Universidad Politécnica de Puerto Rico
Graduate School
Master Program in Manufacturing Competitiveness

<table>
<thead>
<tr>
<th>Core courses</th>
<th>Special Area</th>
<th>Electives Area</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 credit-hours</td>
<td>12 credit-hours</td>
<td>3 credit-hours</td>
<td>36 credit-hours</td>
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</tbody>
</table>

M.S.M.C.
(Thesis Option)

M.M.C.
(Design Project Option)

Core courses: 15 credit-hours
Special Area: 12 credit-hours
Electives Area: 6 credit-hours
Total: 36 credit-hours

Core Courses

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

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 6550 – Ergonomics and Human Factors in the Workplace
MMP 6552 – Industrial Safety of OSHA Regulations
MMP 6560 – Organizational Behavior
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

Contact Information:
Graduate School
E-mail: escuelagraduada@pupr.edu
Phone: 787-622-8000 Ext. 686

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Total: 36 credit-hours

M.M.C.
(Design Project Option)

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
MMP 6002 – Operations Planning and Control
MMP 6006 – Lean Manufacturing
MMP 6050 – Materials Flow and Logistics
MMP 6052 – Managerial Finance and Cost Accounting
SEMI 6500 – Business Writing and Presentation Skills Seminar

1 Students with a Bachelor’s degree in Industrial Engineering must substitute this course with an elective course with MMP code.
2 Students with a Bachelor’s degree in Business Administration must substitute this course with an elective course with MMP code.

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*
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 6550 – Ergonomics and Human Factors in the Workplace
MMP 6552 – Industrial Safety of OSHA Regulations
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MMP – 6800 - Thesis
MMP – 6801 – Thesis Extension

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