisite: Final grade of B or higher in Biology or Accelerated Biology, plus a final grade of B+ or higher in Chemistry or B or higher in Accelerated Chemistry.*

*Note: This course has an additional grade point weighting of 0.5.*

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.

### 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 II grade of A or higher in Chemistry; or Semester I grade of B or higher in Accelerated Chemistry; or current teacher recommendation.*

*Note: This course has an additional grade point weighting of 0.5.*

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. SAS offers two different versions of AP Chemistry. In this course, students proceed at the normal AP pace. A self-paced AP Chemistry (44024) is also available.

### 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 II grade of A or higher in Chemistry; or Semester I grade of B or higher in Accelerated Chemistry; or current teacher recommendation.

*Note:* This course has an additional grade point weighting of 0.5.

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.

### AP Physics 2

ID: 44033      Grade: 11–12      Length: Year  
Credit: Physical Science

*Prerequisite:* Semester I grade of B or higher in 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.

*Note:* This course has an additional grade point weighting of 0.5.

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 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.

*Note:* This course has an additional grade point weighting of 0.5.

AP Physics C is a set of two rigorous calculus-based physics courses for students planning on higher studies in science or engineering. The course covers topics from Mechanics and Electricity and Magnetism, providing students with the equivalent of an introductory college-level physics course for science majors. As an integrated course, Mechanics and Electricity and Magnetism are covered each semester. The first semester begins with algebra-based Electricity and Magnetism, transitioning to calculus-based Mechanics. The second semester begins with calculus-based Mechanics, finishing with calculus-based Electricity and Magnetism. Students who are successful in this course will be prepared for and encouraged to sit for the AP Physics C: Mechanics and AP Physics C: Electricity and Magnetism examinations.

**AT Computational Physics**

ID: 44050      Grade: 10–12      Length: Year  
Credit: Physical Science

*Prerequisite: Semester I grade of A in Conceptual Algebra II; or completion of Algebra II/Trig or higher level math course.*

*Note: This course is aligned to the Syracuse University Physics (SUPA PHY) 101 course. Students are able to earn Syracuse University credit by concurrently enrolling in the SUPA PHY 101 course. 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. There is a cost per Syracuse University credit hour if students choose to concurrently enroll. For further information, please see the SUPA website (<http://supa.syr.edu>).*

*\*While this course provides access to the AP Physics 1 Exam, it is not fully aligned to the AP Physics 1 curriculum. Therefore, students will require additional self-study to fully prepare for the AP Physics 1 Exam.*

*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. This course has an additional grade point weighting of 0.5.*

AT Computational Physics is an introductory college-level course in physics that also incorporates coding using vPython and mathematical modeling using Excel. The first three quarters of the year are dedicated to learning the introductory concepts and ideas of classical mechanics as well as an introduction to coding. Students 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 individualized, student-designed projects applying both concepts from physics and modelling with computer-generated data.

**AT Environmental Science & 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 grade 10. Semester II 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 grades 11 or 12*

*Note: The AT designation indicates a course is at the university level, putting it at or above the level of a traditional Advanced Placement (AP) course. This course has an additional grade point weighting of 0.5.*

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 U.N. 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.

## WORLD LANGUAGES

The goal of the World Languages program 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: **the student's language proficiency**. We believe that the primary purpose of learning another language is to develop the ability to communicate effectively in real-life contexts.

In order to achieve the performance targets, we designed multi-year courses to allow students to take the time they need to build greater confidence and consistency in their language ability, while experiencing new culturally-rich thematic units.

We offer instruction in three different languages: Chinese (Mandarin), French and Spanish.

The following World Languages department policies and practices should also be noted:

- Courses are taught in the target language beginning in all our Novice courses. \*Mandarin, taught using simplified Chinese characters.
- Interpersonal listening and speaking skills are a key component of our program and are the primary focus in our courses. These skills are most important in the first stages of learning a language, with increasing attention given to the development and assessment of the interpretive skills (listening and reading), as well as presentational communication (speaking and writing) as students move up levels.
- 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 three years of language study.
- New students who have learned Chinese, French, or Spanish prior to SAS will be assessed for placement.

## SEAL OF BILITERACY

SAS is proud to offer the Seal of Biliteracy to students in the graduating classes of 2018 and beyond. The Seal of Biliteracy is an optional recognition that serves to certify attainment of biliteracy for graduating students and is awarded on high school diplomas. It is a formal statement of accomplishment and language proficiency, and as of October 1, 2020, high schools in 40 U.S. states offered a Seal of Biliteracy (<http://sealofbiliteracy.org/>).

At SAS, a Seal of Biliteracy is offered in the three languages that are taught here: Mandarin Chinese, French, and Spanish. In order to earn a Seal of Biliteracy at SAS, seniors must demonstrate a minimum of Intermediate High proficiency in all four skills: reading, writing, listening, and speaking. Proficiency will be determined using the STAMP assessment. Families are responsible for paying any costs associated with taking these assessments. Students in their senior year who are interested in pursuing the Seal of Biliteracy may submit an application to the SAS Director of World Languages.

## Novice Courses

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

*Grade: 9-12   Length: Year   Credit: Language*

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 requests 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.

## 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*

*Prerequisite: Current teacher recommendation*

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 writing skills\*, 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.

## Intermediate High Courses

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

*Prerequisite: Current teacher recommendation*

This multi-year course is for students who have reached an Intermediate Mid level of performance in interpersonal listening and speaking, or/and complete the 3 years of Intermediate level course.

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.

## Advanced

ID: 45047      Spanish: Advanced  
ID: 45048      Spanish: Advanced II  
ID: 45070      Chinese: Advanced

*Grade: 9–12    Length: Year    Credit: Language*

*Prerequisite: Current teacher recommendation*

Advanced-level courses are for students who have reached at least at 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, also history and literature in the Chinese course). These courses focus on all modes of communication - interpersonal, presentational and interpretive - and the performance target is at least Advanced Low for each.

Advanced 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 structured and extended length paragraph.

On students' transcripts, advanced courses are designated as being equivalent to an honors course, demonstrating fluency across the communicative modes.

## ADVANCED STUDIES COURSE OPTIONS

### AP French Language and Culture

*ID: 45023      Grade: 10–12    Length: Year  
Credit: Language*

*Prerequisite: Current teacher recommendation*

*Note: Grade 11 students who have completed at least one year in the Intermediate High course may select this course for grade 12 without a teacher recommendation. Students in grades 9 and 10 still require a teacher recommendation. This course has an additional grade point weighting of 0.5.*

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 Spanish Language & Culture

*ID: 45024      Grade: 10–12    Length: Year  
Credit: Language*

*Prerequisite: Current teacher recommendation*

*Note: Grade 11 students who have completed at least one year in the Intermediate High course may select this course for grade 12 without a teacher recommendation. Students in grades 9 and 10 still require a teacher recommendation. This course has an additional grade point weighting of 0.5.*

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.

### **AT Spanish Language: Latin American History and Culture Through Arts & Media**

ID: 45049      Grade: 11, 12      Length: Year  
Credit: Language

*Prerequisite: Demonstrated proficiency level of Advanced Low or higher.*

*Note: 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. Like an AP course, this course has an additional grade point weighting of 0.5.*

This inquiry-based course intends to provide students with the opportunity to develop and apply their Spanish language skills by studying selected eras of Hispano American history and Hispano American iconic figures. Additionally the use of Arts, Literature and Cinema will provide a platform for analysing and exploring cultural viewpoints. The course seeks to build on language abilities, with a focus on cultural competency, textual and artistic analysis, and collaborative skills through project-based learning. The study of literature, visual arts, films and media in their historical context, will also enable students to develop critical thinking skills and to express themselves in Spanish with enhanced sophistication.

### **AP Chinese Language & Culture**

ID: 45025      Grade: 10–12      Length: Year  
Credit: Language

*Prerequisite: Current teacher recommendation*

*Note: Grade 11 students who have completed at least one year in the Intermediate High course may select this course for grade 12 without a teacher recommendation. Students in grades 9 and 10 still require a teacher recommendation. This course has an additional grade point weighting of 0.5.*

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: 10–12      Length: Year  
Credit: Language

*Prerequisite: Demonstrated proficiency levels of Advanced Low or higher in all four skills.*

*Note: 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. Like an AP course, this course has an additional grade point weighting of 0.5.*

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.

# 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.

All students must complete the SAS Catalyst Project as a requirement for graduation. Please see the General Information section on page 5, for the various ways a student can fulfil this requirement.

## COMPUTER SCIENCE AND DESIGN

### Computer Science I

ID: 44518    Grade: 9–12    Length: Semester  
Credit: Elective

*Prerequisite: Completion of Algebra 1 or Math 8+ or concurrent enrollment/request in Geometry or higher level math class.*

This course provides an introduction to programming and computer science principles. Students will use computational thinking practices to design, write, and test programs in Java (Object-Oriented Programming, serving as an introduction to AP Computer Science). This hands-on course will give students the opportunity to appreciate and understand the depth at which businesses, and our daily interactions are dependent on computer science and programming. Students learn by carefully analyzing a problem, designing a solution (algorithm), creating a Graphical User Interface (GUI), and then writing/testing/debugging their programs. This course is designed as an exciting and unintimidating entry 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.

### Computer Science: Mobile Application Development

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

*Prerequisite: None*

This course provides an introduction to coding through visual app building. Students will learn about how to build Mobile Apps using MIT App inventor. In the process, students will learn about building basic apps, making visual games through using a canvas, using databases, and making HTTP requests across the internet. This hands-on course

gives students the ability to create their own vision for an app. They will learn about debugging, designing algorithms, and modeling an app. This course will be taught at the introductory level, and requires no previous programming knowledge. Additionally, a specific kind of phone (Android or iOS) is not required to take this course. This course provides an introduction to the other computer science courses offered.

### Computer Science: Digital Game Development

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

*Prerequisite: None*

This is a project-based course, where interdisciplinary teams design and rapidly prototype interactive virtual worlds. In teams, designers will combine their mechanical skills in 2D art, 3D modeling, creative writing, programming, and sound design to conceive, develop, and construct compelling virtual environments. To realize their designs, students will use modeling tools, paint tools, sound processing and composition tools, and the Unity game engine. Existing and peer works will be interpreted and evaluated with the Mechanics-Dynamics-Aesthetics framework.

Through a rapid prototyping process, students will create multiple products, receive and contribute critical feedback, and gain valuable experience with the interdisciplinary, collaborative skills essential for life in the 21st century.

## Emerging Technologies

ID: 44501 Grade: 9–11 Length: Semester/Year  
Credit: Elective

Prerequisite: None

This semester-long survey course gives primarily underclassmen a view into design, digital fabrication, coding, and graphics at an entry level. Classes are a dynamic mixture of hands-on instruction/ production, lively discussion, computer work and individual projects.

Students explore a wide range of fundamental hands-on skills including digital drawing, fabrication using the laser cutter, and the interconnection of computing devices using the Raspberry Pi. 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 recommended for students who have an interest in learning through discovery while solving reality-based problems through design thinking. 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.

## Graphic Design

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

Prerequisite: None

Enjoy sketching, photography, or just tinkering with graphics? Have you ever considered designing your own graphics for social media or even your own font? Graphic design is an integral part of our daily life. From gum wrappers to infographics to the t-shirts people wear, designers create and communicate powerful messages. In this course, students will learn how to inform, persuade, and attract attention by creating and organizing the elements of typography, images, and white space. Classes are a dynamic mixture of instruction/production, lively discussion, computer work, and individual projects. Students will complete a variety of authentic projects that include but are not limited to the design of posters and infographics. They will gain a solid foundation in the use of Adobe Illustrator, Photoshop, and InDesign. This course is a complement to the Journalism and Yearbook courses.

## ENGINEERING AND ROBOTICS

### Introduction to Robotics

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

Prerequisite: None

In this course students will learn new skills and apply critical thinking to solve concrete problems. Important learning goals of the course are innovation, perseverance, teamwork and communication. The course is divided into three main segments:

- Codecademy is used to walk students with no experience through basic coding laws and language, using the Python language;
- 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;
- VEX robots are approximately one cubic foot in size and are used in an in-class competition - Ken and Barbie Firefighter rescue. Students design, build and drive robots to perform these real-world tasks. A technical poster, technical paper and interviews are required as well.

### Robotics Science

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

Prerequisite: None

This course 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 ID: 46522), during the spring semester (select ID: 46529), or for the full year (select both ID: 46522 and 46529). 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 ES, MS and HS schools. Travel to out-of-country competition is optional, and is the financial responsibility of the student.

### Engineering Design

ID: 44012    Grade: 10–12    Length: Year  
Credit: Elective  
Prerequisite: None

In this class, students learn to identify, consider and collaboratively solve engineering problems through creative thinking, planning, and design, and by working with different media, materials, and tools. This class will interest students wanting to understand the complementary roles of engineers and designers while developing skills such as initiative, resourcefulness, inquiry, and ingenuity. Semester one includes units in model making, sketching, and digital fabrication. These are interspersed with small open-ended challenges that develop the design skills needed to negotiate ambiguous problems. Semester two includes units in mechanics, the internet of things and finishes with a collaborative project where students apply their skills to an authentic challenge to realize a solution of sufficient scale and complexity.

## BUSINESS AND FINANCE

TEC Business and Finance courses are undergoing a curriculum review and this may mean a change in semester courses offered in 2021-22 or beyond.

### Business

ID: 46524    Grade: 10–12    Length: Semester  
Credit: Elective  
Prerequisite: None

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.

### Personal Finance: You & Your Money

ID: 46531    Grade: 10–12    Length: Semester  
Credit: Elective  
Prerequisite: None

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 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 OPTIONS

### Journalism: Newspaper & Broadcast Media

ID: 46400    Grade: 10–12    Length: Year  
Credit: Elective  
Prerequisite: None

Studio41 and its periodic morning news show (First Take) launched in the fall of 2019. The Eye is the online student voice of Singapore American School and will begin its 8th year as a digital news source. Production of these two student media outlets is, in part, created and managed through this class made up of a wide range of students with various degrees of experience in investigative journalism, news reporting, editorial writing, and documentary filmmaking. While student assessment is based on individual performance and output, students (or, rather, staff members) elect and work directly with an editorial leadership team to create and publish our collective commentary on events, trends, and points of student interest resonating within the school or around the world. Staff members

choose from a diverse range of topics and areas of focus, though all tackle both written and media-heavy news pieces and are encouraged to tackle diverse approaches to investigation, interviewing, ethical reporting, drafting persuasive prose, and engaging our audience in a highly visual delivery of their contributions to both *The Eye* and *First Take*. Journalism may require weekend and out-of-class hours to cover emerging stories. This course is open to all interested students in grades 10-12 and may be repeated for credit.

### Journalism: Yearbook

ID: 46401      Grade: 9–12      Length: Year  
Credit: Elective

*Prerequisite: None*

*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. Those who repeat will be expected to take on leadership and mentorship roles.

## ADVANCED STUDIES COURSE OPTIONS

### AP Computer Science

ID: 44520      Grade: 10–12      Length: Year  
Credit: Elective

*Prerequisite: Semester grade of B or higher in Computer Science I; or Semester I grade of B or higher in Algebra II/Trig or higher level math course; Students who have experience with Java, but do not meet these requirements may speak with AP CS faculty to determine readiness.*

*Note: This course has an additional grade point weighting of 0.5*

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. While recommended, 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 oriented 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. Students are therefore expected to commit to a daily schedule of programming and studying activities. 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.*

*Note: 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. This course has an additional grade point weighting of 0.5.*

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, unit testing, APIs, and class design. The programming language is Java with the possibility for Javascript at the end. Students taking this course should be independent thinkers able to spend a significant amount of time at a computer outside of class.

**AT Entrepreneurship**

ID: 46560      Grade: 10–12      Length: Semester  
Credit: Elective

*Prerequisite: Semester 1 grade of A or better in World History/World Studies is required to select this course in grade 10; a B or higher in a 10th or 11th grade social studies course is required to select this course in grades 11 or 12, or current teacher recommendation.*

*Note: 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. This course has an additional grade point weighting of 0.5.*

Entrepreneurship provides real world, hands-on learning on what it's like to actually start a company. The goal is to give students a framework to test the business model of a startup while creating all of the pressures and demands of the real world in an early stage start up. They will learn marketing, finance, and other business disciplines, while also acquiring organizational skills such as time management and leadership development. The class is also a vehicle to develop character, intellect, and resilience in students. 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. As 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 work with carefully selected Singapore entrepreneurs, who present real and urgent business problems with hard deliverables and deadlines. Students learn processes including customer development, agile development and rapid prototyping. Throughout the course, students will learn to problem solve, think critically, make well-informed decisions, communicate effectively, and engage in productive and successful team work. In the final portion of the course, students use everything they've learned about entrepreneurship and group work to launch their own startups. The course requires rigorous study and emphasizes in-depth research.

**AP CAPSTONE AND CATALYST****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 grade 10. Semester 1 grade of B+ or higher in English 10/American Studies is required to select this course in grade 11. Students who do not meet the pre-reqs need to schedule an appointment with the current AT Seminar teachers and the Department Chair.*

*Note: AT Seminar requires independence, self-regulation and time management to be successful. Please see the TEC department chair if you have questions. Like an AP course, this course has an additional grade point weighting of 0.5.*

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 both in writing and in presentations to a live audience. Students also work collaboratively; a willingness to be a team player is vital to this course as students will submit a team project to the College Board, which includes a team presentation given to a live audience. AT Seminar is year one of the AT Research & 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 &

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.

### AT Research & 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. Like an AP course, this course has an additional grade point weighting of 0.5.*

AT Research & Catalyst allows 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. 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 5000 words, an oral defense presentation of their research, and an exhibition of their 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 SAS Catalyst Project

ID: 48509/48510      Grade: 11–12      Length: Semester  
Credit: Elective

*Prerequisite: None*

*Note: Completing this course is one of the ways in which a student may fulfill the Catalyst graduation requirement.*

The SAS Catalyst project provides guidance, resources, and flexible scheduling for students to explore interests and pursue passions. Teachers act as guides as students take ownership for their learning. 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 focus on producing a tangible outcome and 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). 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. Students 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.

## INDEPENDENT AND ONLINE

### Independent Study

ID: 49013      Grade: 11–12      Length: Semester  
Credit: Elective

*Prerequisite: Students will be required to provide an approved independent learning proposal and management plan before the course selection process ends. Please see your college counsellor for more information and to request an independent learning proposal.*

The Independent Study option is designed so that students can study a topic or learn in an area in which no course is available. It is also for students to pursue non-paid work experiences that are supported by SAS. Rising juniors and seniors should select six other SAS classes, with the independent study course as a seventh course. For the independent study option to be available during course selection, the student must seek guidance from their college counsellor, work with an advising teacher, and their independent study proposal must be reviewed and approved by the Center for Innovation Coordinator by the end of the course registration period. The advising

teacher will submit a Pass or Fail score based on the student's achievement in their learning targets. Successful completion would provide one-half credit per semester and be listed on the transcript as a P (Pass). The course is not included in the SAS GPA. In order to ensure that students benefit from the full academic program offered at SAS, independent study activity cannot be used to fulfill SAS subject area graduation requirements.

### GOA Online Learning

ID: 48600 (S1)/48601 (S2)      Grade: 11–12  
Length: Semester and Yearlong      Credit: Elective

*Prerequisite: Students must meet and have their learning plan approved by the SAS GOA Site Director.*

Global Online Academy (GOA) is a consortium of select independent schools from around the world. Through this program a limited number of SAS students work closely with globally distributed teachers and peers through online coursework. This personal and flexible online learning opportunity will challenge students to further develop cultural competence, global citizenship and communication skills. Students who would like to complete these individual learning options beyond SAS's course offerings may choose to enroll in a one-semester or year-long online course through GOA. Students interested in GOA courses 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. 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 most GOA courses, and students will be expected to manage collaboration and communication across time zones. The SAS GOA Site Director will contact students to assist them through the process of GOA course registration.

Eligible students 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 and passions and goes beyond the options available at SAS. Credits earned through GOA are used to fulfill the minimum number of SAS credits required for graduation, but do not fulfill department specific minimum requirements (except in the case of the World Language options). All GOA courses are conducted on a

pass/fail basis. The percentage grade will not be included in the calculation of an SAS grade point average (GPA). While students are encouraged to enhance their learning through other learning opportunities and report details on university applications, only GOA courses will be listed on the SAS transcript.

### GOA COURSE OPTIONS

Only those GOA courses listed below are available for SAS students. For more complete information on the length of each course, full course descriptions, and which semester the course is offered, please consult the GOA online course catalogue at <https://globalonlineacademy.org/student-program/student-courses>

### ART, MEDIA, & DESIGN

**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.

**Data Visualization** - This course trains students to collect, organize, interpret, and communicate massive amounts of information.

**iOS App Design** - Learn how to build apps for the iPod, iPhone, and iPad and publish them in the App Store.

**Arts Entrepreneurship (new online course)** - In this course, aspiring visual artists, designers, filmmakers, musicians, and other creatives will learn how to find success in the dynamic fields of their choosing. Students will learn about arts careers and organizations by attending virtual events and interviewing art practitioners, entrepreneurs, and administrators.

## MATHEMATICS & TECHNOLOGY

### **Computer Science II: Analyzing Data with Python**

- Composed of a series of “game jams,” the course asks students to solve problems and create content, developing the design and technical skills necessary to build their own games.

**Number Theory** - This Online Number Theory Course allows you to explore pure mathematical reasoning, along with the algorithms & encrypted transmissions that surround us.

**Cyber Security** - This course explores the fundamentals of and vulnerabilities in the design of computers, networks, and the internet.

**Game Theory** - Do you play games? Ever wonder if you’re using “the right” strategy? What makes one strategy better than another? In this course, we’ll explore a branch of mathematics known as game theory, which answers these questions and many more.

### **Problem Solving with Engineering and Design**

- This course investigates various topics in science, technology, computer programming, engineering, and mathematics using a series of projects and problems that are both meaningful and relevant to the students’ lives.

## SCIENCE & HEALTH

**Abnormal Psychology** - This Online Abnormal Psychology Course focuses on a variety of atypical psychiatric disorders, helping students understand symptoms, diagnosis & 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 class, students enhance critical thinking skills by collaboratively solving medical mystery cases, similar to the approach used in many medical schools.

**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.

**Positive Psychology** - What is a meaningful, happy, and fulfilling life? In this course, we’ll dive into what positive psychology research tells us about the formula for a meaningful life, the ingredients of fulfilling relationships, and changes that occur in the brain when inspired by music, visual art, physical activity, and more.

**Social Psychology** - Social psychology examines how the thoughts, feelings, and behaviors of a person are influenced by the actual, imagined, or implied presence of others.

### **Developmental Psychology** (*new online course*)

- This course is an introduction to the fascinating study of human growth and development focusing on the significant changes that occur physically, emotionally, cognitively and socially from birth through adolescence. Students consider the big questions of heredity versus environment, stability versus change, and continuity versus discrete stages of change as they investigate language acquisition, sensorimotor development, thinking and learning, and personality and emotions.

## SOCIAL SCIENCES

**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.

**9/11 in a Global Context** - In this course, students explore the causes of the 9/11 attacks, the events of the day itself, and its aftermath locally, nationally, and around the world.

**Entrepreneurship in a Global Context** - In this experiential course students develop an understanding of entrepreneurship in today's global market; employ innovation, design, and creative solutions for building a viable business model; and learn to develop, refine, and pitch a new start-up.

**International Relations** - In this course, you will go beyond the soundbites and menacing headlines to explore the context, causes, and consequences of the most pressing global issues of our time.

**Climate Change & Global Inequality** - Nowhere is the face of global inequality more obvious than in climate change, where stories of climate-driven tragedies and the populations hit hardest by these disasters surface in every news cycle. In this course students will interrogate the causes and effects of climate change, and the public policy debates surrounding it.

**Gender & Society** - 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 & 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 & the Criminal Law** - In this 14-week course, students become familiar with the legal rules and institutions that determine who goes to prison, and for how long.

**Race & Society** - What is race? Is it something we're born with? Is it an idea that society imposes on us? An identity we perform? These are just a few of the questions that students in this course will explore together as they approach the concept of race as a social construct.

## WORLD LANGUAGES

**Arabic Language Through Culture I, II, III** - Through study of Levantine (Jordanian) Arabic and the Arabic writing system, students develop Novice proficiency in interpersonal communication. Students will communicate in spontaneous spoken conversations on familiar topics, including food, weather, and hobbies, using a variety of practiced or memorized words, phrases, simple sentences, and questions. Students in Arabic III have demonstrated Intermediate interpersonal proficiency in Arabic (MSA or a dialect) through two years in Arabic Language Through Culture or other coursework.

**Japanese Language Through Culture I, II, III** - 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. Through language learning, students in this course share their voices, cultivate global perspectives, and foster appreciation of self and others. Students in Japanese III have mastered most of the conjugation patterns (TE/TA form, dictionary form, and NAI form) that are necessary to speak and write in complex structures.

# VISUAL & PERFORMING ARTS

Singapore American School 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. As a result, some courses require an audition prior to enrollment so that performing ensembles can best meet the needs of all students.

## VISUAL ARTS

### Art I: Foundations

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

Prerequisite: None

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, 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: 10-12    Length: Semester  
Credit: Visual/Performing Arts

Prerequisite: None

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: 10-12    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.

### Ceramics III

ID: 46118    Grade: 10-12    Length: Year  
Credit: Visual/Performing Arts

Prerequisite: Completion of Ceramics I and Ceramics II; or acceptable portfolio and teacher recommendation.

In this full-year course, students will deepen their understanding of the visual arts through investigating, critically analyzing and making art within the medium of ceramics. In the first semester, students will seek inspiration by identifying, selecting, and exploring artists, artworks, and cultural contexts within the region, as well as researching advanced ceramic materials and technique applications. During the second quarter, students will begin exploring a conceptual approach to their work. There will be less emphasis on function and tradition and more on the search for a contemporary perspective to ceramics as fine art. The second semester's focus is to develop students' voices in their work,



including writing artistic statements, and then putting their knowledge and understanding into practice by transforming ideas into action to produce a body of work for exhibition. This course will enable students to create a portfolio based on work that is personal, informed by research and with an awareness of the impact their work and ideas may have on others within the world.

### Studio Art

ID: 46106      Grade: 10–12      Length: Year  
Credit: Visual/Performing Arts

*Prerequisite: Art Foundations; or acceptable portfolio (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 their particular area(s) 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.

### Mixed Media & Digital Processes

ID: 46108      Grade: 9–12      Length: Semester  
Credit: Visual/Performing Arts

*Prerequisite: None*

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.

## ADVANCED STUDIES OPTIONS

### AP Drawing

ID: 46111      Grade: 10–12      Length: Year  
Credit: Visual/Performing Arts

*Prerequisite: Studio Art or acceptable portfolio*

*Note: This course has an additional grade point weighting of 0.5.*

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, digital recordings, 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 2-D Art & Design

ID: 46112      Grade: 10–12      Length: Year  
Credit: Visual/Performing Arts

*Prerequisite: Studio Art or acceptable portfolio*

*Note: This course has an additional grade point weighting of 0.5.*

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 3-D Art & Design**

ID: 46113      Grade: 10–12      Length: Year  
 Credit: Visual/Performing Arts

*Prerequisite: Studio Art or Ceramics 3 or acceptable portfolio*

*Note: This course has an additional grade point weighting of 0.5.*

This portfolio is intended to address sculptural issues. Design involves purposeful decision-making about using the elements and principles 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.

**FILM AND PHOTOGRAPHY****Filmmaking**

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

*Prerequisite: None*

The Filmmaking course at SAS introduces students to the emerging accessibility of quality moviemaking by breaking down the process into its essential components—screenwriting, cinematography, sound design, and editing. Through academic study and practical exercises, we build upon student appreciation for the language and conventions of narrative filmmaking by creating short film pieces, both individually and as collaborative production crews. Course content is scaffolded to allow practical experimentation in each phase of the filmmaking process. Areas of focus include narrative structure, developing and pitching visual stories, manipulation of photographic equipment, professional audio recording, sound design, and continuity-style editing. The course is open to all high school students in grades 9–12 but may not be repeated for credit.

**Advanced Filmmaking**

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

*Prerequisite: Filmmaking*

*Note: This course may be repeated for credit.*

The Advanced Filmmaking course pushes the aspiring movie maker to grow more fluent in the specific language of film. SAS has invested in top-of-the-line cinematographic gear that empowers advanced students to work with the real-world tools of modern filmmaking. Expanding beyond the run-and-gun practices of the introductory course, Advanced Filmmaking emphasizes heavier pre-visualization, directorial skill, lighting and art design, motivated camera work, and an ever-expanding proficiency in the editing room. Students create short films of increasing technical and artistic sophistication and, through individualized study, tackle a discreet principal role on a production crew. At the end of the semester, the products of the course will be screened publicly—here at SAS and in student film festivals around the world. Like its craft, Advanced Filmmaking requires a dedicated passion and time commitment on the part of the filmmaker. The course is open to students in grades 10–12 who have completed Filmmaking (or an equivalent course elsewhere, with instructor approval). Advanced Filmmaking may be repeated for credit, whereby students elect a different primary area of focus (1. Writer, Director, Producer; 2. Cinematographer, Lighting Designer, Art Director; or 3. Editor, Sound-Designer, Postproduction Artist) to explore more deeply the many facets of cinematic storytelling.

**Digital Photography**

ID: 46519      Grade: 9–12      Length: Semester  
 Credit: Visual/Performing Arts

*Prerequisite: None*

*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 of a camera and skills related to digital photography. 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. Topics will include: digital vs. traditional photography, image editing workflow, composite imaging, 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. This course may be repeated for credit.*

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. Students design and produce a portfolio of work that is tailored to their own personal interests and growth as an artist.

## PERFORMING ARTS

### Theater: Stagecraft

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

*Prerequisite: None*

Stagecraft covers the technical aspects of theater productions. Student assignments and projects will involve three topic areas: Theater technology including 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: Production

ID: 46305      Grade: 9–12      Length: Semester  
Credit: Visual/Performing Arts

*Prerequisite: None*

The ensemble is the foundation supporting all our work in theater. Students engage in a wide variety of ensemble and theater exercises throughout the semester. They develop fundamental acting skills through scene work and acting exercises. This class is the first step in developing theatre makers and preparing performers for an active role in the co-curricular theater program.

### Theater: Advanced Production

ID: 46306      Grade: 10–12      Length: Semester II  
Credit: Visual/Performing Arts

*Prerequisite: Any theater course*

Students work in small and full-class ensembles creating and rehearsing original pieces of theatre. This work is presented as part of the Theatre Festival in April, so there is a minimal amount of after-school rehearsal required. This course is the prerequisite for the Advanced Topic Performing Arts course.

### Theater: Improvisation

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

*Prerequisite: None*

Contrary to popular belief, Improvisation performers do not just 'make it all up' on the spot. There are skills and structures providing the springboard for entertaining improvisation. Students will develop these skills and performance forms in a workshop process emphasizing collaboration and play. This course can serve as the prerequisite for Advanced Improvisation and Advanced Production.

### Theater: Advanced Improvisation

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

*Prerequisite: Theater: Improvisation*

Building on skills learned in Improvisation, students will work towards 'long form' performance. The ensemble improvises a 20-30 minute set based on prompts from the audience. The class will perform to an audience of their peers on a regular basis. This course can be repeated for credit.

## Musical Theater: History and Production

ID: 46226      Grade: 9–12      Length: Semester  
Credit: Visual/Performing Arts

Prerequisite: None

Note: Offered in 2021-22; may not be offered in 2022-23.

This course provides an in-depth study and practical application of musical theater. Class time is equally divided between a survey style examination of the history and structure of the American Musical and writing, rehearsing and performing an original musical. No prior experience is necessary but students must be willing to try all aspects of the modern musical.

## STRINGS

### Concert Strings

ID: 46213      Grade: 9–12      Length: Year  
Credit: Visual/Performing Arts

Prerequisite: Experience with a string instrument

Note: This course may be repeated for credit.

Fee: Performance attire \$50-\$150. Instrument rental at \$200 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. All students are required to attend all scheduled dress rehearsals, performances, including after school or weekends.

## String Ensemble

ID: 46209      Grade: 9–12      Length: Year  
Credit: Visual/Performing Arts

Prerequisite: Audition

Note: This course may be repeated for credit.

Fee: Performance attire \$50-\$150. A limited number of instruments are available for rental at \$200 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. All students are required to attend all scheduled dress rehearsals, performances, including after school or weekends.

### Chamber Strings

ID: 46229      Grade: 9–12      Length: Year  
Credit: Visual/Performing Arts

Prerequisite: Audition

Note: This course may be repeated for credit.

Fee: Performance attire \$50-\$150. A limited number of instruments are available for rental at \$200 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 (think... "Instrumental Music AP"). The instrumentation for this ensemble will be set at 12 violins, 4 viola, 4 cello and 2 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. All students are required to attend all scheduled dress rehearsals, performances, including after school or weekends.

## INSTRUMENTAL MUSIC

### Concert Band

ID: 46202      Grade: 9–12      Length: Year  
Credit: Visual/Performing Arts

*Prerequisite:* Intermediate to advanced ability on a band instrument.

*Note:* This course may be repeated for credit.

*Fee:* Performance attire \$50-\$150. A limited number of instruments are available for rental at \$200 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. All Concert Band members are required to attend all scheduled dress rehearsals, performances, including after school or weekends.

### Symphonic Band

ID: 46210      Grade: 9–12      Length: Year  
Credit: Visual/Performing Arts

*Prerequisite:* Audition

*Note:* This course may be repeated for credit.

*Fee:* Performance attire \$50-\$150. A limited number of instruments are available for rental at \$200 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. All Symphonic Band members are required to attend all scheduled dress rehearsals, performances, including after school or weekends.

### Wind Ensemble

ID: 46208      Grade: 9–12      Length: Year  
Credit: Visual/Performing Arts

*Prerequisite:* Audition

*Note:* This course may be repeated for credit.

*Fee:* Performance attire \$50-\$150. A limited number of instruments are available for rental at \$200 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. All Wind Ensemble members are required to attend all scheduled dress rehearsals, performances, including after school or weekends.

### Jazz Improvisation

ID: 46217      Grade: 10–12      Length: Semester  
Credit: Visual/Performing Arts

*Prerequisite:* Successful audition to Wind Ensemble and teacher recommendation.

*Note:* This course may be repeated for credit.

*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 HS 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. All students are required to attend all scheduled dress rehearsals, performances, including after school or weekends.

## VOCAL MUSIC

**Concert Choir - Chorale**

ID: 46203/46205 Grade: 9–12 Length: Semester/Year  
Credit: Visual/Performing Arts

*Prerequisite: None*

*Note: This course may be repeated for credit.*

*Fee: Performance attire S\$50-\$150*

The SAS Chorale (Concert Choir) is an SATB choir 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 have the opportunity to participate in the Annual SAS Music Festival, Collage, Solo/Ensemble Event and the Biennial Masterworks Concert. Students choosing this course may take it for just one semester (ID: 46203) or for the full year (select both ID: 46203 and 46205). In order to be eligible to audition for SAS Singers, this course must be taken for the whole year. All Chorale members are required to attend all scheduled dress rehearsals and/or performances, including after school or weekends.

**Choral Ensemble - Chanterie**

ID: 46212 Grade: 9–12 Length: Year  
Credit: Visual/Performing Arts

*Prerequisite: None*

*Note: This course may be repeated for credit.*

*Fee: Performance attire S\$50-\$150*

The SAS Chanterie is a choral community made up of treble voices 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 3-4 per semester. Chanterie members will have the opportunity to participate in The Annual SAS Music Festival, Winter Collage, Solo/Ensemble Event and the Biennial Masterworks Concert. All Chanterie members are required to attend all scheduled dress rehearsals and/or performances, including after school or weekends.

**SAS Singers**

ID: 46206 Grade: 10–12 Length: Year  
Credit: Visual/Performing Arts

*Prerequisite: Audition (must also have completed 1 continuous year of SAS high school choir during the year of the audition).*

*Note: This course may be repeated for credit.*

*Fee: Performance attire S\$50-\$150*

SAS Singers is a small 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 sing many genres of music including jazz, popular and madrigal music as well as top-level choral repertoire. Each member will also be expected to function as an integrated choral member within the other two choirs for major classical works. The Singers frequently represent the school in the community, sometimes 5-8 times per semester. SAS Singers have one required evening rehearsal per week.

## ADDITIONAL MUSIC COURSES

**Introduction to Guitar**

ID: 46214 Grade: 9–12 Length: Semester  
Credit: Visual/Performing Arts

*Prerequisite: None*

*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 \$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

*Prerequisite:* None

This course is designed for any student who would like to use dance to develop physical fitness, confidence, and the 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 hip hop, contemporary and jazz. 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 required to take Dance 1 before taking other dance courses, 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.

## 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, skills and technique. This class provides an intensive approach to skill development, etiquette, discipline, and knowledge of three dance styles: hip hop, 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 which will be covered throughout the semester. 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. The course will also provide an opportunity for dancers to study and discuss and analyze dance history, influential practitioners 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.



## 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 (4:15-6:00 PM), 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. This course may be repeated for credit.

## ADVANCED STUDIES OPTIONS

### AT Performing Arts & Catalyst

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 prerequisites.*

*Note: Completing this course is one of the ways in which a student may fulfill the Catalyst graduation requirement. 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. This course has an additional grade point weighting of 0.5.*

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: guided research, exploration of methodologies, development of a performance, and in depth 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 would like to study choreography and production aspects more intensely. Students will continue to be part of the Dance Performance class and the two semester productions, and will also engage in guided research, exploration of methodologies, development of a performance, and in-depth reflection.
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.
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. They will work in ensembles to examine and develop ideas to generate theatrical material for performance. AT Theater students must be enrolled in a theater course both semesters of their senior year.

Please note that during the school year, AT Performing Arts students across disciplines meet weekly to conduct guided research, explore methodologies, develop performances, establish connections with artistic advisors, and engage in in-depth reflection.

# PHYSICAL EDUCATION

Students must successfully complete three semester courses in Physical Education. 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. Please see the Visual & Performing Arts section for our dance offerings which may also fulfill physical education credits. All students in physical education classes are encouraged to participate actively in physical fitness, conditioning, and aerobic activities on a regular basis. Students will be assessed on course specific content and Active Class Engagement (ACE). Students will also receive formative feedback on their current fitness levels. Common scores from SAS and North America are used to provide teachers, students and parents with normative data for comparison.

Technology is integrated, where applicable, into the PE curriculum. The department adopts relevant applications as they become available. Video recording of skills acquisition is routinely utilized to ensure that students are grasping specific movement patterns inherent in the learning of skills.

## Field Hockey, Softball, & Modified Golf

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

*Prerequisite: None*

This PE course will include the following 3 core disciplines/activities: hockey (field and/or floor hockey), softball, and golf (modified based on area of play - school fields). Each of the sports will focus on fundamental movement patterns (i.e. passing & receiving, dribbling, shooting, batting, throwing & catching, running, fielding, swinging, putting) designed to make the student competent with regard to the basic skill and knowledge sets. Students will demonstrate and participate in organised play and class competition and challenges. 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 final exam project at the end of the course.

## Fitness for the Body & Mind

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

*Prerequisite: None*

This course is designed to teach students the process of using exercise to not only challenge the body but also to stimulate the brain. Students will experience 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 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 cognitive development by providing physical and mental challenges that may result in stronger focus, self-discipline, and ultimately, increased self-confidence.

## Group Fitness

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

*Prerequisite: None*

This course emphasizes strength and fitness conditioning through a variety of group fitness related exercises and workouts. It is designed to encourage intense and vigorous participation with a focus on the basic foundations of movement. Students will use a variety of fitness tools and equipment, including: 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 athletes and will learn exercises to increase strength, endurance, coordination, flexibility and balance. 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 the opportunity to dive more deeply into 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', a SAS 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 explored in the course.

### **Indoor Team Sports**

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

*Prerequisite: None*

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. At the conclusion of the course, students should be able to play all sports with enjoyment and increased confidence.

### **International Sports**

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

*Prerequisite: None*

This PE course will include the following 4 core disciplines/activities: tchouckball, cricket, ultimate frisbee, archery. Each of the sports will focus on fundamental movement patterns (i.e. passing & receiving, dribbling, shooting, batting, running, fielding) designed to make the student competent with regard to the basic skill and knowledge sets. Students will demonstrate and participate in organised play and class 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 final exam project at the end of the course.

### **Climbing & Adventure Training**

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

*Prerequisite: None*

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 the essential safety information needed to participate. Boulderering, belay work, various climbing routes, rappelling and constant communication are skills that will be recurring throughout 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.

### **Soccer, Flag Football & Touch Rugby**

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

*Prerequisite: None*

Through this course students will become knowledgeable about the rules and regulations of soccer, flag football, and touch rugby. Each of the sports will focus on fundamental movement patterns (i.e. passing & receiving, dribbling, shooting, throwing, running, fielding) designed to make the student competent with regard to the basic skill and knowledge sets. Students will 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 final exam project at the end of the course.

## Racquet Sports

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

Prerequisite: None

This course is designed to expose students to four distinct racquet activities: badminton, table tennis, pickleball, and tennis. The course will focus on stroke development, game analysis and play refinement. Students will work on improving hand-eye coordination, footwork, positioning, and reaction time. Singles and doubles play strategies will also be presented. Practicing court etiquette, officiating, scoring and participating in round robin tournaments will conclude the class activities. A comprehensive skill and written assessment will be administered at the conclusion of each unit, as well as a practical final exam project at the end of the course.

## Personal Defense & Combatives

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

Prerequisite: None

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.

## Athletics

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

Prerequisite: None

This course primarily focuses on “track & field” based activities/events and is a multi-event training program. The goal is for students to be exposed to both running (sprinting & longer distances) and field events (jumping & throwing), to ensure broad-based training and skill development within diverse disciplines. The multi-event training approach enables students to achieve technical knowledge of events, as well as gain stamina and fitness simultaneously. Both written and physical assessments will conclude each unit, as well as a final video project at the end of the course.

## Weight Training & Conditioning I

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

Prerequisite: None

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 & 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.

**Aquatics: Aqua Fit**

ID: 48020      Grade: 9–12      Length: Semester  
Credit: Physical Education

*Prerequisite: None*

*Note: This course was formerly known as Aquatics I. Students do not need to be strong swimmers, however a basic swim test may be required.*

This course is designed to provide students of all swimming abilities an opportunity to participate in a workout for the whole body while in the water. Activities will increase cardiovascular fitness, muscle tone, coordination and joint mobility while enhancing physical and mental fitness. Exercises will take place in both the shallow and deep end, teaching participants how to adapt each session to their own level of swimming and fitness skills. Students will learn the benefits of water based exercises to explore lifelong fitness in an aquatic setting. This will be done through different water workouts, personal goals, group exercises and using a variety of equipment such as water weights, flotation belts, kickboards, pool noodles and guest instructor sessions.

**Lifeguarding**

ID: 48023      Grade: 9–12      Length: Semester  
Credit: Physical Education

*Prerequisite: Must be at least 15 years before the end of course and be able to pass the 300m (12 lap) swim, 2 minute treading water and timed dive brick retrieval test. If uncertain about your swimming skills, consult with a PE teacher before requesting this course.*

*Note: Enrollment is limited. Preference will be given to upper grades in the case of over-subscription.*

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 STUDIES 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.*

*Note : Students may opt to attain 2 college credits through co-enrollment with the University of South Carolina. 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. This course has an additional grade point weighting of 0.5.*

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, motor behavior, sport and exercise psychology and sociology. Students will have the opportunity to apply course content through inquiry-based learning. Students' culminating research articles 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 pre-medical fields.

# 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, healthy relationships and consent, drug and alcohol issues, and decision–making.

## Life Skills & Human Development

ID: 48010      Grade: 10–12      Length: Semester  
Credit: Health

Prerequisite: None

*Note : Life Skills has been redeveloped to merge with many of the elements from Body & Mind Wellness.*

The course has been designed to provide students with an opportunity to learn, discuss and explore timely topics relevant to their overall well-being. The main topics that will be covered are sexual health, mental health and healthy relationships. It's aim is to help students become aware of appropriate lifestyle decisions that will support the many challenges they face in their high school lives and beyond. This will be done through guided reflection activities and learning communication skills. Awareness around personal bias and cultural differences will help to facilitate an understanding of oneself and others. Open and mature attitudes are needed in order to participate in conversations around these emotional, critical issues. This will be a very hands-on, participation focused, application minded class.

## Safety & First Aid

ID: 48012      Grade: 10–12      Length: Semester  
Credit: Health

Prerequisite: None

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. All Health courses will contain seminars on critical issues including topics related to relationships and consent, sexuality education, anxiety, and substance abuse/misuse.

## Body Systems & Diseases

ID: 48011      Grade: 10–12      Length: Semester  
Credit: Health

Prerequisite: None

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. 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 decision making, 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. All Health courses will contain seminars on critical issues including topics related to relationships and consent, sexuality education, anxiety, and substance abuse/misuse.



## QUEST

### NEW QUEST PROGRAMMING FOR 2021-22

Are you ready to take control of your learning? Quest is an innovative all-day, year-long program for juniors and seniors at SAS. Quest provides structure and time for you to pursue your intellectual curiosities and personal ambitions, and our new programming provides greater access and flexibility to our students than ever before.

## WHAT IS NEW?

- **ONE-DAY QUEST FOR JUNIORS AND SENIORS**

The one-day Quest option is open to interested juniors and seniors. The one-day option will offer four courses within Quest. In 2021-22, Quest students to be a part of either an A-Day cohort or a B-Day cohort. For example, a student in the A-Day cohort would receive credit for four Quest courses all taken on their A-Day and would have their B-Day free to take up to three classes outside of Quest. The one-day option is an enhancement to SAS students' existing educational opportunities already available through our mainstream course offerings. One-day Quest students will earn four credits by engaging with interdisciplinary projects and institutional partnerships (similar to unpaid internships) personalized to their interests. An optional fifth elective credit in Ethics and Leadership is offered as well. SAS will send a traditional transcript to college admissions officials reflecting the rigor of the Quest program.

- **TWO-DAY SENIORS-ONLY QUEST - FULL IMMERSION**

The two-day Quest option allows for a senior to be all-in. Seniors would earn six credits within Quest and will be scheduled in Quest on both their A and B days. The benefit of the two-day program is the opportunity to maximize time for off-campus experiential learning, such as completing a partnership (similar to unpaid internship) up to five days per week or in-depth research in the first semester. In the second semester, students continue to have the flexibility and time for other off-campus or off-island opportunities outside of school.

- **QUEST ELEMENTS COMMON TO ONE-DAY AND SENIORS-ONLY TWO-DAY PROGRAM**

Students of both the one-day and two-day options have opportunities for the partnership and the year-long in-depth research. Both will also fulfill the Catalyst graduation requirement. Every student in Quest completes a research thesis called the student-driven study (SDS), and students may choose to receive all, some, or no Advance Topic credits for their Quest credits. A student may also choose to submit their SDS thesis to AP Research and use their learning from Data Analysis and Visualization to take the AP Statistics exam.



## QUEST CORE ELEMENTS

- Small learning communities that allow for personalized learning and daily one-on-one mentoring.
- Students receive differentiated learning support based on their individual needs and their level of courses.
- Learning experiences emphasize the application and synthesis of knowledge and the development of essential skills and dispositions.
- The essential skills include explicit, measurable, transferable learning outcomes that empower students.
- Assessments are meaningful, embedded, performative, authentic, and positive learning experiences.
- Students advance upon demonstrated mastery of skills, not seat time.

## PROGRAM OVERVIEW

	ONE-DAY QUEST	TWO-DAY QUEST
OPEN TO	Juniors & Seniors	Seniors only
NUMBER OF CREDITS WITHIN QUEST	4	6
NUMBER OF CREDITS OUTSIDE OF QUEST	2-3	0
FULL-DAY ?	Yes (A or B day cohort)	Yes (A and B days)
OFF-CAMPUS UNPAID INTERNSHIP	Yes 11 weeks, every other day	Yes 8 weeks, potentially everyday
STUDENT-DESIGNED STUDY	Yes	
LAUNCH TRIP	Yes 1-2 weeks before the beginning of the school year, dependent upon travel restrictions	
FULFILLS CATALYST REQUIREMENT?	Yes	

## YEAR OVERVIEW

Quest aligns with the SAS calendar to ensure students may participate in extracurricular programs.

Quest units stress skill acquisition through collaborative interdisciplinary projects. Students work with the Quest teacher advisors, supervisors during their partnership, and a professional mentor on their student-driven study (SDS), which culminates in a thesis paper, talk, and defense. Exploration of Southeast Asian topics through systems thinking protocols will inspire need-finding and challenge students to take civic action engaging with school, community, and global networks to contribute to the worldwide community. Throughout the year, students hone skills in time management, project organization, and desired student learning outcome (DSLO) skills such as critical thinking, creativity, cultural curiosity, and communication, all of which are essential skills for their future. Students in Quest experience the workplace in scaffolded partnerships while working with experts in industries, universities, and NGOs, which may differentiate them from other students in the college application process.

**ONE-DAY QUEST JUNIOR / SENIOR COURSE TITLES AND OPTIONS FOR CREDIT**

SUBJECT	COURSE LEVEL: COLLEGE PREP	COURSE LEVEL: ADVANCED TOPIC (AT)
English	Research & Composition	AT Research *May submit to College Board
Math	Data Analysis & Visualization	AT Data Analysis & Visualization *May take AP Statistics exam
Science	Conservation & Resource Studies	AT Conservation & Resource Studies
Social Studies	Society, Governance & Civic Action	AT Society, Governance & Civic Action

- Systems thinking and global development concepts and skills will be embedded within every unit to guide critical analysis of systems' sustainability.
- Optional one-day Quest college prep elective: Ethics and Leadership. Appreciation of ethical frameworks in diverse systems, commitment to the fundamental equality of all people.

**TWO-DAY SENIORS-ONLY QUEST COURSE TITLES AND OPTIONS FOR CREDIT**

SUBJECT	COURSE LEVEL: COLLEGE PREP	COURSE LEVEL: ADVANCED TOPIC (AT)
English	Research & Composition	AT Research *May submit to College Board
Math	Data Analysis & Visualization	AT Data Analysis & Visualization *May take AP Statistics exam
Science	Conservation & Resource Studies	AT Conservation & Resource Studies
Social Studies	Society, Governance & Civic Action	AT Society, Governance & Civic Action
Required or mandatory	Ethics and Leadership	
	Global Online Academy (GOA) Course of Choice	

- Systems thinking and global development concepts and skills will be embedded within every unit, examining context through various lenses while applying systems thinking to guide critical analysis of multiple systems' sustainability.

## QUEST DAILY SCHEDULE IN ONE-DAY AND TWO-DAY PROGRAMS

Students in Quest will schedule their particular time around the Quest community times, their eleven week-every-other-day internship/partnership, and their selected course/s. Throughout the day, the Quest teachers (advisors) meet with students individually, in small groups, and occasionally conduct traditional lessons. When students don't have other SAS courses, Quest advisors may take them off-campus for various experiential learning activities. Throughout units, continual individual feedback is provided to ensure students meet expectations and discover strategies that work best to be responsible for their learning. As such, there is no set schedule for how all Quest students will spend their time. Each student will have the flexibility and accountability to plan their time as needed.

Former senior Quest students say this has had a positive impact on their ability to manage independent time in college; former junior Quest students report being ahead of the curve in time management back in SAS's mainstream courses.

Former Quest students have gone on to attend various universities around the world. Because of the strong community bonds that Quest members build, there is regular contact with former students who all attest to the positive impact of the skills developed in Quest :

*"Quest empowered me in many ways. Not only did the program bless me with foolproof time management skills and the ability to network with adults like a pro, but it also granted me the autonomy to truly discover what I'd like to do in the future. Through reading about my favorite topics, interning at a graduate-level research team from NUS Business School, and choosing a thesis topic, I was able to delve deep into my many interests and pick out the ones I genuinely enjoyed. The experience gave me time and support for thorough self-exploration and refinement. Now, fully equipped with professional skills and more insight into my endeavors, I have gained a head start to adulthood through the Quest program."*

- Juliet Mao, Quest senior 2019-2020

Quest students will begin the year with a launch trip. The eight-day up to two-week trip will build the Quest community of learners and serve as a launching point for learning throughout the year. Students will engage in team-building activities, outdoor education, and experiential learning. They will also engage in the scientific investigation of tropical biodiversity and be exposed to the region's rich cultural heritage.

## CORE QUEST COURSES COMMON TO ONE-DAY AND TWO DAY PROGRAMS

### English: Research & Composition

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

Prerequisite: None

To receive credit in English Research & 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, gather and analyze scholarly journals, and complete their data's statistical analysis. Their research will culminate 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.

### Social Studies: Society, Governance, & Civic Action

ID: 48538    Grade: 11–12    Length: Year  
Credit: Social Studies

Prerequisite: Completion of one year of social studies.

Students will delve into the characteristics and complexities of organizing societies and what it means to govern. Students will understand the role, responsibility, and limitations of citizens in maintaining, supporting, challenging, and changing how we effectively manage contemporary issues through civic engagement and the interplay between industry, civil society,

and government. Quest students will co-create meaningful, authentic learning tasks that deepen their understanding of citizens' roles, examine their worldviews and notions of governance, and broaden their perspectives of what it means to participate in society. Power and the role industry and civil society play will be further examined through student-selected work and volunteer experiences off-campus. Students will present their work in authentic ways intended for public forum and discourse.

### Science: Conservation & Resource Studies

ID: 48536      Grade: 11–12      Length: Year  
Credit: Science

*Prerequisite: Completion of a chemistry course; or current science teacher recommendation.*

Students will explore environmental issues and areas of interaction among natural resources, population, energy, technology, societal institutions, and cultural values through an interdisciplinary lens. They are drawing on course concepts, skills, and community resources in the development of personalized projects. The course is oriented toward understanding the structure and dynamic functions of complex environmental systems within our society and the biosphere. Beyond fundamental concepts of ecology, students will study, analyze, and evaluate a range of environmental issues, both natural and human-made, through the lenses of science, technology, and society. Quest will challenge students to examine solutions for resolving and preventing environmental problems. Ecology investigations will include fieldwork in regional Southeast Asia ecosystems and human-impacted systems such as plantation agriculture and urban systems.

### Math: Data Analysis & Visualization

ID: 48534      Grade: 11–12      Length: Year  
Credit: Math

*Prerequisite: Completion of Geometry; or recommendation of Quest advisor.*

To receive credit in Math: Data Analysis & Visualization, students are required to demonstrate their learning in interpreting categorical and quantitative data, making inferences, justifying conclusions, and using probability to make decisions. The focus of the course is on deeply understanding the core concepts of statistical analysis and interpreting data. Students will collect, organize, represent, analyze, and visualize data through statistical software such as Tableau and a programming language such as R.

## ADVANCED STUDIES COURSE OPTIONS

### AT English: Research & Composition

ID: 48526      Grade: 11–12      Length: Year  
Credit: English

*Prerequisite: Semester I grade of A or higher in 10 or 11th-grade English course; or current English teacher recommendation.*

*Note: Quest students who completed AP Seminar and earned a three or better score on the exam may choose to submit the thesis papers they produce in this course to the College Board for AP Research exam scoring. Quest will support students to follow the AP Research guidelines. To earn the AP Capstone Diploma, students must earn three or higher scores on the AP Seminar and AP Research exams and four additional AP exams. The Advanced Topic (AT) designation indicates a course is at the university level, putting it at or above the traditional Advanced Placement (AP) course level. This course has an additional grade point weighting of 0.5.*

Please see above for a detailed description of English: Research & Composition. Students wishing to earn Advanced Topic credit in English: Research & Composition will practice narrative, oral communication, digital communication, and argumentative skills at a level that demonstrates the 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.

### AT Social Studies: Society, Governance, & Civic Action

ID: 48539      Grade: 11–12      Length: Year  
Credit: Social Studies

*Prerequisite: Semester I grade of B or higher in 10th or 11th-grade Social Studies course; or current/prior Social Studies teacher recommendation.*

*Note: The Advanced Topic (AT) designation indicates a course is at the university level, putting it at or above the additional Advanced Placement (AP) course level. This course has an extra grade point weighting of 0.5.*

Please see above for a detailed description of Social Studies: Society, Governance, and Civic Action. 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 communication and analysis skills. Students will practice independent research skills to collect, organize, represent, and analyze their ideas at a level that demonstrates these skills in-depth application. Students will complete projects that may be self-selected but may also be suggested by the advisors.

**AT Science: Conservation & Resource Studies**

ID: 48537      Grade: 11–12      Length: Year  
Credit: Science

*Prerequisite:* Completion of a chemistry course with a grade of B or higher; or completion of a physics course with a grade of B or higher; or current science teacher recommendation.

*Note:* The Advanced Topic (AT) designation indicates a course is at the university level, putting it at or above the additional Advanced Placement (AP) course level. This course has an extra grade point weighting of 0.5.

Please see above for a detailed description of Science: Conservation & Resource Studies. AT-level students will be required to go above and beyond the college preparatory conservation and resource studies course requirements and demonstrate a higher rigor level throughout the investigative process, experiential fieldwork, field journaling, application, and reflection.

**AT Math: Data Analysis & Visualization**

ID: 48535      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 Quest advisor's recommendation.

*Note:* The Advanced Topic (AT) designation indicates a course is at the university level, putting it at or above the additional Advanced Placement (AP) course level. This course has a different grade point weighting of 0.5.

Please see above for a detailed description of Math: Data Analysis & Visualization. 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 analysis skills. Students are required to collect, organize, represent, analyze, and visualize their data through the use of statistical software such as Tableau and a programming language such as R. Students will work in partnership with the Quest advisors to also define their advanced learning objectives and how they go beyond the requirements of the college preparatory level to attain Advanced Topic credit. Students can elect to prepare to take the AP Statistics exam.

**OPTIONAL ELECTIVE: ONE-DAY JUNIORS/****SENIORS PROGRAM OR REQUIRED FOR TWO-DAY SENIORS-ONLY PROGRAM****Ethics & Leadership**

ID: 48541      Grade: 11–12      Length: Year  
Credit: Elective

*Prerequisite:* None

This course requires students to examine ethical frameworks of leadership in diverse systems and different contexts. Students will explore leadership and power and what it means to be a “good” leader. Students will examine the moral responsibility and accountability for ethical leadership and how leadership impacts organizational well-being, health, productivity, and cohesion. Students will build an understanding of the role of trust in sustaining human interaction. Students will also examine breakdowns in trust and institutional corruption and its causes. In addition to studying theories and case studies, students will apply what they are learning in their daily lives. Students will practice cultural curiosity and commit to all people's fundamental equality while demonstrating humility, respect, reciprocity, and integrity. The course will provide opportunities to appreciate every person's potential regardless of socioeconomic circumstances or cultural origin.

**REQUIRED FOR TWO-DAY SENIORS-ONLY PROGRAM**

Global Online Academy Course (student choice) please refer to GOA Online Learning on Page 44.

## ADVANCED STUDIES

SAS is committed to meeting the diverse needs of our students by providing a range of exceptional learning opportunities.

The Advanced Studies program consists of our school's college level course options. The program now includes over 40 college level offerings and is one of the many ways in which our school is working towards its vision of cultivating exceptional thinkers prepared for the future.

As we pursue this vision, we recognise the benefits to our students associated with both standardized and non-standardized approaches to student learning. It is for this reason that the Advanced Studies program is a hybrid of standardized and non-standardized curricula that includes both Advanced Placement (AP) courses and Advanced Topic (AT) courses.

### ADVANCED TOPICS AT SAS

Our AT courses are designed to foster the development of essential 21st-century skills as well as to provide opportunities for students to showcase these skills in ways that are both authentic and unique. These courses are designed to help students to learn by doing, emphasizing production and real world application. Whenever possible, AT courses also connect students with relevant experiences and expertise in the field. Depth is prioritized over breadth, and students are expected and supported to have agency in directing their own learning.

Peak performance in AT courses is diverse, with students collaboratively publishing books, learning Chinese history in Chinese, co-constructing historical inquiries, planning and producing their own performing arts exhibitions, exploring physical phenomena through computer modeling, and even consulting for local entrepreneurs.

It is impossible to capture all aspects of the experience in this guide so we encourage you to reach out to our teaching faculty and counselors for further guidance and support.

### ADVANCED PLACEMENT AT SAS

SAS has a long and successful history with the AP program, with students and faculty collaborating together to deliver exceptional results in over 20 courses each year. For many of our students, our AP program provides the perfect entry point to college level learning and plays a critical role in helping to develop college readiness.

SAS students may earn up to seven (7.0) year-long-equivalent AP credits during their high school careers. Though students may only earn seven AP credits, it is possible for students who plan appropriately to take more than seven AP exams. If you have any questions about the credit limit, please feel free to contact the college counseling department or high school administration.

Taking the AP exam in an AP Course is not mandatory. However, each year SAS has over 600 students taking a total of almost 2000 AP exams. Successfully delivering a program of this scale while still operating a full campus is a significant undertaking. As a result, SAS is only able to provide access to AP exams to students currently enrolled in the corresponding AP course, or in an aligned AT course. Similarly, faculty can only provide predicted AP scores to students currently enrolled in their classes. Students wishing to take an AP exam in a course in which they are not currently enrolled may contact their counselor who will be able to suggest a testing center here in Singapore.

### EARNING COLLEGE CREDIT AT SAS

The AP program provides one potential avenue for earning college credit. We are also pleased to be able to offer this opportunity through our continued partnerships with Syracuse University and the University of South Carolina. During the 2021-22 school year, SAS students taking AT Computational Physics, AT Economics: Globalization, and AT Psychology are eligible for concurrent enrollment in Syracuse University courses. Students taking AT Kinesiology are eligible for concurrent enrollment in University of South Carolina courses.

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>) and universities themselves. We will continue to explore partnerships with Syracuse University for some of our other AT courses in subsequent years.

## SUMMARY OF COURSE OFFERINGS

We are fortunate to be in a position to offer such a diverse range of college level learning opportunities and are grateful for the work of our exceptional faculty in continuing to strengthen our program. We encourage you to reach out to our high school counselors or our Head of Advanced Studies, Tim Trainor ([ttrainor@sas.edu.sg](mailto:ttrainor@sas.edu.sg)), should you have any questions or need support. The following section offers a brief summary of all our Advanced Studies offerings. For full course descriptions, please refer to the entries for each course that appear earlier in this guide. A full course list may also be found in Appendix II.

### ENGLISH

#### AP English Language & 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 11th grade. Students with a Semester I grade of B in English 10/American Studies or a Semester I grade of A+ in both English 9 & World History or World Studies may seek an override which requires approval from current English teacher, counselor, and English department chair.*

#### AT English: Writing Workshop & Publication

ID: 41046    Grade: 11–12    Length: Year  
Credit: English

*Prerequisite: Any English AP/AT course; or Semester I grade of B or higher in an 11th-grade English course; or Semester I grade of B+ or higher in English 10/American Studies. Students with a Semester I grade of B in English 10/American Studies may seek an override which requires approval from current English teacher, counselor, and English department chair.*

#### AT English: Literature

ID: 41047    Grade: 11–12    Length: Year  
Credit: English

*Prerequisite: Any English AP/AT course; or Semester I grade of B or higher in an 11th-grade English course; or Semester I grade of B+ or higher in English 10/American Studies. Students with a Semester I grade of B in English 10/American Studies may seek an override which requires approval from current English teacher, counselor, and English department chair.*

### SOCIAL STUDIES

#### AP U.S. 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 grade 10; a B or higher in a 10th- or 11th-grade social studies course is required to select this course in grades 11 or 12, or current teacher recommendation.*

#### AT Historical Inquiry & Research

ID: 42064    Grade: 10–12    Length: Year  
Credit: Social Studies

*Prerequisite: Semester I grade of A or higher in World History/World Studies is required to select this course in grade 10; a B or higher in a 10th- or 11th-grade social studies course is required to select this course in grades 11 or 12, or current teacher recommendation.*

#### AP U.S. Government & Politics

ID: 42035    Grade: 11–12    Length: Semester I  
Credit: Social Studies

*Prerequisite: Semester I grade of B or higher in a 10th- or 11th-grade social studies course is required; or current teacher recommendation.*

#### AP Comparative Government & Politics

ID: 42031    Grade: 11–12    Length: Semester II  
Credit: Social Studies

*Prerequisite: Semester I grade of B or higher in a 10th- or 11th-grade social studies course is required; or current teacher recommendation.*



**AT Geography & Field Research**

ID: 42063      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 grade 10; a Semester I grade of B or higher is required in a 10th-grade social studies course to select this course in grade 11; or current teacher recommendation.

**AT Urban Studies**

ID: 42060      Grade: 11–12      Length: Semester  
Credit: Social Studies

*Prerequisite:* AT Geography; or a Semester I grade of B or higher in a 10th- or 11th 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 10th- or 11th-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 10th- or 11th-grade social studies course; or current teacher recommendation.

**AT Economics: Globalization**

ID: 42061      Grade: 11–12      Length: Semester  
Credit: Social Studies

*Prerequisite:* AP Economics; or a Semester I grade of A or higher in Economics plus teacher recommendation.

**AT Psychology**

ID: 42062      Grade: 11–12      Length: Year  
Credit: Social Studies

*Prerequisite:* Semester I grade of B or higher in a 10th- or 11th-grade social studies course; or current teacher recommendation.

**MATHEMATICS****AP Calculus AB**

ID: 43026      Grade: 9–12      Length: Year  
Credit: Math

*Prerequisite for 2021-22:* Semester 1 grade of B or higher in Pre-Calculus or Accelerated Math II. Semester 1 grade of A or higher in ISP.

*Prerequisite for 2022-23:* Semester 1 grade of B or higher in Pre-Calculus with Statistics. Semester 1 grade of C or higher in Pre-Calculus with Parametrics or Accelerated Math II.

**AP Calculus BC**

ID: 43032      Grade: 9–12      Length: Year  
Credit: Math

*Prerequisite for 2021-22:* Semester 1 grade of A or higher in Pre-Calculus. Semester 1 grade of A or higher in Accelerated Math II.

*Prerequisite for 2022-23:* Semester 1 grade of B or higher in Pre-Calculus with Parametrics or in Accelerated Math II.

**AP Calculus BC (Post-AB)**

ID: 43033      Grade: 9–12      Length: Semester I  
Credit: Math

*Prerequisite:* Semester I grade of B or higher in AP Calculus AB.

**AP Statistics**

ID: 43028      Grade: 9–12      Length: Year  
Credit: Math

*Prerequisite for 2021-22:* Semester 1 grade of A or higher in Accelerated Math I, Algebra II/Trig; or a Semester I grade of B or higher in ISP; or a Semester 1 grade of C+ or higher in Pre-Calculus.

*Prerequisite for 2022-23:* Semester 1 grade of A or higher in Accelerated Math I, Algebra II/Trig; or a Semester I grade of B or higher in Pre-Calculus with Statistics; or a Semester 1 grade of C or higher in Pre-Calculus with Parametrics.

**AT Post-Euclidean Geometry**

ID: 43041      Grade: 9–12      Length: Semester I  
Credit: Math

*Prerequisite for 2021-22:* 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 ISP; or a Semester I grade of C+ or higher in Pre-Calculus. Students must also have successfully completed a high school Geometry course or equivalent.

*Prerequisite for 2022-23:* Semester 1 grade of A or higher in Accelerated Math I, Algebra II/Trig; or a Semester I grade of B or higher in Pre-Calculus with Statistics; or a Semester 1 grade of C or higher in Pre-Calculus with Parametrics. 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 for 2021-22: 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 ISP; or a Semester I grade of C+ or higher in Pre-Calculus.*

*Prerequisite for 2022-23: Semester 1 grade of A or higher in Accelerated Math I, Algebra II/Trig; or a Semester I grade of B or higher in Pre-Calculus with Statistics; or a Semester 1 grade of C or higher in Pre-Calculus with Parametrics.*

**AT Multivariable Calculus**

ID: 43043      Grade: 9–12      Length: Semester  
Credit: Math

*Prerequisite: Completion of AP Calculus BC; or concurrent request with semester-long AP Calculus BC (Post-AB)*

**AT Linear Algebra**

ID: 43044      Grade: 9–12      Length: Semester  
Credit: Math

*Prerequisite: Semester I grade of A or higher in AP Calculus AB; or Completion of AP Calculus BC; or concurrent request with semester-long AP Calculus BC (Post-AB).*

**SCIENCE****AP Biology**

ID: 44027      Grade: 11–12      Length: Year  
Credit: Life Science

*Prerequisite: Final grade of B or higher in Biology or Accelerated Biology, plus a final 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 II grade of A or higher in Chemistry; or Semester I grade of B or higher in Accelerated Chemistry; or current teacher recommendation.*

**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 II grade of A or higher in Chemistry; or Semester I grade of B or higher in Accelerated Chemistry; or current teacher recommendation.*

**AP Physics 2**

ID: 44033      Grade: 11–12      Length: Year  
Credit: Physical Science

*Prerequisite: Semester I grade of B or higher in 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 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.*

**AT Computational Physics**

ID: 44050      Grade: 10–12      Length: Year  
Credit: Physical Science

*Prerequisite: Semester I grade of A in Conceptual Algebra II; or completion of Algebra II/Trig or higher level math course.*

**AT Environmental Science & 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 grade 10. Semester II 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 grades 11 or 12*

**WORLD LANGUAGES****AP French Language & Culture**

ID: 45023      Grade: 10–12      Length: Year  
Credit: Language

*Prerequisite: Current teacher recommendation*

**AP Spanish Language & Culture**

ID: 45024      Grade: 10–12      Length: Year  
Credit: Language

*Prerequisite: Current teacher recommendation*

### **AT Spanish Language: Latin American History and Culture Through Arts & Media**

ID: 45049      Grade: 11, 12      Length: Year  
Credit: Language

*Prerequisite: Demonstrated proficiency level of Advanced Low or higher.*

### **AP Chinese Language & Culture**

ID: 45025      Grade: 10–12      Length: Year  
Credit: Language

*Prerequisite: Current teacher recommendation*

### **AT Chinese Language: History**

ID: 45029      Grade: 10–12      Length: Year  
Credit: Language

*Prerequisite: Demonstrated proficiency levels of Advanced Low or higher in all four skills.*

*Note: 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. Like an AP course, this course has an additional grade point weighting of 0.5.*

## **TECHNOLOGY, ELECTIVES AND CAPSTONE (TEC)**

### **AP Computer Science**

ID: 44520      Grade: 10–12      Length: Year  
Credit: Elective

*Prerequisite: Semester grade of B or higher in Computer Science I; Students, including incoming 9th grade students, who have experience with Java, but do not meet these requirements may speak with AP CS faculty to determine readiness.*

### **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 1 grade of A or better in World History/World Studies is required to select this course in grade 10; a B or higher in a 10th or 11th grade social studies course is required to select this course in grades 11 or 12, 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 grade 10. Semester 1 grade of B+ or higher in English 10/American Studies is required to select this course in grade 11. Students who do not meet the pre-reqs need to schedule an appointment with the current AT Seminar teachers and the Department Chair.*

### **AT Research & Catalyst**

ID: 48515      Grade: 11–12      Length: Year  
Credit: Elective

*Prerequisite: Semester I grade of B or higher in AP Seminar or AT Seminar.*

### **The SAS Catalyst Project**

ID: 48509/48510      Grade: 11–12      Length: Semester  
Credit: Elective

*Prerequisite: None*

## **VISUAL AND PERFORMING ARTS**

### **AP Drawing**

ID: 46111      Grade: 10–12      Length: Year  
Credit: Visual/Performing Arts

*Prerequisite: Studio Art or acceptable portfolio (Teacher Recommendation).*

### **AP 2-D Art & Design**

ID: 46112      Grade: 10–12      Length: Year  
Credit: Visual/Performing Arts

*Prerequisite: Completion of Studio Art or submission of acceptable portfolio (Teacher Recommendation).*

### **AP 3-D Art & Design**

ID: 46113      Grade: 10–12      Length: Year  
Credit: Visual/Performing Arts

*Prerequisite: Completion of Studio Art; or acceptable portfolio and teacher recommendation.*

### **AT Performing Arts & Catalyst**

ID: 46325 (Dance) / 46326 (Music) / 46327 (Theater)  
Grade: 12      Length: Year  
Credit: Visual/Performing Arts

*Prerequisite: Completion of three courses in the performance discipline. 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 & Composition

ID: 48526      Grade: 11–12      Length: Year  
Credit: English

*Prerequisite: Semester I grade of A or higher in 10 or 11th-grade English course; or current English teacher recommendation.*

### AT Social Studies: Society, Governance, & Civic Action

ID: 48539      Grade: 11–12      Length: Year  
Credit: Social Studies

*Prerequisite: Semester I grade of B or higher in 10th or 11th-grade Social Studies course; or current/prior Social Studies teacher recommendation.*

### AT Science: Conservation & Resource Studies

ID: 48537      Grade: 11–12      Length: Year  
Credit: Science

*Prerequisite: Completion of a chemistry course with a grade of B or higher; or completion of a physics course with a grade of B or higher; or current science teacher recommendation.*

### AT Math: Data Analysis & Visualization

ID: 48535      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 Quest advisor's recommendation.*

## SINGAPORE AMERICAN SCHOOL OTHER COURSES

### LEARNING SUPPORT PROGRAM

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 via a Student Services Meeting (SSM) as needing support in their academic course work. The goal of the program is to help students meet standards.

#### 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 identified 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 identified 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 grade 9 to improve their reading, writing, speaking, listening, and vocabulary skills in English. Students learn strategies to read and write effectively. Interventions and compensatory strategies target reading comprehension and fluency, along with writing skills focused on claim, organization, development and cohesion.

#### English Language Arts Lab II

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 grades 10, 11 and 12 to improve their reading, writing, speaking, listening, and vocabulary skills in English. Students learn strategies to read and write effectively. Interventions and compensatory strategies target reading comprehension and fluency, along with writing skills focused on claim, organization, development and cohesion.

#### 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 knowledge and skills, mindset, and confidence. Students will receive instruction to improve computational fluency, numeracy and algebraic skills, while also developing 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 knowledge and skills, mindset and confidence. Students will receive instruction to improve skills in algebra and geometry, while also developing 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 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 need additional structure to focus on 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.

A counselor may add a student to Supervised Study based on space availability. 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.

Along with the rest of the world, we continue to monitor the travel situation. To the extent possible, we are committed to providing opportunities for students in Singapore and outside of Singapore. We are not sure if travel will be possible in SY 2021-22 and we will provide an update in September 2021.

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 for credit and for enrichment.

A 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

Because of current uncertainty related to international travel, Singapore American School will not be offering high school students the opportunity to participate in School Year Abroad during the 2021-22 school year.

Singapore American School, 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](http://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. If interested, please see your college counsellor.



## 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 a good 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 engaged in meaningful 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 and plan for 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.

Each year, between 10 and 25 percent of SAS seniors choose to apply to colleges in locations such as Australia, Canada, 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 universities, 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 universities 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 other 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 “US College Recommended” column in Appendix V rather than the “Credits Required To Graduate” column when deciding how many years of study to pursue in a given subject area. Students should speak to teachers and their PAC counselor (if they are in grade 9) or college counselor (if they are in grade 10 or 11) 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 (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.

While both AP and AT courses receive additional GPA weighting at SAS, no US colleges require that students take advanced courses. US colleges simply want each student to take a course load that is appropriately rigorous. Most universities in the UK require that students sit for and score well on 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. Universities in Singapore, South Korea, and a few universities in Australia may 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, they also want students who have contributed to their school or community. US 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 other interests and activities.

## COLLEGE APPLICATION POLICIES

Each student will be provided with a comprehensive list of SAS’s college application policies, but we would like to highlight three of our policies here:

### 1. 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.

### 2. DISCLOSURE OF PREDICTED AP EXAM SCORES

Neither the SAS college counselors nor AP teachers will share predicted AP exam scores with students.

### 3. 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, please use the four-year planning chart in the Appendix 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 in a challenging academic program in which they can be successful while also having time to fully immerse themselves in their SAS high school experience.

## HOW TO REQUEST COURSES

Teachers and counselors are happy to answer any questions about this request process or any of the SAS courses.

Students can log in 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 the spring. Follow the on-screen instructions to select courses for next year. Note that all courses are available throughout the registration period: seats are not allocated until after the process ends.

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 be missing prerequisites; in this case, please see your PAC counselor (grade 9) or college counselor (grades 10 & 11) so that prerequisite courses can be manually added.

Once the correct number of credits has been entered, click submit. The course requests will be displayed. Until the request period ends, students can go back and review or change course requests.

**Please choose courses thoughtfully as schedule change requests in the fall are not guaranteed.**

Note: 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.

## 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 all 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.

See your college counselor to ensure all requirements have been met.

# APPENDIX II: COURSE LIST

## English

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

## Social Studies

World Studies ..... 2xYR  
 World History ..... YR  
 American Studies ..... 2xYR  
 Economics ..... SM  
 Behavioral Econ/Game ..... SM  
 History of Malaysia/Sing ..... SM  
 Law & Justice ..... SM  
 Modern Philosophy ..... SM  
 Psychology ..... SM  
 US History & Govt ..... YR  
 AP Comp Gov/Politics ..... S2  
 AP Economics ..... YR  
 AP Econ (Self-Paced) ..... YR  
 AT Econ: Globalization ..... SM  
 AT Geo & Field Research ..... YR  
 AT Hist Inquiry/Research ..... YR  
 AT Psychology ..... YR  
 AP US History ..... YR  
 AP US Gov/Politics ..... S1  
 AT Urban Studies ..... SM

## Mathematics

Algebra I ..... YR  
 Geometry ..... YR  
 Algebra II/Trig ..... YR  
 Conceptual Algebra II ..... YR  
 Data Analytics ..... YR  
 PreCal with Statistics ..... YR  
 Discrete Math ..... YR  
 Accelerated Math I ..... YR  
 Accelerated Math II ..... YR  
 PreCal with Parametrics ..... YR  
 AP Calculus AB ..... YR  
 AP Calculus BC ..... YR  
 AP Calculus BC (Post-AB) .. S1  
 AT Finite Math Modeling... S2  
 AT Linear Algebra ..... SM  
 AT Multivariable Calculus . SM  
 AT Post-Euclidean Geo ..... S1  
 AP Statistics ..... YR

## Science

### Life Sciences:

Accelerated Biology ..... YR  
 Anatomy & Physiology ..... SM  
 Biology ..... YR  
 Biotechnology ..... SM  
 Environmental Science ..... SM  
 Forensic Science ..... SM  
 Marine Biology ..... SM  
 Zoology ..... SM  
 AP Biology ..... YR  
 AT Env Sci/Field Research . YR

### Physical Sciences:

Accelerated Chemistry ..... YR  
 Chemistry ..... YR  
 Engineering Space Tech ..... YR  
 Physical Science ..... YR  
 Physics ..... YR  
 AP Chemistry ..... YR  
 AP Chemistry (Self-Paced) . YR  
 AT Computational Physics . 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 I ..... YR  
 Spanish Advanced II ..... YR  
 AP Spanish Lang/Culture... YR  
 AT Spanish Lang: Latin American Hist/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

**Computer Science & Design:**  
 Comp Sci I ..... SM  
 Comp Sci:Mobile App Dev ..... SM  
 Designing Virtual Worlds.. SM  
 Emerging Tech..... SM/YR  
 Graphic Design..... SM  
 AP Computer Science ..... YR  
 AT CS: Data Structures ..... YR

### Engineering/Robotics:

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

### Business:

Business ..... SM  
 Personal Fin: ..... SM

### Journalism:

Newspaper & Broadcast Media ..... YR  
 Yearbook ..... YR

### Capstone/Catalyst:

The SAS Catalyst Project .. SM  
 Independent Study ..... SM  
 Global Online Academy ... SM  
 AT Entrepreneurship ..... SM  
 AT Seminar ..... YR

AT Research & Catalyst ..... YR

## Visual/Performing Arts

### Visual Arts:

Art I: Foundations ..... SM  
 Ceramics I ..... SM  
 Ceramics II ..... SM  
 Ceramics III ..... YR  
 Mixed Media/Digital ..... SM  
 Studio Art ..... YR  
 AP Drawing ..... YR  
 AP 2-D Art & Design ..... YR  
 AP 3-D Art & Design ..... YR

### Film/Photography:

Adv Filmmaking ..... SM  
 Filmmaking ..... SM  
 Adv Digital Photography .. SM  
 Digital Photography ..... SM

### Performing Arts:

**Instrumental Music**  
 Concert Band ..... YR  
 Jazz Improvisation ..... SM  
 Symphonic Band ..... YR  
 Wind Ensemble ..... YR

### Strings:

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

### Theater:

Adv Production ..... S2  
 Adv Improvisation ..... SM  
 Improvisation ..... SM  
 Musical Theater:Hist/Prod SM  
 Sketch Comedy ..... SM  
 Stagecraft ..... SM

### Vocal Music:

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

### Additional Music:

Advanced Guitar ..... SM  
 Introduction to Guitar ..... SM

### Dance:

Dance I ..... SM  
 Dance II ..... SM  
 Dance III ..... SM  
 Dance Performance ..... YR  
 AT Perf. Arts & Catalyst .... YR

## Physical Education

Aquatics: Aqua Fit ..... SM  
 Athletics ..... SM  
 Climbing/Adventure Trg... SM  
 Fld Hockey/Softball/Golf.. SM  
 Fit for the Body/Mind ..... SM  
 Group Fitness ..... SM  
 Group Fitness II ..... SM  
 Indoor Team Sports ..... SM  
 International Sports ..... SM  
 Lifeguarding ..... SM  
 Personal Defense ..... SM  
 Racquet Sports ..... SM  
 Soccer/FlagFtbl/Rugby.... SM  
 Weight Training I ..... SM  
 Weight Training II ..... SM  
 AT Kinesiology ..... SM

## Health & Wellness

Body Sys & Dis ..... SM  
 Life Skills/Human Dev ..... SM  
 Safety/First Aid ..... SM

## Quest

Eng:Research/Comp ..... YR  
 Ethics and Leadership ..... YR  
 Math: Data Analysis/Vis ..... YR  
 Sci: Conserv.& Resource ... YR  
 SS:Soc,Gov/Civic Action ... YR  
 AT Eng: Research/Comp ... YR  
 AT Math: Data Analysis/Vis YR  
 AT Sci: Conserv.&Resource YR  
 AT SS: Soc, Gov/Civ Action YR

## Advanced Studies

AP Biology ..... YR  
 AP Calculus AB ..... YR  
 AP Calculus BC ..... YR  
 AP Calculus BC (Post-AB) .. S1  
 AP Chemistry ..... YR  
 AP Chemistry (Self-Paced) . YR  
 AP Chinese Lang/Culture .. YR  
 AP Comp Gov/Politics ..... S2  
 AP Computer Science ..... YR  
 AP Drawing ..... YR  
 AP 2-D Art and Design ..... YR  
 AP 3-D Art and Design ..... YR  
 AP Economics ..... YR  
 AP Econ (Self-Paced) ..... YR  
 AP English Lang/Comp ..... YR  
 AP French Lang/Culture .... YR  
 AP Physics 2 ..... YR  
 AP Physics C ..... YR  
 AP Spanish Lang/Culture... YR  
 AP Statistics ..... YR  
 AP US History ..... YR  
 AP US Gov/Politics ..... S1

AT Chinese Lang: History .. YR  
 AT Computational Physics . YR  
 AT CS: Data Structures ..... YR  
 AT English Literature ..... YR  
 AT English Writing Workshop /Publication ..... YR  
 AT Econ: Globalization ..... SM  
 AT Entrepreneurship ..... SM  
 AT Env Sci/Field Research . YR  
 AT Finite Math Modeling.. SM  
 AT Geo & Field Research .. YR  
 AT Hist Inquiry/Research ... YR  
 AT Kinesiology ..... SM  
 AT Linear Algebra ..... SM  
 AT Math: Data Analysis/Vis YR  
 AT Multivariable Calculus . SM  
 AT Perf. Arts & Catalyst .... YR  
 AT Post-Euclidean Geo ..... S1  
 AT Psychology ..... YR  
 AT Research & Catalyst ..... YR  
 AT Sci: Conserv.&Resource YR  
 AT Seminar ..... YR  
 AT Soc Gov/Civic Action ... YR  
 AT Spanish Lang: Latin American Hist/Culture ..... YR  
 AT Urban Studies ..... SM

## Learning Support

Learning Support I ..... YR  
 Learning Support II ..... YR  
 English Lang Arts Lab I ..... YR  
 English Lang Arts Lab II .... YR  
 Algebra I Math Lab ..... YR  
 Geometry Math Lab ..... YR  
 (Recommendation is required for these courses.)

## APPENDIX III: ADVANCED STUDIES COURSE OFFERINGS

DEPARTMENTS	2021-22	2022-23
<b>ENGLISH</b>		
AP English Language	✓	✓
AT English Literature*	✓	✓
AT English: Writing Workshop & Publication	✓	✓
<b>MATHEMATICS</b>		
AP Calculus AB	✓	✓
AP Calculus BC	✓	✓
AP Calculus BC (Post-AB) (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)	✓	✓
<b>PHYSICAL EDUCATION</b>		
AT Kinesiology+ (semester long)	✓	✓
<b>SCIENCE</b>		
AP Biology	✓	✓
AP Chemistry	✓	✓
AT Environmental Science & Field Research*	✓	✓
AT Computational Physics*+	✓	✓
AP Physics 2	✓	✓
AP Physics C: Mechanics (in full-year AP Physics C)	✓	✓
AP Physics C: Electricity & Magnetism (in full-year AP Physics C)	✓	✓
<b>SOCIAL STUDIES</b>		
AP Gov & Politics: Comparative (semester long)	✓	✓
AP Gov & Politics: US (semester long)	✓	✓
AT Geography & Field Research	✓	✓
AP Macroeconomics (in full-year AP Economics)	✓	✓
AP Microeconomics (in full-year AP Economics)	✓	✓
AT Economics: Globalization (semester long)	✓	✓
AT Psychology+	✓	✓
AT Urban Studies (semester long)	✓	✓
AP US History	✓	✓
AT Historical Inquiry & Research	✓	✓

DEPARTMENTS	2021-22	2022-23
<b>TECHNOOLOGY, ELECTIVES, CAPSTONE</b>		
AP Computer Science	✓	✓
AT Computer Science: Data Structures	✓	✓
AT Entrepreneurship (semester long)	✓	✓
AT Seminar*	✓	✓
AT Research & Catalyst*	✓	✓
<b>VISUAL &amp; PERFORMING ARTS</b>		
AP Drawing	✓	✓
AP 2-D Art and Design	✓	✓
AP 3-D Art and Design	✓	✓
AT Performing Arts: Music, Dance or Theater	✓	✓
AT Visual Arts	exploring	possible
<b>WORLD LANGUAGES</b>		
AP Chinese Language & Culture	✓	✓
AT Chinese: History	✓	✓
AP French Language	✓	✓
AP Spanish Language	✓	✓
AT Spanish: Latin American History & Culture Through Arts & Media	✓	✓
<b>QUEST</b>		
AT Math: Data Analysis & Visualization*	available through our Quest program	
AT Science: Conservation & Resource Studies		
AT Social Studies: Society, Governance & Civic Action		
AT Research* & Composition		

\* denotes an AT course with an associated AP exam opportunity.

+ denotes an AT course with an associated concurrent enrollment opportunity.

NB: All offerings are year long unless otherwise stated.

## APPENDIX IV: AP EXAM & SYRACUSE UNIVERSITY CREDIT OPTIONS

Objective:

The following information will help students and families to better understand their access to AP Exam and/or Syracuse University credit based on course enrollment.

The Singapore American School Advanced Studies program is pleased to offer students the opportunity to take a wide variety of AP exams and to earn Syracuse University and University of South Carolina credit through concurrent enrollment. In order to access these opportunities, students must be enrolled in the associated Advanced Placement (AP) or Advanced Topic (AT) courses. (Please note that independent study may not be used to obtain access.) The following table lists the AP exams and university credits available at SAS alongside the courses that provide access to these opportunities.

Please note that students must be enrolled in the associated AP or AT course at SAS in order to access the listed AP exam or university credit. Independent study may not be used to obtain said access.

SUBJECTS	AP EXAM OR UNIVERSITY CREDIT	ASSOCIATED ADVANCED STUDIES COURSE
ENGLISH	AP English Language Exam	AP English Language
	AP English Literature Exam (requires self-study)	AT English: Literature
MATHEMATICS	AP Calculus AB Exam	AP Calculus AB
	AP Calculus BC Exam	AP Calculus BC (Year-Long or Post-AB)
	AP Statistics Exam (also offered in Quest)	AP Statistics
SCIENCE	AP Biology Exam	AP Biology
	AP Chemistry Exam	AP Chemistry
	AP Environmental Science Exam	AT Environmental Science & Field Research
	AP Physics 1 Exam (requires self-study)	AT Computational Physics
	Syracuse University Credit (PHY 101)	AT Computational Physics
	AP Physics 2 Exam	AP Physics 2
	AP Physics C: Mechanics Exam	AP Physics C
	AP Physics C: Electricity & Magnetism Exam	AP Physics C
PHYSICAL EDUCATION	University of South Carolina Credit (PEDU 190)	AT Kinesiology
SOCIAL STUDIES	AP Gov & Politics: US Exam	AP Gov & Politics: US
	AP Gov & Politics: Comparative Exam	AP Gov & Politics: Comparative
	AP Macroeconomics Exam	AP Economics
	AP Microeconomics Exam	AP Economics
	Syracuse University Credit (ECN 203)	AT Economics: Globalization
	Syracuse University Credit (PSY 205)	AT Psychology
	AP US History Exam	AP US History

<b>SUBJECTS</b>	<b>AP EXAM OR SYRACUSE UNIVERSITY CREDIT</b>	<b>ASSOCIATED ADVANCED STUDIES COURSE</b>
<b>TECHNOLOGY, ELECTIVES &amp; CAPSTONE (TEC)</b>	AP Computer Science Exam	AP Computer Science
	AP Seminar Exam	AT Seminar
	AP Research Exam (also offered in Quest)	AT Research & Catalyst
<b>VISUAL &amp; PERFORMING ARTS</b>	AP Drawing Exam	AP Drawing
	AP 2-D Art and Design Exam	AP 2-D Art and Design
	AP 3-D Art and Design Exam	AP 3-D Art and Design
<b>WORLD LANGUAGES</b>	AP Chinese Language & Culture Exam	AP Chinese Language & Culture
	AP French Language Exam	AP French Language
	AP Spanish Language Exam	AP Spanish Language
<b>QUEST</b>	AP Research Exam (also offered in TEC)	AT Research
	AP Statistics (also offered in Mathematics) Note: Requires self-study.	AT Data Analysis & Visualisation

#### Advanced Placement (AP) Exam Guidelines:

Singapore American School administers AP exams only to SAS students who are currently enrolled in the respective AP course or in an associated AT course that explicitly provides access to an AP exam. If SAS does not currently offer a particular AP course, students cannot take the course as independent study and SAS will not administer the respective AP exam(s). This includes exams for courses SAS previously offered, e.g., AP European History, AP Art History, AP Music Theory, AP Psychology, and AP Human Geography. Please refer to specific Advanced Studies course descriptions to see if a course explicitly provides access to an AP exam.

Student who transfers to SAS at the start of the second semester can request to take an AP exam for not enrolled in at SAS, if they have been enrolled in the course at another high school before transferring to SAS mid-year. The request must be endorsed by a student's college counselor, an SAS teacher who is a subject expert in the respective exam, and the Advanced Studies Coordinator.



# APPENDIX V : FOUR-YEAR PLANNING CHART

DEPARTMENT	GRADE 9	GRADE 10	GRADE 11	GRADE 12	CREDITS REQUIRED TO GRADUATE	US COLLEGE RECOM'D	TOTAL EARNED
ENGLISH					4	4	
MATHEMATICS					2	4	
SCIENCE					2	3 - 4	
SOCIAL STUDIES					2	3 - 4	
US citizens and University of California applicants are required to complete a US History course.							
WORLD LANGUAGE					2	3 - 4	
VISUAL & PERFORMING ARTS					1	1	
University of California requires two semesters in the same type of Visual/Performance Art							
PHYSICAL EDUCATION					1.5		
HEALTH		REQUIRED IN 10TH			0.5		
TEC / CATALYST PROJECT					SEE GENERAL INFORMATION SECTION FOR OPTIONS		

Please Note:

- Minimum Total Credits for Graduation = 24
- Courses listed in the Program Planning Guide may be subject to change
- AP credits are capped at 7

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 AT Eng: Writing Workshop/Publication 14  
 AT Entrepreneurship 42  
 AT Env Science/Field Research 33  
 AT Finite Math Model 26  
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 AT Kinesiology 59  
 AT Linear Algebra 27  
 AT Math: Data Analysis/Visual 66  
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 AT Perf. Arts & Catalyst 55  
 AT Post-Euclidean Geo 26  
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AT Sci: Conserv/Resource 66  
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**NOTES:**

[illegible]



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