Industrial and Systems Engineering
Undergraduate Manufacturing Track

Below are specific requirements for this track:

Requirement 1. As part of the Core Courses required of all ISE undergraduates, students must complete the following courses relevant to this track (as well as all other ISE Core Courses):

- ISE 2400 (Design of Work)
- ISE 2500 (Introduction to Manufacturing Engineering)
- ISE 3400 (Production Planning & Facilities Planning)
- ISE 3600 (Workplace Ergonomics)
- ISE 4120 (Quality and Reliability Engineering)
- ME 2040 (Statics and Introduction to Mechanics of Materials)

Requirement 2. Students must complete the following courses:

- ISE 3500 (Process Engineering for Machining Operations)
- ISE 5682 (Fundamentals of Product Design Engineering)

Requirement 3. Students must pick 1 of the following:

- ISE 4500 (Manufacturing Process Engineering)
- ISE 5465 (Manufacturing of Energy Systems)
- ISE 5530 (Tool Engineering)
- ISE 5501 (Solid State Shaping Processes)
- ISE 5502 (Liquid Shaping Processes)
- ISE 5540 (Polymer Processing Fundamentals)
- MATSCEN 5451 (Process Metallurgy)

Requirement 4. To fulfill the requirements for the BS degree in ISE, in addition to completing Requirements 1-3 of this track, students must take an additional 9 credit hours of technical electives from the list of approved technical electives, which includes the courses in Requirement 3 above (so that students can take more than one of these courses). ISE 5460 Occupational Safety: Analysis and Design of Work Environments and ISE 5810 Integrated Lean Sigma Foundations are two other courses on the list of approved technical electives that are particularly relevant to students interested in the Manufacturing track.
Note that at most 6 of the credit hours fulfilled as part of Requirements 3 and 4 can be non-ISE technical electives.