School: Cabrillo High School
Pathway Name: Cabrillo Engineering and Design
Industry Sector: Engineering and Design

Pathway Vision: Cabrillo Engineering & Design (CED) is a four-year, rigorous, high-tech, specialized program designed for students who have an interest in the field of engineering and design.

Pathway Mission: Our program is nationally recognized as a Certified Project Lead The Way Program, which allows for engineering students to earn college credit while in high school. The CED course of study prepares students to meet A-G requirements and to succeed in the industry and related fields. CED utilizes dynamic and interactive project-based instruction and hands-on learning that maintains real-world applications.

2027-2028 Course of Study
Graduating Class of 2031

		HS Grad Req.	9th grade	10th grade	11th grade	12th grade	UC/ CSU A-G Req.
Technical Core	**Required Technical Core** *3-course thematic sequence: CTE, PLTW, or Technical*	3	**Intro to Design 1-2 (PLTW) (1303)**	**Honors Principles of Engineering (PLTW) (2503)**		**Honors PLTW Capstone**	'g' 1
Academic Core	History/Social Science	3		Modern World History (2271) **or** AP World History (2318)	Ethnic Studies: Our American Histories (2263) **or** AP US History (2236)	Government (2241) **&** Personal Finance **or** AP Government (2234) **&** Personal Finance	'a' 2

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	English	4	English 1-2 ACC (1403)	English 3-4 (1408) **or** AP Seminar English 10 (1457)	ERWC 11 (1473) **or** AP English Language (1458)	ERWC 12 (1474) **or** AP Literature (1449)	'b' 4
	Math	3	Algebra 1 (2986) **or** Geometry ACC (2971)	Geometry (2970) **or** Algebra 2 ACC (2964)	Algebra 2 ACC(2964) **or** AP Pre-Calculus (2999)	Recommended: AP Pre-Calculus (2999) **or** AP Calculus AB/BC (3158/9)	'c' 3
	Lab Science	2	Biology: Living Earth (3865)	Physics of the Universe (3853) **or** AP Physics (3854)	Recommended: Computer Integrated Manufacturing (PLTW) (2511)		'd' 2
	Language Other Than English (LOTE)	1 or VAPA	American Sign Language 1-2 (1937) **or** Spanish 1-2 (1831) **or** Spanish for Spanish Speakers 1-2 (1838)	ASL 3-4 (1938) **or** Spanish 3-4 (1832) **or** Spanish for Spanish Speakers 3-4 (1839)	Recommended: Spanish 5-6 (1833) **or** AP Spanish (1860)	Recommended: AP Spanish (1860)	'e' 2
	Visual and Performing Arts (VAPA)	1 or LOTE	Steel Drums 1-2 (3311) **or** Guitar 1-2 (3477) **or** Instruments - Mariachi Emphasis (3466) **or** Art Foundations 1-2 (1082)				'f' 1

			or Intro to Theater Arts (3353) **or** Dance 3-4, 5-6, 7-8, 9-10 (3484-3487) **or** Graphic Design and Printmaking 1-2 (2639A)				
	Optional Pathway-Aligned Elective Course				Digital Tech and Robotics (2652) **or** Dual Enrollment: Metal Fabrication	Digital Tech and Robotics (2652) or Honors Aerospace Engineering (2515) or Dual Enrollment: Metal Fabrication	'g' 1
	Physical Education	2	PE 9 (3704) **or** PE 9: Dance (3693) **or** NJROTC 9 (3209)	PE 10 (3707) **or** PE 10: Dance (3694) **or** NJROTC 10 (3211) **or** Athletics **or** Spirit Teams			
Global Elective Courses	Additional courses that provide pathway enrichment	3	Global Electives can be found HERE	Global Electives can be found HERE	Global Electives can be found HERE	Global Electives can be found HERE	

Work-Based Learning	Required work-based learning opportunities		• GEMS: Girls in Engineering, Math, and Science • Women in STEM events • Engineering week • Resume for Engineers	• Engineering week • Guest speakers	• Engineering week • Job shadows at local engineering companies • Mock interviews	• Engineering week • Summer internships: JPL, Boeing, Sims Engineering and P2S	
Integrated Curriculum	Multidisciplinary Integrated Curriculum		**Oil Spill (Fall):** *How do engineers work together to research and develop solutions to solve real-world problems using the design process?* **Automation (Spring):** *How do engineers work together to research and develop solutions utilizing the design process?*	**Compound Machine Design (Fall):** **HEART Project (Spring):** Edwards life sciences	**Elements of Automation:** *Students will research a topic in automation and explore automation careers. Students will identify the advantages and disadvantages of robotic labor versus human labor.*	**Water Sustainability (Fall/Winter):** *Students will use the engineering design process to develop CAD drawings of a sustainability prototype.* **Glider Flights (Spring):** Students will learn the basics of aerodynamics and parts of a plane Students will use the mathematical data collected from a glider flight and plot it on a graph using Matlab Students will understand the calculus and algebra behind the graph of a glider flight to determine velocity, acceleration and total distance traveled.	