## Template For Development Of An Accelerated Bachelor's / Master's Program

1. **Proposing College / School:** Engineering  
   **Department:** Industrial and Systems Engineering

2. **Program Coordinator:** Jeffrey S. Smith  
   **3. Effective Term:** Fall 2010

4. **Included Programs:**  
   Undergraduate: BISE  
   Graduate: MISE, MS

5. **Admission Qualifications:**  
   - Credit Hours Earned  
     - Minimum: 45  
     - Maximum: 108  
     - At Auburn: 24  
   - Grade Point Average  
     - Major: 3.4  
     - Overall: 3.4  
   - Minimum Grade in Gateway Course

6. **Retention Standards:**  
   - Time Limit to Earn Degree  
     - Undergraduate Program: 2 years  
     - Graduate Program: 4 years  
   - Grade Point Average  
     - Major: 3.4  
     - Overall: 3.4  
   - Minimum Grade in Major Course(s)

7. **Graduate Course Substitutions:**  
   (List all courses at the graduate level that will count for undergraduate credit in the program)

<table>
<thead>
<tr>
<th>Graduate Course</th>
<th>Undergraduate Course Replaced</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSY Graduate Course</td>
<td>INSY Elective</td>
<td>3</td>
</tr>
<tr>
<td>INSY Graduate Course</td>
<td>INSY Elective</td>
<td>3</td>
</tr>
<tr>
<td>INSY Graduate Course</td>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>Undergraduate Course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate Course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate Course</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8. Justification for Program:
The accelerated degree program will provide an opportunity for highly motivated students to gain a depth of understanding of industrial engineering beyond that of typical bachelor’s level graduates and make them more competitive for industrial positions or for graduate studies. The accelerated degree program will also provide an opportunity for students involved in undergraduate research to build on that research and develop it into a master thesis or masters project. In both cases, the accelerated program allows student to achieve these accomplishments with only an additional one year and summer beyond the bachelor’s degree. The availability of an accelerated degree program will also be useful in recruiting highly motivated high school students.

(Include a concise, yet adequate rationale for the proposal of the accelerated program -- citing such factors as market need, student demand, etc.)

9. Application Process:
Students will apply for the program after completion of INSY 3420 and INSY 3700, which are taken in Spring of their junior year. Applications will consist of plans of study for both the BISE and MS/MISE degrees and will be due by June 1. Students accepted into the program must have overall and in-major GPAs of at least 3.4. Upon approval by the Program Coordinator and Program Chair, students will apply to the Graduate School, so that accepted students can register in the 6000 and 7000-level courses beginning in Fall of their senior year.

(Outline the process for acceptance into the accelerated program; include all necessary departmental, college, and other approvals that will be necessary)

10. Program Matriculation:
Students will matriculate in the accelerated program during Fall of the senior year of their undergraduate degree program. According to the model schedule, students will complete the BISE in the first Spring following matriculation into the program, which would be their last semester in the normal bachelor’s degree program. The Master of Industrial Engineering/ Master of Science would be completed in August of the second year in advanced degree program (i.e. 2 years after matriculating into the accelerated program or 15 months after completion of the bachelor’s degree).

(Provide a brief narration of the program, as it will be taken by students; include estimated timeframes for application to the graduate portion of the program, completion of the undergraduate portion of the program, and any internships/field experience)

11. Academic Advising:
All undergraduate students in Industrial Engineering must meet with the academic advisor each semester and this practice will apply to students in the accelerated program. Graduate students will have a major professor directing their project/thesis research or will meet with the Graduate Program Officer if they are taking the course work only MISE option. In addition, the Industrial Engineering academic advisor is available as needed.

(Address how academic advising for the student will be handled, from undergraduate program admission through completion of the accelerated program)

12. Withdrawal Process:
Students may withdraw voluntarily from the program by notifying the Industrial Engineering Graduate Program Officer.

(Outline both the process for withdrawing from the accelerated program, as well as the implications on matriculation and earning of undergraduate and graduate degrees)

13. Additional Information:

(Include any additional information regarding the accelerated program that may be pertinent to its review and approval)
Curriculum Models

Senior Year for Students in Accelerated Degree Program

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSY 4330: Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>INSY 4500: Professional Practice</td>
<td>1</td>
</tr>
<tr>
<td>INSY 4700: Manufacturing Systems</td>
<td>3</td>
</tr>
<tr>
<td>INSY Elective (INSY Graduate Course)</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 3810: Fundamentals of Electrical Engineering</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 1040: Business Ethics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>UNIV4AA0 EN1: Undergraduate Graduation</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

The differences for the students in the accelerated program are the INSY Graduate Course entries in bold. The students will be able to take an INSY Graduate course at the 6000 or 7000 level.

Model for the Master of Industrial Engineering and Master of Science

First Fall Semester (Senior Undergraduate)
- INSY Graduate Course (3)

First Spring Semester (Senior Undergraduate)
- INSY Graduate Course (3)
- INSY Graduate Course (3)

First Fall Semester
- INSY Graduate Course (3)
- INSY Graduate Course (3)
- INSY Graduate Course (3)
- INSY Seminar (1)

First Spring
- INSY Graduate Course (3)
- INSY Graduate Course (3)
- INSY Graduate Course (3) or Thesis and Research (3)

First Summer
- INSY Graduate Course (3) or Thesis and Research (3) or MISE Project (3)

Both Master’s degrees have the same five-course core (INSY 6600, INSY 7300, INSY 7420, and two from INSY 7400, INSY 7030, INSY 7240, and INSY6010/INSY7060). The remaining 5 courses are selected in consultation with the student’s advisor based on the student’s research/academic interests and/or thesis/project requirements. The order that core courses and elective courses is not specified and varies significantly between different students. Note that students might also be able to start their graduate program the summer semester after completing their undergraduate degree, depending on their course selection and sequence.
Undergraduate Technical Electives

- Any INSY course not required for the major
- COMP 5000 Web Application Development (Senior Standing)
- ELEC 3820 Industrial Instrumentation (Pre-req ELEC 3810)
- ELEC 5150 Information Security (Senior Standing)
- MATL 3100 Eng. Material-Metals (Pre-req MATL 2100)
- MECH 3220 Computer Aided Engineering (Pre-req ENGR 1110, COMP 1200, co-req MATH 2650)
- MECH 5510 Acoustics (Pre-req MATH 2650)
- STAT 4610 Applied Regression Analysis (Pre-req STAT 3610 or STAT 3010)
- STAT 4620 Applied Nonparametric Statistics (Pre-req STAT 3610 or STAT 3010)
- STAT 4630 Applied Time-Series Analysis (Pre-req STAT 3610 or STAT 3010)
- STAT 5630 Sample Survey, Design and Analysis (Pre-req STAT 3800)
- STAT 5670 Probability and Stochastic Processes (Pre-req MATH 2630)
- STAT 5690 Chaotic and Random Phenomena (Pre-req MATH 1620)

Undergraduate INSY Electives

- Any INSY course not required for the major

Brief explanation of the course substitutions

We have elected to allow the undergraduate students to replace two of their current INSY Electives and their Technical Elective with any INSY graduate courses as part of the accelerated degree program. Our MISE and MS degrees both have the same 5 course core requirement and include 5 elective courses (including thesis or project hours). Students choose their electives in consultation with their advisor and advisory committee. While the core courses are offered yearly, many of the electives are offered on an every-other-year or every-three-semesters basis. As such, we would like to be as flexible as possible in order for students to be able to take electives that best suit their needs. So, for example, we would normally recommend that the accelerated students focus on the master’s core courses as their dual-counting courses, but if the student is interested in a specific elective, they might get only one opportunity to take that course as it will not be offered again during their tenure in the program. Therefore, we do not wish to specify the individual course substitutions for the accelerated program. However, all graduate students’ plans of study must be individually approved by the student’s advisory committee, so there is a built-in mechanism to ensure appropriate plans of study.