REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

NAMED OPTION REQUIREMENTS

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
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</table>

Mode of Instruction Definitions

**Accelerated:** Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

**Evening/Weekend:** Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

**Face-to-Face:** Courses typically meet during weekdays on the UW-Madison Campus.

**Hybrid:** These programs combine face-to-face and online learning formats. Contact the program for more specific information.

**Online:** These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

**Requirement Detail**

Minimum 30 credits

**Credits**

- 2 semesters of B M E 701 2
- 9 credits of engineering courses in design, prototyping and manufacturing 9
- B M E 601 Special Topics in Biomedical Engineering 1
- B M E 601 Special Topics in Biomedical Engineering (Design for Rehabilitation) 1
- B M E 602 Special Topics in Biomedical Engineering 1
- B M E 602 Special Topics in Biomedical Engineering (Microfluidics and Rapid Prototyping) 1
- B M E 603 Special Topics in Bioinstrumentation and Medical Devices 1
- B M E/I SY E 662 Design and Human Disability and Aging 1
- M E 449 Redesign and Prototype Fabrication 1
- M E 514 Polymer Additive Manufacturing 1
- M E 549 Product Design 1
- M E 601 Special Topics in Mechanical Engineering 1
- M E/I SY E 641 Design and Analysis of Manufacturing Systems 1
- M E 748 Optimum Design of Mechanical Elements and Systems 1
- I SY E 415 Introduction to Manufacturing Systems, Design and Analysis 1
- I SY E 515 Engineering Management of Continuous Process Improvement 1
- I SY E 517 Decision Making in Health Care 1
- I SY E 552 Human Factors Engineering Design and Evaluation 1
- I SY E 557 Human Factors Engineering for Healthcare Systems 1

Minimum Residence Credit Requirement

15 credits must be graduate-level coursework. Details can be found in the Graduate School’s Minimum Graduate Coursework (50%) policy (https://policy.wisc.edu/library/UW-1244 (https://policy.wisc.edu/library/UW-1244/)).

Overall Graduate GPA Requirement

3.00 GPA required.

This program follows the Graduate School’s policy: https://policy.wisc.edu/library/UW-1203 (https://policy.wisc.edu/library/UW-1203/).

Other Grade Requirements

Assessments and Examinations

There are no degree-specific assessments and examinations outside of those given in individual courses.

Language Requirements

n/a
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>I SY E 601</td>
<td>Special Topics in Industrial Engineering</td>
</tr>
<tr>
<td>I SY E 602</td>
<td>Special Topics in Human Factors</td>
</tr>
<tr>
<td>I SY E 603</td>
<td>Special Topics in Engineering Analytics and Operations Research</td>
</tr>
<tr>
<td>I SY E 604</td>
<td>Special Topics in Manufacturing and Supply Chain Management</td>
</tr>
<tr>
<td>I SY E 606</td>
<td>Special Topics in Healthcare Systems Engineering</td>
</tr>
<tr>
<td>INTEREGR 477</td>
<td>Tools for Prototyping and Manufacturing</td>
</tr>
<tr>
<td>INTEREGR 601</td>
<td>Topics in Interdisciplinary Engineering</td>
</tr>
</tbody>
</table>

**6 credits of general business, entrepreneurship and strategic innovation courses**
*Must include at least one of the following two BME courses:*
- B M E 640 Medical Devices Ecosystem: The Path to Product
- B M E 740 Biomaterials Entrepreneurship
- GEN BUS 310 Fundamentals of Accounting and Finance for Non-Business Majors
- GEN BUS 311 Fundamentals of Management and Marketing for Non-Business Majors
- M H R A A E 540 Intellectual Property Rights, Innovation and Technology
- M H R 715 Strategic Management of Innovation
- M H R 722 Entrepreneurial Management
- M H R 734 Venture Creation
- M H R 738 Weinert Applied Ventures in Entrepreneurship (WAVE)
- R M I 650 Sustainability, Environmental and Social Risk Management

**6 credits of other technical elective engineering courses**
- B M E/ M E 415 Biomechanics of Human Movement
- B M E/ PHM SCI 430 Biological Interactions with Materials
- B M E/E C E 462 Medical Instrumentation
- B M E/E C E 463 Computers in Medicine
- B M E/M E 505 Biofluidics
- B M E 510 Introduction to Tissue Engineering
- B M E 511 Tissue Engineering Laboratory
- B M E 520 Stem Cell Bioengineering
- B M E/ MED PHYS 530 Medical Imaging Systems
- B M E/ MED PHYS 535 Introduction to Energy-Tissue Interactions
- B M E 545 Engineering Extracellular Matrices
- B M E 550 Introduction to Biological and Medical Microsystems
- B M E 556 Systems Biology: Mammalian Signaling Networks
- B M E/CBE 560 Biochemical Engineering
- B M E/ MED PHYS 573 Mathematical Methods in Medical Physics

**B M E/ MED PHYS 574 Data Science in Medical Physics**
- B M E/ MED PHYS 578 Non-Ionizing Diagnostic Imaging
- B M E/M E 615 Tissue Mechanics
- B M E/ MED PHYS/ PHM COL/M/PHYSICS/RADIOI 619 Microscopy of Life
- B M E/ CHEM/ MED PHYS 750 Biological Optical Microscopy
- B M E/E C E/ MED PHYS 778 Machine Learning in Ultrasound Imaging
- CBE 540 Polymer Science and Technology
- E C E/ COMP SCI/ I SY E 524 Introduction to Optimization
- E C E/ COMP SCI 533 Image Processing
- E C E/ COMP SCI/ M E 539 Introduction to Artificial Neural Networks
- M E 563 Intermediate Fluid Dynamics
- M E/E M A 570 Experimental Mechanics
- M E 573 Computational Fluid Dynamics
- M S & E 521 Advanced Polymeric Materials
- MED PHYS/ PEDIAT 705 Women and Leadership: Science, Health and Engineering

**3-6 credits of advanced design or research project**
- B M E 799 Advanced Independent Study

**Additional credits taken from the list above, in consultation with advisor**
- 0-6

**Total Credits**
- 30

1 At least 6 credits in “Engineering courses in design, prototyping, manufacturing” and/or “Technical elective engineering courses” need to be from B M E courses.

Students in this program may not take courses outside the prescribed curriculum without faculty advisor and program director approval.

Students in this program cannot enroll concurrently in other undergraduate or graduate degree programs.