MS ENGINEERING MANAGEMENT

Orfalea College of Business
Business Bldg. (03), Room 409
Phone: 805.756.2637
cobgmp@calpoly.edu
http://www.cob.calpoly.edu/gradbusiness/degree-programs/mba-dual-degree/

Associate Dean: Sanjiv Jaggia
MBA Program Director: Beena Khurana

Industrial & Manufacturing Engineering
Engineering Bldg. IV (192), Room 235
Phone: 805.756.2540
MS Engineering Coordinator: Jianbiao J. Pan

Academic Programs

<table>
<thead>
<tr>
<th>Program name</th>
<th>Program type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Management</td>
<td>MBA/MS</td>
</tr>
</tbody>
</table>

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 on:

- 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.
5. Lead multidisciplinary teams and projects; assess tools and techniques, resources, and organizational systems for successful management of projects.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSB 511</td>
<td>Accounting for Managers</td>
<td>4</td>
</tr>
<tr>
<td>GSB 513</td>
<td>Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>GSB 523</td>
<td>Managerial Economics</td>
<td>4</td>
</tr>
<tr>
<td>GSB 524</td>
<td>Marketing Management</td>
<td>4</td>
</tr>
<tr>
<td>or GSB 573</td>
<td>Marketing Research</td>
<td></td>
</tr>
<tr>
<td>GSB 531</td>
<td>Managerial Finance</td>
<td>4</td>
</tr>
<tr>
<td>GSB 533</td>
<td>Aggregate Economics Analysis and Policy</td>
<td>4</td>
</tr>
<tr>
<td>GSB 562</td>
<td>Seminar in General Management and Strategy</td>
<td>4</td>
</tr>
<tr>
<td>IME 503</td>
<td>Applied Statistical Methods in Engineering</td>
<td>4</td>
</tr>
<tr>
<td>IME 507</td>
<td>Graduate Seminar</td>
<td>2</td>
</tr>
<tr>
<td>IME 556</td>
<td>Technological Project Management</td>
<td>4</td>
</tr>
<tr>
<td>IME 577</td>
<td>Engineering Entrepreneurship</td>
<td>4</td>
</tr>
<tr>
<td>IME 580</td>
<td>Manufacturing Systems</td>
<td>4</td>
</tr>
<tr>
<td>IME 596</td>
<td>Graduate Project/Internship</td>
<td>5</td>
</tr>
</tbody>
</table>

College of Engineering Approved Electives

Select from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IME 500</td>
<td>Individual Study</td>
</tr>
<tr>
<td>IME/AERO 510</td>
<td>Systems Engineering I</td>
</tr>
</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>Approved Electives</th>
<th>16</th>
</tr>
</thead>
</table>

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.