Professional Master of Science and Engineering Management (PMSEM)

MSU’s Professional Master of Science and Engineering Management (PMSEM) degree is a 30-credit interdisciplinary graduate program that helps working professionals bridge the gap between science and engineering and business management in the workplace. Students complete 15 credits of foundational coursework and an additional 15 credits based on their educational needs. There is also a 12 credit graduate certificate option available.

This program provides professionals with an alternative to the traditional research-oriented M.S. degree in the sciences or engineering or a strictly business-focused M.B.A. At the core of the program are foundation courses in business and technical management that are relevant to today’s business world and highly valued by industry. Students can choose elective coursework that is most relevant to their career goals. The degree may be completed in two years and is designed to accommodate the unique needs and schedules of working professionals.

Coursework and instructors come from MSU’s renowned Colleges of Business, Engineering and Letters & Science. This program will prepare professionals for success at the management or executive level in the rapidly changing business environment of the 21st Century.

Professional Master of Science and Engineering Management Requirements:
Potential students must have the following:

- Bachelors degree in a science or engineering field
- 2 or more years of full-time employment in a science or engineering industry and a letter of recommendation from the employer OR Graduate Record Exam (GRE) with a minimum score of approximately 30.
- 3.0 undergraduate GPA

To apply to the program, fill out a Graduate School Application online (http://www.montana.edu/gradschool/apply.html) (submit a $60 non-refundable application fee). During the online application process, you will be asked to submit the following items:

- Official Transcripts from all post-secondary institutions sent to the Graduate School (Transcripts with degrees awarded from MSU are not required).
- 3 letters of recommendation
- Narrative of goals and interest in obtaining PMSEM degree
- Resume

Curriculum

Required Coursework (15 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSEM 501</td>
<td>Leading Human &amp; Fin Ent (Fall)</td>
<td>9</td>
</tr>
<tr>
<td>MSEM 502</td>
<td>Leading the Tech Enterprise (Spring)</td>
<td>6</td>
</tr>
</tbody>
</table>

Electives (15 credits)

The electives that may be taken depend on the degree track you are accepted into. There are three tracks - Construction Engineering, Management, Land Resources Environmental Sciences, and the Independent track. Students must petition to change tracks.

Construction Engineering Management Track

Students will take 15 credits in topics such as quality management, construction industry law, productivity and more. These courses can be taken fully online.

This track leverages the foundation course topics and further develops the civil or construction engineer’s technical knowledge base. The track’s core courses focus on specific needs of the construction industry and the executive's role for addressing those needs inside a successful construction company. The 3 credit professional paper is a required capstone course which allows the student to apply concepts learned to their current job situation.

<table>
<thead>
<tr>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ECIV 504</td>
<td>Construction Productivity</td>
<td>3</td>
</tr>
<tr>
<td>ECIV 505</td>
<td>Quality Assure/Risk Management</td>
<td>3</td>
</tr>
<tr>
<td>ECIV 506</td>
<td>Ad Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>ECIV 507</td>
<td>Law of the Construction Industry</td>
<td>3</td>
</tr>
<tr>
<td>ECIV 575</td>
<td>Research or Prof Paper/Project (Required capstone course)</td>
<td>3</td>
</tr>
<tr>
<td>ECIV 592</td>
<td>Independent Study</td>
<td>3</td>
</tr>
</tbody>
</table>

For more information about the Construction Engineering Management Track, contact:

Penny Knoll
MSU Civil Engineering
205 Cobleigh Hall, Bozeman, MT 59717-3900
Tel: 406-994-6139 Fax: 406-994-6105 E-mail: pennyk@ce.montana.edu

Land Resources Environmental Sciences Track

Students will take 15 credits in topics such as environmental risk management, watershed hydrology, landscape and ecosystem management and more. These courses can be taken fully online.

Programs are specifically adapted to each graduate student and often address processes at multiple scales through well-integrated, multi-disciplinary efforts. Understanding is developed through targeted advanced coursework tailored to the student.

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<tr>
<td>AGSC 401</td>
<td>Integrated Pest Management</td>
<td>3</td>
</tr>
<tr>
<td>ENTO 510</td>
<td>Insect Ecology</td>
<td>3</td>
</tr>
<tr>
<td>LRES 507</td>
<td>Environmental Risk Assessment</td>
<td>3</td>
</tr>
<tr>
<td>LRES 510</td>
<td>Biodiversity Methods</td>
<td>3</td>
</tr>
<tr>
<td>LRES 521</td>
<td>Holistic Thought &amp; Management</td>
<td>3</td>
</tr>
<tr>
<td>LRES 540</td>
<td>Ecology Plants &amp; Community</td>
<td>3</td>
</tr>
<tr>
<td>LRES 544</td>
<td>Water Quality</td>
<td>3</td>
</tr>
<tr>
<td>LRES 565</td>
<td>Environmental Biophysics</td>
<td>3</td>
</tr>
<tr>
<td>LRES 569</td>
<td>Ecol of Invasive Plants in GYE</td>
<td>2</td>
</tr>
<tr>
<td>LRES 571</td>
<td>Landscape &amp; Ecosys Ecology</td>
<td>3</td>
</tr>
<tr>
<td>LRES 573</td>
<td>Remote Sensing Env Sci</td>
<td>3</td>
</tr>
<tr>
<td>LRES 575</td>
<td>Prof Paper &amp; Project</td>
<td>3</td>
</tr>
<tr>
<td>LRES 591</td>
<td>Special Topics (Soil Ecosystems and Processes)</td>
<td>3</td>
</tr>
<tr>
<td>LRES 591</td>
<td>Special Topics (Applied Watershed Hydrology)</td>
<td>3</td>
</tr>
<tr>
<td>LRES 592</td>
<td>Independent Study</td>
<td>3</td>
</tr>
</tbody>
</table>
Individually Designed Track

Students will work with their adviser to select elective courses from their field, such as biology, chemistry, computer science, earth sciences, engineering, mathematics, physics, statistics or others deemed relevant. Online courses may be available; depending on the student’s individualized plan, on-campus coursework may be required. Any course from the list below may be included. Other courses may be included with adviser permission.

- ECIV 504: Construction Productivity (3)
- ECIV 505: Quality Assurance/Risk Management (3)
- ECIV 506: Ad Construction Management (3)
- ECIV 507: Law of the Construction Industry (3)
- ECIV 575: Research or Prof Paper/Project (3)
- ECIV 592: Independent Study (3)
- ECIV 598: Internship (2)
- AGSC 401: Integrated Pest Management (3)
- ENTO 510: Insect Ecology (3)
- LRES 507: Environmental Risk Assessment (3)
- LRES 510: Biodiversity Methods (3)
- LRES 521: Holistic Thought & Management (3)
- LRES 540: Ecology Plants & Community (3)
- LRES 544: Water Quality (3)
- LRES 565: Environmental Biophysics (3)
- LRES 569: Eco of Invasive Plants in GYE (2)
- LRES 571: Landscape & Ecosys Ecology (3)
- LRES 573: Remote Sensing Env Sci (3)
- LRES 575: Prof Paper & Project (1-4)
- LRES 591: Special Topics (Applied Watershed Hydrology) (3)
- LRES 591: Special Topics (Soil Ecosystems and Processes) (3)
- LRES 592: Independent Study (1-3)
- PSPP 546: Herbicide Physiology (3)

Certificates

PMSEM graduate certificates are a 12-15 credit option for professionals who would like additional business and science and engineering content but who are not yet looking for the full master’s degree. The certificate can be utilized as part of the full master’s degree at a later time. Core business coursework in the certificate is online but elective courses may be either online or on campus.

Graduate Certificate in Science and Engineering Project Management

The focus of this certificate is project management. The 6 credit Leading the Technical Enterprise course is required. The remaining 6 credits of electives will be determined with advisor approval. The required course is online but electives may require campus attendance.

- MSEM 502: Leading the Tech Enterprise (6)

Professional Practice of Architecture Graduate Certificate

The Professional Practice of Architecture Graduate Certificate is designed to build the next generation of leaders in the professional practice of architecture. Creative skills for managing people, projects and budgets can transform a talented individual into a leader in the profession. This 9 month, 15-credit online program will give you the foundation of solid business skills while you explore creative and visionary ways to think about the contemporary practice of architecture. This certificate is online.

- MSEM 501: Leading Human & Fin Ent (9)
- ARCH 510: Leadership in Prof Practice (3)
- ARCH 519: Synthesis of Arch Practice (3)

For More Information

Contact Lisa Brown, Program Manager, at lisa.brown@montana.edu or (406) 994-3062.

Explore Further

- Other Montana State Online Degree and Certificate Programs (http://eu.montana.edu/online/degrees)
- Frequently Asked Questions (http://eu.montana.edu/online/faq) concerning online courses.
- College of Engineering (http://www.coe.montana.edu)
- College of Business (http://www.montana.edu/cob)
- Is online learning right for you? Find out with our interactive quiz (http://eu.montana.edu/online/quiz).