Implementation Form - Undergraduate Certificates

This form must accompany an undergraduate certificate proposal. An updated form should be submitted when changes to the certificate are made. It is used by administrative offices to better assist departments and programs with implementation. Questions in this form reflect guidelines in the Full Guidelines for For-Credit Certificates, http://apir.wisc.edu/certificates.htm.

Document Date: 26 April 2015; Revised by Jocelyn Milner, June 18, 2015
Certificate Name: Manufacturing Engineering
Faculty Program Director: Frank Pfefferkorn
Primary Faculty/Staff Contact: Frank Pfefferkorn
Home Department/Academic Unit (Name/UDDS): Mechanical Engineering / A1962
  Approval Date: 4 December 2014
School/College: College of Engineering
  Approval Date: 11 February 2015
UAPC Approval Date: June 18, 2015
Implementation Term (usually the fall term after UAPC approval): Fall 2015
Year that first program review is scheduled (usually 5 years after implementation): 2020-2021

Person/office responsible for maintaining requirements in DARS: College of Engineering Student Services
Person/office responsible for maintaining curriculum exceptions and substitutions: Frank Pfefferkorn

Information to be completed by RO and APIR:
Plan Code (assigned by the Registrar’s Office):
CIP Code (assigned by Academic Planning and Institutional Research): 14.2701
Primary Divisional Disciplinary Assignment (assigned by APIR for analysis purposes only): P

Curriculum:
Credit total required (12-18 credits): 18 credits
List certificate curriculum requirements for completion:

- Undergraduate standing at UW-Madison
- Enrolled in any college/school/department at UW-Madison
- Complete three of the following four core courses (i.e., 9 credits) with a grade of BC or higher in each.
  - ME 313: Manufacturing Processes
  - ME 314: Manufacturing Fundamentals
Complete three courses (i.e., 9 credits) from the following list of elective courses with a grade of BC or higher in each. At least one course must be selected from each of the categories. “Double dipping” is not allowed. If ME 314 and/or ISyE 415 are taken as part of the Core Course Requirement, then they cannot also count as an elective.

- **Category 1 - Mechanical and Materials Engineering Electives**
  - ME 314: Manufacturing Fundamentals
  - ME 417: Introduction to Polymer Processing
  - ME 418: Engineering Design with Polymers
  - ME 419: Fundamentals of Injection Molding
  - ME 420: Introduction to Polymer Composite Processing
  - ME 429: Metal Cutting
  - ME 439: Introduction to Robotics
  - ME 447: Computer Control of Machines and Processes
  - ME 449: Redesign and Prototype Fabrication
  - ME 514: Rapid Prototyping and Manufacturing
  - MSE 435: Joining of Materials: Structural, Electronic, Bio and Nano Materials
  - MSE 462: Welding Metallurgy

- **Category 2 – Industrial & Systems Engineering Electives**
  - ISyE 415: Introduction to Manufacturing Systems, Design and Analysis
  - ISyE 510: Facilities Design
  - ISyE/ME 512: Inspection, Quality Control and Reliability
  - ISyE 564: Occupational Ergonomics and Biomechanics
  - ISyE 575: Introduction to Quality Engineering or Stat/ME 424: Design of experiments
  - ISyE 605: Computer integrated manufacturing
  - ISyE/ME 641: Design and Analysis of Manufacturing Systems
  - ISyE 615: Production Systems Control
  - ISyE 643: Performance Analysis of Manufacturing Systems

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<tr>
<th>Please answer the following yes or no:</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Will there be limits on enrollment?</td>
<td></td>
<td>X</td>
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<tr>
<td>If Yes, please explain: Current resources can handle the enrollment of 24 new students per year.</td>
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<tr>
<td>Confirm that all core/required courses are approved through the school/college curriculum committee.</td>
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<td>X</td>
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<tr>
<td>Confirm that courses in the curriculum are offered on a regular basis and have space for students in the program.</td>
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<td>X</td>
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<tr>
<td>All courses numbered less than 699.</td>
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<td>X</td>
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<tr>
<td>Are courses taken as Pass/Fail or Audit allowed? If Yes, specify limits:</td>
<td></td>
<td>X</td>
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<tr>
<td>Are courses taken Credit/No Credit allowed?</td>
<td></td>
<td>X</td>
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If Yes, specify limits:  
The credit total is less than half of the credits required for related majors.  
Special topics courses are only used if all instances count for the certificate.  
Will the certificate use the default GPA requirements of GPA of 2.0 to be earned on all course work for the certificate?  
If No, specify other requirements: Cumulative GPA of 3.0 must be earned.  
Will exceptions to the course core requirements be allowed?  
If yes, specify limits and process:  
Confirm that at least 50%/half of the credits must be earned “in residence” at UW-Madison (in residence includes distance/online courses and Study Away/Abroad on UW-Madison courses.)  
Confirm that the program/faculty and staff understand that a student’s graduation should not be delayed to complete the certificate.  
Does the certificate have enough flexibility to make it accessible to transfer students and students who identify an interest as late as their junior year?  
Confirm that the program/department has a process in place to report certificate enrollment to the Registrar’s Office.  
Confirm that the program/department has a process in place to monitor student progress and to notify the Registrar’s Office when students complete the certificate requirements.

Specify overlap provisions – name degree/major or certificate programs that may not be earned along with the certificate, including any degree/major or certificate programs that may have overlapping names and or content. (Note that majors take priority over certificates.): NONE

**Which students are eligible for the certificate?** Check those that apply.

- [X] Undergraduates in all schools/colleges (this is the default eligibility)
- [ ] Undergraduates in specific schools/colleges
  - List specific schools/colleges:
- [ ] University Special (non-degree seeking students)