School: **Mount Miguel High School**

Academy/Pathway: **Engineering / Engineering Design (Computer Integrated Manufacturing)**

Grossmont Union High School District

Level	Grade	English Language Arts	Math	Social Studies	Science	Career Technical Education	Other Required Courses or Recommended Electives
Secondary	9	English 1, 2	Integrated Math I	Geography	1 Semester Earth Science or Honors Biology	**Intro to Design 1, 2 T708 / T709, UC-f**	P.E. Y1 WorldLanguage 1, 2 Visual and Performing Arts Y1
	10	English 3, 4	Integrated Math II	World History	Biology or Honors Chemistry or Honors Physics	**Intro to Design 1, 2 T708 / T709, UC-f** **A.P. Principles of Engineering 1, 2 T714 / T715, UC-d**	P.E. Y2 WorldLanguage 1, 2 World Language 3, 4 Visual and Performing Arts Y1
	11	English 5, 6	Integrated Math III	U.S. History	Chemistry or Physics *Science Elective*	**A.P. Principles of Engineering 1, 2 T714 / T715, UC-d** **Computer Integrated Manufacturing (PLTW) 1, 2 T720 / T721, UC-g**	P.E. Y2 WorldLanguage 1, 2 World Language 3, 4 Visual and Performing Arts Y1
	12	English 7, 8	*Math Elective*	Am. Gov. / Econ.	*Science Elective*	**Computer Integrated Manufacturing (PLTW) 1, 2 T720 / T721, UC-g**	P.E. Y2 World Language 3, 4 World Language 5, 6 Visual and Performing Arts Y1
Key		**Minimum UC a-g Entrance Requirement**	**Required by GUHSD for Graduation**	**Recommended for College Admissions**	**CTE Concentrator Course**	**CTE Capstone Course**	**CTE Meets UC a-g Entrance Requirements** **Articulated Course**

The course sequence listed below is for illustration only. A student's actual course sequence may vary.

Additional Pathway Information

Occupations Requiring less than a Baccalaureate Degree

- Civil Engineering Technician
- Electrical Engineering Technician
- Industrial Engineering Technician
- Manufacturing Technician
- Machinists
- Maintenance Workers
- Tool Operators
- CAD Drafters
- Fabricators

Occupations Requiring a B.A. or B.S. Degree

- Aerospace Engineer
- Agricultural Engineer
- Architectural Engineer
- Biomedical Engineer
- CAD/CAM Engineer
- Chemical EngineerCivil Engineer
- Computer Engineer
- Electrical Engineer
- Environmental Engineer
- Geological Engineer
- Industrial Engineer
- Structural Engineer
- Systems Engineer
- Robotics Engineer

Recognized Certifications, Licenses, or Credentials Related to This Pathway

- Autodesk Certification
- GD&T Certification
- Onshape Certification
- OSHA 10 Hour Training

Post-Secondary	13	**CHEM 141** *General Chemistry I*	**ENGR 100** *Introduction to Engineering and Design*	**ENGR 120** *Engineering Computer Applications*	**ENGR 200** *Engineering Mechanics – Statics*	**ENGR 210** *Electric Circuits*	**ENGR 220** *Engineering Mechanics–Dynamics*
	14	**ENGR 260** *Engineering Materials*	**MATH 180** *Analytic Geometry and Calculus I*	**MATH 280** *Analytic Geometry and Calculus II*	**MATH 281** *Multivariable Calculus*	**MATH 285** *Differential Equations*	**PHYC 190** *Mechanics and Heat*
		PHYC 200 *Electricity and Magnetism*	**PHYC 210** *Wave Motion and Modern Physics*				

Cuyamaca Community College Program Offerings:

- Associate in Science in Engineering (plus General Ed.) in one of the following:
  - Civil Engineering (58 Units)
  - Electrical and Computer Engineering (53 Units)
  - **Aerospace and Mechanical Engineering (56 Units) (See Left)**
- Associate in Science In CADD Technology (24 Units, plus Gen. Ed.) with emphasis in one of following:
  - Building Design Industry (24 Units)
  - Manufacturing Industry (24 Units)
- Certificate of Achievement in CADD Technology (Core courses only, no Gen. Ed.)
- Certificate of Specialization in CADD/Manufacturing Technology

WBL Plan 24-25:

- Guest speakers: Cal Poly, UCSD, Janelle Duenas NASA
- PBL: Trammel Toy, Automata, AGV, Robotic Arm, Capstone
- Field Trips: EC Manufacturing Fair, UCSD, Cuyamaca College
- Industry Tours: UCSD Labs
- Internships/Apprenticeships: Robotics Camp
- Job Shadow: Machining With Mike Reed, Northrop Grumman, Retired
- Simulated WBL: Community Service Products (e.g. Trophies, Plaques, Signs, Fishing Rod Holder)
- Competitions: FIRST Tech Challenge

LMI Highlights for Pathway 24-25:

- Growth 8% across the industry between 2021 and 2026 (SDIC Consortium)
- Average Earnings: $31.30 Median Wage
- # of job openings: 703 job openings