

MIDDLE SCHOOL & HIGH SCHOOL COURSE SEQUENCES - 6 CLASSES EACH TERM

SUBJECT	7TH	8TH	9TH	10TH	11TH	12TH
ELECTIVE	ENGINEERING 7	ENGINEERING 8	ENGINEERING 9^	ENGINEERING 10^	ENGINEERING 11^	ENGINEERING 12^
LANGUAGE ARTS	ELA 7 ADV ELA 7*	ELA 8*	ELA 9^	ELA 10^	ELA 11^ AP ENGLISH LANGUAGE**^	ELA 12 (ERWC)^
SOCIAL SCIENCE	WORLD HISTORY 7 ADV WORLD HIST 7*	US HISTORY 8 ADV US HISTORY 8*	GEOGRAPHY^ ETHNIC STUDIES^	WORLD HISTORY^ AP WORLD HISTORY**^	US HISTORY^ AP US HISTORY**^	GOVERNMENT^ ECONOMICS^
SCIENCE	SCIENCE 7	SCIENCE 8	PHYSICS (CLEAN ENERGYNEERING)^	BIOLOGY^	CHEMISTRY^	AP ENVIRONMENTAL SCIENCE**^
MATHEMATICS	MATH 7 MATH 7/8*	MATH 8 MATH 8/1*	SCUSD MATH COURSE SEQUENCE INTEGRATED MATH 1, 2 & 3^ QRAT (SENIOR MATH)^ AP PRECALCULUS**^ AP CALCULUS AB**^			
PE	MIDDLE SCHOOL PE	MIDDLE SCHOOL PE	HIGH SCHOOL PE	HIGH SCHOOL PE		
FOREIGN LANGUAGE					SPANISH 1^ SPANISH FOR NATIVE SPEAKERS^	SPANISH 2^
FINE ARTS						DRAMA (THEATER)^

*Denotes a course designated Advanced or AP
^Denotes a course which fulfills UC/CSU A-G requirements

Please note that engineering is the only elective at SES.
Engineering is required for all students, every school year.

ENGINEERING COURSE DETAILS

Grade Level	7th	8th	9th
Course Title	Engineering 7	Engineering 8	Principles of Engineering
Description	Students learn about the different Engineering and Architectural disciplines, including the Engineering Design Process (EDP). Exploration of these fields is done through various hands-on projects, computer programs, and articles/media. Strong math skills, an interest in science, and the ability to work independently are highly suggested. Group collaboration is practiced throughout the year.	Students refine the differences between the Engineering and Architectural fields through various hands-on projects, computer programs, and articles/media. Data collection and analysis is introduced and refined. Basic coding is introduced to prepare for high school engineering. Students will work in groups and independently to solve problems presented in the curriculum.	Students learn precision, attention to detail, and industry standards in creating drawings. AutoCAD drawings are used to create gears and models with the laser cutter/engraver. Students learn Architectural drawings including basic 3D modeling and 3D printing. This course introduces students to computer design and drafting, an essential skill in preparation for advanced 3D modeling in 10th grade.
Grade Level	10th	11th	12th
Course Title	Drafting & Design: Computer Aided Design	Robotics, Engineering, & Energy	Advanced Robotics, Engineering, & Energy
Description	Students learn prototyping by modeling 3D parts using Creo. Students learn advanced 3D modeling including virtually assembling different parts in Creo, as well as 3D printing each part of a project for a physical assembly. Problem solving, design, prototyping and revisions are key components of the skills students will learn and practice in this course.	Introduces students to robot mechanisms, dynamics, and intelligent controls. Topics include planar and spatial kinematics, and motion planning; mechanism design for manipulators and mobile robots; multi-rigid-body dynamics; 3D graphic simulation; control design, actuators, and sensors; wireless networking, task modeling, and embedded software.	This rigorous Career Technical Education (CTE) Engineering course has an overarching focus on robotics, transportation, and green energy. Utilizing a combination of traditional and project-based instructional methods, students engage in the extensive iterative engineering design process that prepares them for careers in technology, transportation, engineering, or renewable energy.



The Sacramento City Unified School District prohibits discrimination, harassment, intimidation, and bullying based on actual or perceived ancestry, age, color, disability, gender, gender identity, gender expression, nationality, race or ethnicity, religion, sex, sexual orientation, parental, family or marital status, or association with a person or a group with one or more of these actual or perceived characteristics.

