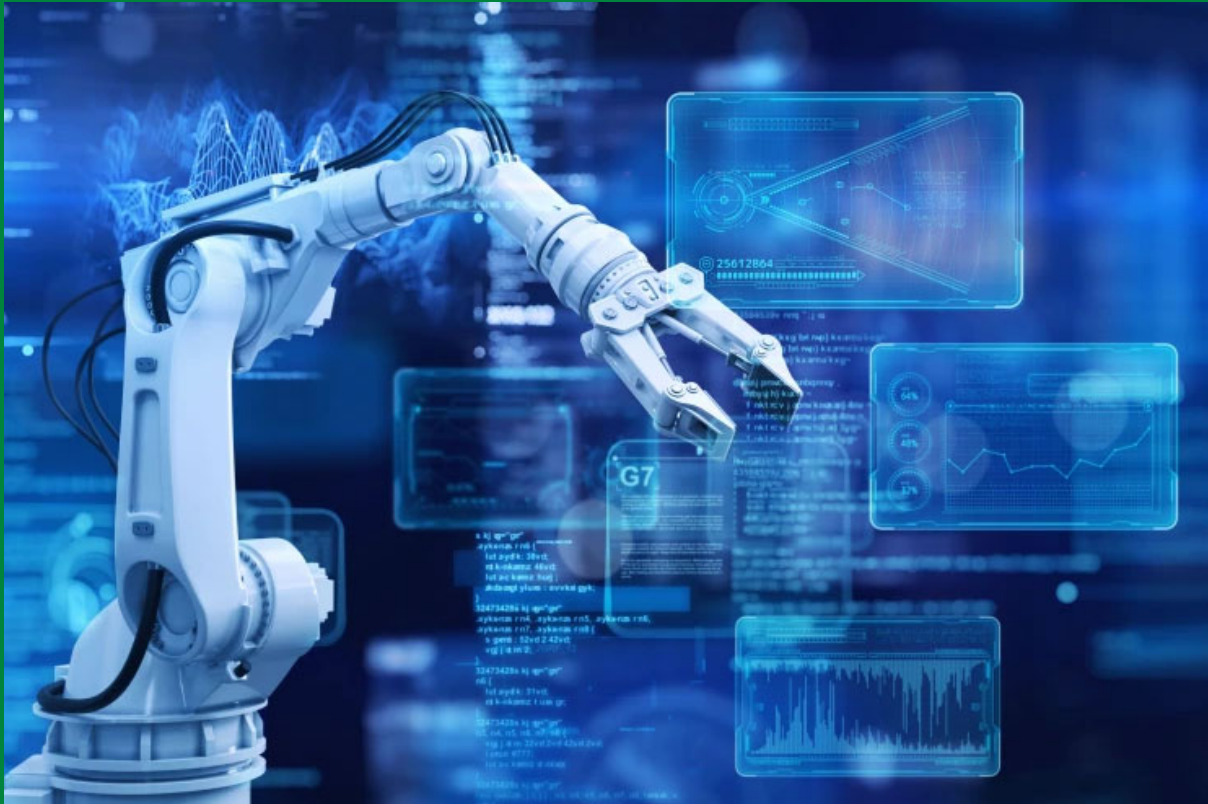


Industrial and Manufacturing Engineering Department



CalPolyPomona



IME Department Mission Statement

The Mission of the IME Department is to graduate outstanding industrial and manufacturing engineering professionals who are prepared to succeed in today's workplace or the best graduate schools. Our students are trained to help organizations design and improve systems that produce products and services, organize people to work effectively, and ensure that customers are best served—the human side of engineering. We strive to serve a diverse student population using the “learn-by-doing” approach to cultivate the ethics, skills, and abilities they need to serve, innovate, and lead in society and industry.

- ABET Accredited
- One of the three Manufacturing Engineering programs in California
- One of the three Industrial Engineering programs in Southern California
- According to the U.S. News & World Report 2023, Among public universities where a doctorate is not offered, College of Engineering at Cal Poly Pomona is the 10th Best Undergraduate Engineering Program in the nation and 3rd Best in California

B.S. in Industrial Engineering Program

The Industrial Engineering bachelor of science degree program at Cal Poly Pomona contains a unique, well-balanced curriculum designed to prepare the student for a fast and productive entry into today's complex manufacturing environments or the best graduate schools. The Industrial Engineering Program is accredited by the Engineering Accreditation Commission of ABET.

Industrial Engineers make things work better, safer, and more economically. Unlike the other engineering disciplines that focus their attention purely on the technical aspects of a system, the Industrial Engineer incorporates human and economic considerations in system design. The Industrial Engineer uses their background in math, science, and the humanities to extend their studies in subjects such as work analysis and design, process design, human factors, facilities design, production planning and control, automation, and quality control.

Our graduates are doing Industrial Engineering work in the manufacturing, financial, entertainment, health, consulting, and service industries, to name just a few. Many have also used their Industrial Engineering skills to start their own companies.

Core Courses

- Computer Integrated Manufacturing and Automation
- Discrete System Simulation
- Engineering Economy
- Engineering Graphics
- Engineering Probability and Statistics
- Facilities Planning, Layout and Design
- Human Factors Engineering
- Industrial and Manufacturing Engineering Fundamentals
- Industrial Costs and Controls
- Manufacturing Systems and Processes
- Materials Science and Engineering
- Operations Planning and Control
- Operations Research I and II
- Production Planning and Control
- Statistical Quality Control
- Systems Engineering
- Data Analysis: Application in Industrial and Systems Engineering*
- Design of Experiments*
- Principles of Lean Implementation*
- Reliability Concepts and techniques*

* *elective*

Labs

- Human factors
- IME computations
- IME fundamentals
- Systems engineering
- Simulation
- Operations planning and control
- Quality Control
- Engineering graphics
- Manufacturing processes
- CIM and Automation

Student Clubs

- Institute of Industrial and Systems Engineers (IISE)
- Industrial Engineering Honor Society (α π μ)



B.S. in Manufacturing Engineering Program

The Manufacturing Engineering bachelor of science degree program at Cal Poly Pomona contains a unique, well-balanced curriculum designed to prepare the student for a fast and productive entry into today's complex manufacturing environments or the best graduate schools. The program one of only a few of its kind in California. The Manufacturing Engineering Program is accredited by the Engineering Accreditation Commission of ABET.

Manufacturing engineers plan, develop and optimize the processes and systems of production. They improve manufacturing productivity by developing better methods of assembling, testing and fabricating systems and products. Manufacturing engineering students are given a solid foundation in production processes and techniques, properties of materials, computers and automation, teamwork, and professional communication. These building blocks are then combined and studied as manufacturing systems and related to the most recent manufacturing technologies.

In addition to numerous manufacturing-related courses, our Manufacturing Engineering graduates also take many Industrial Engineering-related core and elective courses, which prepares them to understand, analyze, optimize, and manage manufacturing

Core Courses

- Computer Integrated Manufacturing and Automation
- Design for Manufacturing
- Engineering Graphics
- Facilities Planning, Layout and Design
- Manufacturing Metrology
- Manufacturing Processes
- Materials and Treatments
- Metal Working Theory and Applications
- Numerical Control and CAM
- Process and Automation
- Production Planning and Control
- Statistical Quality Control
- Additive Manufacturing*
- Artificial Intelligence and Robotics*
- Composites Manufacturing*
- Net Shape Engineering*
- Plastics Engineering*
- Safety Engineering*

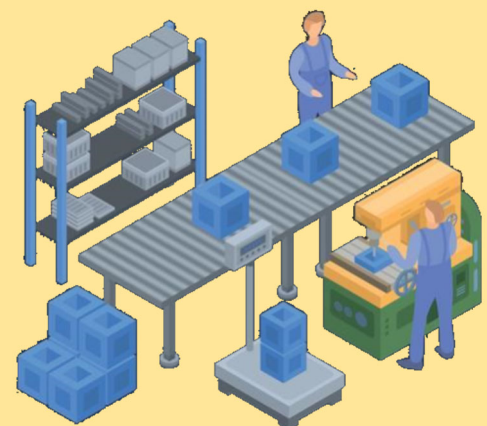
* *elective*

Labs

- Metal Removal
- Metal Forming, Casting, and Joining
- Plastics Forming
- Composites Machining
- Metrology
- Additive Manufacturing
- Computer-Aided Design and Manufacturing (CAD/CAM)
- Robotics and Automation

Student Clubs

- Society of Manufacturing Engineers (SME)
- Society of Plastics Engineers (SPE)
- American Foundry Society (AFS)



IME Department Laboratories

Additive Manufacturing Lab (Bldg. 17-1540): equipped with 20 Fused Deposition Modeling 3D Printers, 1 STRASYS F170 3D Printer, 4 Stereolithography machines, 1 metal printer (shared with Aerospace Eng. Dept.).

CNC Machining and Simulation Lab (Bldg. 17-1540): equipped with: 20 HAAS Simulation panels, 8 HAAS CNC milling machines, 4 HASS CNC turning machines, 2 other CNC milling machines, one CNC Micro-lathe machine, 1 other CNC lathe, 1 tensile testing machine, presses, drills, sanding and grinding machines, tools, fixtures, measurement tools and devices, etc.

Computer Integrated Manufacturing (Automation and Robotics) Lab (Bldg. 17-1659): equipped with 4 Epson SCARA robots, 1 Festo Robotino Mobile robot with gripper, 1 Seiko manipulator robot, 10 SIEMENS SIMATIC HMI/PLCs, 4 SIEMENS PLCs, 6 Allen-Bradley PLCs, 4 SUN mini-production lines, 1 Traffic Light Training System, 1 Bottling Process Line, 1 Electro-pneumatic training system, 2 Electro-mechanical training systems with DC and Stepper motors, Peripheral devices such as optical encoders, wiring modules, emergency switches, toggle switches with lights, push buttons and lights, user manuals and worksheets.

Computer-Aided Design and Drafting Lab (Bldg. 17-2654): equipped with 30 stations with licensed SolidWorks software.

Foundry and Pattern Shop (Bldg. 13-1307B): equipped with one 700°F and one 1700°F furnaces, one Vacuum Cylindrical furnace, one Autoclave chamber, one Investment casting unit, Brinell and Rockwell hardness testers, sand mixers, sand humidity tester, lost foam casting utilities, patterns, match-plates, baseboards, flasks, mold-making utensils, safety outfits, etc.

Human Engineering and Measurement Lab (Bldg. 17-2626): equipped with 2 Coordinate Measuring Machines (CMM), one Optical microscope, one profilometer, one BTE work simulator, variety of measurement gauges, etc.

Plastic Engineering Lab (Bldg. 13-1307A): equipped with 1 industrial Plastic Injection Molding machine, 1 Plastic Thermoforming unit, sample molds and dies.

Sheet Metal Forming Lab (Bldg. 17-1540): equipped with 3 sheet-metal cutters, 3 sheet-metal benders, 2 hole punches, 1 shearing machine, 2 spot-welding machines, roll forming, hand-tools for riveting, filing, hammers, gauges, etc.)

Welding Lab (Bldg. 17-1536) is equipped with 18 Electric-arc (Stick) + Tungsten-Inert Gas (TIG) Welding machines, 18 Metal-Inert Gas (MIG) welding machines, 18 Oxyfuel welding torches, soldering and brazing. equipment, electrode grinding machines, full and half tinted welding helmets, 18 auto-darkening helmets, safety outfits and equipment.

IME Department Faculty

Dr. Shokoufeh Mirzaei (Chair): Operations Research, Data Science, Machine Learning

Dr. Abdul Sadat - Metals and Composites Machining, Computer Aided Design, Design for Manufacturing

Dr. Biman Ghosh - Design of Experiments, Computer simulation of equipment and systems, Facility Layout

Dr. Dika Handayani - Manufacturing Processes, Computer Aided Manufacturing, Quality Control

Dr. Ellips Masehian - Artificial Intelligence, Robotics, Automation, Manufacturing Processes, Optimization

Dr. Greg Placencia - Human Factors and Ergonomics, Safety, Engineering Economy

Dr. Javad Seif - Reliability and Maintainability, Quality Control, System Simulation, Optimization

Dr. Kamran Abedini - Ergonomics, Productivity Engineering, Operations Planning

Dr. Payam Parsa - Logistics and Supply Chain, Statistics, Facility and Layout, Operations Management

Dr. Saeideh Fallah-Fini - Systems Engineering, Operations Research, Simulation

Dr. Victor Okhuysen - Computer Aided Design, Plastics Engineering, Metal Casting, Manufacturing Processes

- And more than 20 full-time and part-time lecturers

Scan and get Involved tday:

