



Polytechnic University of Puerto Rico  
Graduate School  
Master Program in Manufacturing Competitiveness



<b>M.S.M.C.</b> (Thesis Option)	<b>M.M.C.</b> (Design Project Option)
Core courses: 15 credit-hours Special Area: 12 credit-hours Electives Area: 3 credit-hours Thesis: 6 credit-hours Total: 36 credit-hours	Core courses: 15 credit-hours Special Area: 12 credit-hours Electives Area: 6 credit-hours Design Project: 3 credit-hours Total: 36 credit-hours

### Core Courses

MMP 6000 - Advanced Statistics and Quality Improvement<sup>1</sup>  
 MMP 6002 – Operations Planning and Control<sup>1</sup>  
 MMP 6006 – Lean Manufacturing  
 MMP 6008 – Foundations in Quality Learning and Assurance  
 MMP 6052 – Managerial Finances and Cost Accounting<sup>2</sup>  
 SEMI 5500 – Business Writing and Presentation Skills Seminar

<sup>1</sup> Students with a Bachelor's degree in Industrial Engineering must substitute this course with an elective course with MMP code.  
<sup>2</sup> Students with a Bachelor's degree in Business Administration must substitute this course with an elective course with MMP code.

### Specialization Courses

#### Quality Management

Must select 12 credits including MMP 6130 which is required

MMP 6130 – Six Sigma  
 MMP 6190 – Measuring and Managing Customer Satisfaction and Loyalty  
 MMP 6250 – Audit Program Management  
 MMP 6256 – Assessment Tools to Improve Business Performance  
 MMP 6558 – Machine and Process Characterization  
 MMP 6570 – Design & Implementation of Statistical Sampling Plans

### Electives Courses\*

MMP 6145 – Lean Six Sigma MMP 6162 – Medical Devices I MMP 6518 – Project Management MMP 6520 – Industrial Systems Simulation MMP 6535 – Research in Manufacturing MMP 6540 – Management Techniques in the Manufacturing Environment	MMP 6550 – Ergonomics and Human Factors in the Workplace MMP 6552 – Industrial Safety of OSHA Regulations MMP 6560 – Organizational Behavior MMP 6562 – Environmental Requirements for Manufacturing MMP 6599 – Special Topics in Manufacturing
---	---

\* In addition to the current list of elective courses, the student could select as an elective any course with MMP code that is not specified as a core or specialization course component requirement

#### Thesis

MMP – 6800 - Thesis  
 MMP – 6801 – Thesis Extension

#### Design Project

MMP 6700 – Design Project  
 MMP 6701 – Design Project Extension



Polytechnic University of Puerto Rico  
 Graduate School  
 Master Program in Manufacturing Competitiveness



<b>M.S.M.C.</b> (Thesis Option)	<b>M.M.C.</b> (Design Project Option)
Core courses: 15 credit-hours Special Area: 12 credit-hours Electives Area: 3 credit-hours Thesis: 6 credit-hours Total: 36 credit-hours	Core courses: 15 credit-hours Special Area: 12 credit-hours Electives Area: 6 credit-hours Design Project: 3 credit-hours Total: 36 credit-hours

### Core Courses

- MMP 6000 - Advanced Statistics and Quality Improvement<sup>1</sup>
- MMP 6002 – Operations Planning and Control<sup>1</sup>
- MMP 6006 – Lean Manufacturing
- MMP 6050 – Materials Flow and Logistics
- MMP 6052 – Managerial Finance and Cost Accounting<sup>2</sup>
- SEMI 5500 – Business Writing and Presentation Skills Seminar

<sup>1</sup> Students with a Bachelor's degree in Industrial Engineering must substitute this course with an elective course with MMP code.  
<sup>2</sup> Students with a Bachelor's degree in Business Administration must substitute this course with an elective course with MMP code.

### Specialization Courses

#### Pharmaceutical Products

Must select 12 credits including MMP 6132 which is required

- MMP 6110 – Industry Profile and Business Management of Health Care Products
- MMP 6132 – Manufacture of Pharmaceutical Solid Dosage Forms
- MMP 6180 – Material Handling Automation
- MMP 6224 – Manufacture of Pharmaceutical Parenteral Dosage Forms
- MMP 6230 – Manufacture of Pharmaceutical Semisolid Dosage Forms
- MMP 6234 - GMP's and Regulatory Issues
- MMP 6236 – Packaging Technology
- MMP 6564 – Process Validation and Technology Transfer

### Electives Courses\*

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>MMP 6145 – Lean Six Sigma</li> <li>MMP 6162 – Medical Devices I</li> <li>MMP 6518 – Project Management</li> <li>MMP 6520 – Industrial Systems Simulation</li> <li>MMP 6535 – Research in Manufacturing</li> <li>MMP 6540 – Management Techniques in the Manufacturing Environment</li> </ul> | <ul style="list-style-type: none"> <li>MMP 6550 – Ergonomics and Human Factors in the Workplace</li> <li>MMP 6552 – Industrial Safety of OSHA Regulations</li> <li>MMP 6560 – Organizational Behavior</li> <li>MMP 6562 – Environmental Requirements for Manufacturing</li> <li>MMP 6599 – Special Topics in Manufacturing</li> </ul> |
|---|---|

\* In addition to the current list of elective courses, the student could select as an elective any course with MMP code that is not specified as a core or specialization course component requirement

- Thesis**
- MMP – 6800 - Thesis
  - MMP – 6801 – Thesis Extension

- Design Project**
- MMP 6700 – Design Project
  - MMP 6701 – Design Project Extension