ENGINEERING DESIGN TECHNOLOGY (CERT)

Graduates of the ENGT program from Cerritos College find their work in such diverse areas as designing components, tooling and production systems for aircrafts, spaceships, medical devices / artificial organs, process/oil refineries equipment, robots, manufacturing systems, automotive, construction, machineries and general merchandise products. Our students can choose classes between 5 industry leading CAD systems, and become an expert mechanical designer in Fusion 360™, OnShape™, AutoCAD™ , SOLIDWORKS™ or AutoDesk Inventor™.

Program Student Learning Outcomes

- Student use basic principles of statics and strength of materials, aided by computer simulations, to dimension parts.
- Student create and interpret 2D blueprints.
- Student create parametric parts and assembly drawings.
- Student learn how to do design for manufacturing, 3D printing, and concurrent engineering.
- Student learn how to make 2D assembly drawings.
- Student perform basic machine design.
- Student use AutoCAD to make 2D drawings and basic 3D models.
- Student use and interpret GD&T.

Program Requirements

Code Number	Course Title	Units
Core Courses		
ENGT 116	Blueprint Reading and Production (4)	4.0
ENGT 117	Geometrical Dimensioning and Tolerancing and Model Based Definition (4)	4.0
ENGT 131	Design Fundamentals Including 3D Modeling	3.0
ET 101	Principles of Engineering Technology	3.0
MTT 130	Quality Practices and Measurement	2.0
Select at least 4 units from the following:		**4.0-7.0**
ARCH 213	Introduction to 3-D Computer Aided Drafting (4)	
ENGT 103	Introduction to Engineering Design Using Inventor (3)	
ENGT 137	Industrial Design and 3D Modelling in Fusion360 (4)	
ENGT 138	Introduction to Engineering Design Using Autocad (4)	
ENGT 139	Cloud based 3D modeling with Onshape (4)	
ENGT 257	Advanced Modeling Using Inventor (4)	
ENGT 259	Solidworks Introduction (4)	
ENGT 260	Advanced Modeling Using SolidWorks (4)	
Total Units		**20-23**

Recommended Electives

In order to broader their understanding of design for manufacturing and to further enhance understanding of selected topics in design technologies, students are encouraged to take one or more of the recommended elective classes:

Code Number	Course Title	Units
ENGT 102	Arduino for Internet of Things (IoT) and Embedded Systems Design	
ENGT 104	Principles of Aerospace Design Technology	
ENGT 105	Product Design, Development, and Prototype Fabrication	
ENGT 106	Introduction to Drone Technology	
ENGT 111	Plastics Technology	
ENGT 133	Solidworks for Sheet Metal Design	
ENGT 137	Industrial Design and 3D Modelling in Fusion360	
ENGT 138	Introduction to Engineering Design Using Autocad	
ENGT 139	Cloud based 3D modeling with Onshape	
ENGT 153	Machine Design Applications Using Solid Modeling	
ENGT 237	Statics and Strength of Materials Using Simulation	
ENGT 250	Fiberglass and Vacuum Infusion Process Technology	
ENGT 251	Composites Fabrication and Tooling	
ENGT 258	Tools and Fixtures Applications Using Solid Modeling	
ENGT 261	SolidWorks for Sustainable Design	
ENGT 262	SolidWorks for Weldments Design	
ENGT 263	SolidWorks for Industrial Mold Tools Design	
ENGT 267	MoldFlow Simulations and Plastic Products Design	
ET 102	Electronics for Engineering Technologists	
ET 103	Industrial Process Control	
ET 105	Industrial Motor Control	
NPD 100	Product Development in a Global Economy	
NPD 101	Innovation Using Rapid Prototyping	
NPD 102	Quality Systems for New Product Development	
NPD 103	Tooling and Materials for New Product Development	
NPD 105	Mechatronics Integration In New Product Development	
MTT 100	Machine Tool Introduction	
MTT 180	Robotics for Computer Numerically Controlled Machines	
MTT 151	Mastercam Introduction	
WELD 100	Welding Fundamentals	
WMT 101	Introduction to Woodworking	