Georgia Tech
Professional Masters in Manufacturing Leadership

Proposed Degree Program

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Opportunity

- Companies desire development of their manufacturing leaders
- Industry desires a management / technical blended masters program
- An informal market scan showed significant enthusiasm among company officials and young professionals for the program concept
- An on-line / distance learning format was well received
- Program design has evolved into a common core curriculum with an industry related elective program

“You have to have the managerial courage to move forward. I had leadership from Boy Scouts, but not much else. You have to manage people 30 years your senior. ... You get the technical side (as an undergraduate), but not the people side.”

-Reliability Engineer, 2.5 Years of Experience
Professional Masters in Manufacturing Leadership: Target Students

- **Objective:** Develop manufacturing leaders through a two-year professional distance-learning program. Equip promising young professionals to assume positions of business and technical leadership in manufacturing or at the corporate level.

- **Target Students:** Plant/mill technical professionals seeking career development leading to manufacturing leadership positions.

- **Student Pre-Requisites:** Bachelor of Science degree, 1+ years professional experience in manufacturing.

- **Format:** Online instructional format, with one week on-campus each year, plus one week final design project and graduation.

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**PROFESSIONAL MASTERS DEGREE IN MANUFACTURING LEADERSHIP**
Program Four Quadrants

- **LEADERSHIP***
- **BUSINESS***
- **MANUFACTURING PRACTICES***
- **MANUFACTURING CONCENTRATION***

* Designates Manufacturing Leadership program core areas.
Example Program Content for a Professional Masters in Manufacturing Leadership (PMML)

**PMML Core Curriculum**

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<tbody>
<tr>
<td>A.</td>
<td>Leadership Development</td>
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<td>B.</td>
<td>Business Analysis and Decisions</td>
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<td>C.</td>
<td>Manufacturing Best Practices</td>
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**Select One Concentration**

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<tr>
<th>D. Elective Concentration (Possible Concentrations)</th>
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<tr>
<td>Forest Bioproducts</td>
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<td>Additive Manufacturing</td>
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<td>Chemical Process Industry</td>
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<td>Robotics</td>
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<td>Pharmaceutical Manufacturing</td>
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<td>Energy and Sustainability</td>
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<td>Discrete Manufacturing</td>
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Example Program Content for a Professional Masters in Manufacturing Leadership (PMML)

PMML Core

A. Leadership Development
   a. Principles and Ethics
   b. Organizational and Individual Effectiveness
   c. Team Leadership, Problem Solving and Creativity
   d. Industrial Relations, Conflict Resolution and Negotiating
   e. Strategic Planning and Implementation
   f. Leading Innovation and Change
   g. Communications

B. Business Analysis and Development

C. Manufacturing Best Practices

PMML Elective Concentration
Example Program Content for a Professional Masters in Manufacturing Leadership (PMML)

PMML Core

A. Leadership Development

B. Business Analysis and Development
   a. Financial Analysis of Production Systems
   b. Financial Management for Non-Financial Executives
   c. Global Manufacturing Strategy
   d. Capital Project Development and Selection
   e. Policy and Legal Considerations (permits and intellectual property)
   f. Start-up and Business Investment and Development
   g. Innovation and Portfolio Management

C. Manufacturing Best Practices

PMML Elective Concentration
Example Program Content for a Professional Masters in Manufacturing Leadership (PMML)

PMML Core

A. Leadership Development

B. Business Analysis and Development

C. Manufacturing Best Practices
   a. Sustainable System Design and Development
   b. Computer Integrated Manufacturing
   c. Supply Chain and Operations Management
   d. Total Quality Management Systems
   e. Reliability Systems
   f. Environmental, Health, Safety and Security Processes

PMML Elective Concentration
Example Program Content for a Professional Masters in Manufacturing Leadership (PMML)

PMML Core
A. Leadership Development
B. Business Analysis and Decisions
C. Manufacturing Best Practices

PMML Elective Concentration (Example Content)

Forest Bioproducts
a. Forest Materials (chemistry, material science)
b. Pulping, Bleaching and Papermaking Technologies
c. Markets, Products and Corporate Strategic Planning
d. Sustainable Manufacturing Processes and Products
e. Biorefining Pathways and Biochemical Products
f. New Materials: Nanocellulose and Composites
g. Industry Competitive Analysis and Future Forest
In Summary

“We would recommend people to take it... I have two or three I’d tap on the shoulder right now.”

-Mill Resident Manager
Professional Masters in Manufacturing Leadership, a collaboration of:

- Georgia Institute of Technology
- College of Engineering
- Scheller College of Business
- ISyE
- Professional Education
- School of Chemical & Biomolecular Engineering
- College of Engineering