

MS ENGINEERING MANAGEMENT

Orfalea College of Business

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<http://www.cob.calpoly.edu/gradbusiness/degree-programs/mba-dual-degree/>

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Industrial & Manufacturing Engineering

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MS Engineering Coordinator: Jianbiao J. Pan

Academic Programs

Program name	Program type
Engineering Management	MBA/MS

MS Engineering Management is a concurrent degree that includes courses in the MBA program and the MS Engineering program with a specialization in Integrated Technology Management. It is a cooperative effort between the Orfalea College of Business and the Cal Poly College of Engineering (Industrial and Manufacturing Engineering Department). Students are required to have a prerequisite undergraduate bachelor's degree in engineering, computer science, or equivalent technical degree to be admitted to both the College of Engineering and the Orfalea College of Business, and to be enrolled in both degree programs. Successful participants are awarded both MBA and MS in Engineering degrees.

The mission of the MS Engineering Management program is to develop high quality industry-ready graduates who will be facilitators of change and integrators of engineering, business, and people issues.

Admission/Acceptance Requirements

Admission to the EMP is based upon:

- successful completion of an accredited undergraduate program of study in engineering, computer science or equivalent technical degree
- prior academic performance with particular emphasis placed on the last 90 quarter units (60 semester units)
- achievement on the Graduate Management Admission Test (GMAT) or Graduate Record Examination general test (GRE)
- letters of recommendation
- resume and statement of purpose
- prior work experience (desirable)

Culminating Experience

In order to satisfy the culminating experience requirement, students must satisfactorily complete a comprehensive examination in the MBA program *and* satisfactorily complete a comprehensive project in IME 596.

Formal Study Plan

The development and approval of a formal study plan, that fulfills the dual degree requirements, is obligatory. Students will work with the 1) College

of Engineering advisor to develop a plan to fulfill the requirements for the MS portion and the 2) Orfalea College of Business advisor to develop a plan to fulfill the requirements for the MBA portion of this concurrent degree program.

Program Learning Objectives

Master of Business Administration

- 1.1 Demonstrate competency in the following areas of business: management, quantitative methods, economics, accounting, finance, marketing, operations, and strategy.
- 1.2 Demonstrate strategic integration of the above areas.
- 1.3 Demonstrate the ability to apply analytics to decision making.
- 2.1 Recognize issues and create solutions using an approach that reflects ethical values.
- 3.1 Demonstrate knowledge of the issues involved in conducting business in a diverse, global environment.
- 4.1 Demonstrate professional written communication skills.
- 4.2 Demonstrate professional oral communication and presentation skills.
- 5.1 Recognize leadership skills and link to leadership theory.
- 5.2 Demonstrate effective team behaviors.

Master of Science in Engineering

1. Summarize and synthesize existing methods/solutions of engineering problems.
2. Solve complex technical and operational problems to meet both business and customer needs.
3. Analyze and interpret quantitative and qualitative data to make sound engineering and business decisions.
4. Communicate engineering ideas/solutions effectively across the entire enterprise.
5. Lead multidisciplinary teams and projects; assess tools and techniques, resources, and organizational systems for successful management of projects.

Required Courses

GSB 511	Accounting for Managers	4
GSB 513	Organizational Behavior	4
GSB 523	Managerial Economics	4
GSB 524	Marketing Management	4
or GSB 573	Marketing Research	
GSB 531	Managerial Finance	4
GSB 533	Aggregate Economics Analysis and Policy	4
GSB 562	Seminar in General Management and Strategy	4
IME 503	Applied Statistical Methods in Engineering ¹	4
IME 507	Graduate Seminar	2
IME 556	Technological Project Management ²	4
IME 577	Engineering Entrepreneurship	4
IME 580	Manufacturing Systems ³	4
IME 596	Graduate Project/Internship	5

College of Engineering Approved Electives⁴

Select from the following:		23
IME 500	Individual Study	
IME/AERO 510	Systems Engineering I	
IME/AERO 511	Systems Engineering II	

IME 520	Advanced Information Systems for Operations
IME 527	Design of Experiments
IME 541	Advanced Operations Research
IME 542	Applied Reliability Engineering
IME 543	Applied Human Factors
IME 544	Advanced Topics in Engineering Economy
IME 545	Advanced Topics in Simulation
IME 570	Selected Advanced Topics
IME 571	Selected Advanced Laboratory

College of Business Approved Electives

Approved Electives	16
Total units	90

- ¹ Students with a B+ or better grade in IME 326 or IME 327 may substitute IME 503 with another statistics related course from the list of IME 527, STAT 416, STAT 418, STAT 419, STAT 530, and STAT 531 upon approval of the IME graduate coordinator.
- ² Students with a B+ or better grade in IME 303 may substitute an approved technical elective course upon approval of the IME graduate coordinator.
- ³ Course cannot be taken by students who have already received credit for IME 410.
- ⁴ Students may take other 500 level courses after consultation with and approval by advisor and the graduate coordinator.