Students interested in the dual major with Industrial Engineering should follow this Manufacturing Systems flowchart and Academic Plan. Postpone a BacCore to senior year.

Shaded courses are either pre-requisite courses, or courses strongly recommended to take prior to Upper Division coursework.

Su Courses listed in red as being available during a term, may or may not actually be offered.

Bacc Core courses are taken to complete OSU's baccalaureate core curriculum (https://catalog.oregonstate.edu/earning-degrees/bcc/) and need only be taken sometime before graduation. For IE majors, the eight Bacc Core courses consist of one course each in the areas of western culture (WC), cultural diversity (CD), literature and the arts (LA), social processes and institutions (SPI), biological science (BIO), difference, power and discrimination (DPD), contemporary global issues (CGI), and science, technology and society (STS).
## Yr 3, 4 Manufacturing Engineering—Systems: Non MECOP

<table>
<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ME 311</strong> Intro to Thermal-Fluid Sciences (4cr, FWSp)</td>
<td><strong>MFGE 336</strong> Production Engineering (4cr, W)</td>
<td><strong>BACC CORE Course</strong> † WC, CD, LA, SPI, DPD, BIO, CGI, STS</td>
<td><strong>Restricted Elective (or IE 412)</strong> ‡ (3cr)</td>
<td><strong>MFGE 337</strong> Materials and Manufacturing Processes (4cr, W)</td>
<td><strong>ME 413</strong> CAD Design &amp; Manufacturing (4cr, FSp)</td>
</tr>
<tr>
<td><strong>IE 355</strong> Statistical Quality Control (4cr, F)</td>
<td><strong>IE 356</strong> Experimental Design (4cr, W)</td>
<td><strong>ENGR 201</strong> Electrical Fundamentals (3cr, FWSpSu)</td>
<td><strong>MFGE 436</strong> Lean Manufacturing Systems Engineering (4cr, F)</td>
<td><strong>BACC CORE Course</strong> † WC, CD, LA, SPI, DPD, BIO, CGI, STS</td>
<td><strong>Restricted Elective (or IE 4XX)</strong> ‡ (3cr)</td>
</tr>
<tr>
<td><strong>IE 367</strong> Production Planning and Control (4cr, F)</td>
<td><strong>IE 368</strong> Facilities Design and Operations Management (4cr, W)</td>
<td><strong>BACC CORE Course</strong> † WC, CD, LA, SPI, DPD, BIO, CGI, STS</td>
<td><strong>Restricted Elective (or IE 425)</strong> ‡ Dual majors only (3cr)</td>
<td><strong>Restricted Elective (or IE 426)</strong> ‡ (3cr)</td>
<td><strong>MfgE 437</strong> Computer Control of Manufacturing Processes (4cr, F)</td>
</tr>
<tr>
<td><strong>MATS 321</strong> Materials Science (4cr, FWSp)</td>
<td><strong>IE 366</strong> Work Design (4cr, WSu)</td>
<td><strong>ME 382</strong> Intro to Design (4cr, F)</td>
<td><strong>IE 497</strong> MIME Capstone Design (4cr, FW)</td>
<td><strong>IE 498</strong> MIME Capstone Design (4cr, WSp)</td>
<td><strong>BACC CORE Course</strong> † WC, CD, LA, SPI, DPD, BIO, CGI, STS</td>
</tr>
<tr>
<td><strong>CH 202</strong></td>
<td><strong>IE 255</strong></td>
<td><strong>MTH 252</strong></td>
<td><strong>IE 255</strong></td>
<td><strong>IE 255</strong></td>
<td><strong>ME 382 or IE 368</strong></td>
</tr>
</tbody>
</table>

**Fall**
- ENGR 212 & MTH 256

**Winter**
- ENGR 213, ENGR 248, ENGR 321, & ME 250

**Spring**
- IE 255

**Fall**
- IE 255

**Winter**
- MTH 252

**Spring**
- IE 255

**Fall**
- CH 202

**Winter**
- IE 255

**Spring**
- ENGR 248, ME 250

**Fall**
- IE 385, IE 356, IE 366, IE 367, IE 368 & MFGE 337

**Winter**
- IE 355, IE 356, IE 366, IE 367, IE 368 & MFGE 337

**Spring**
- IE 451/452/453/454/455/456/457/458

### Notes
- **Three electives required. Students completing the dual major with IE must take IE 412, 415, 425, 426, plus one more 400-level IE course** (IE 471 suggested for Spring elective). A complete list of Restricted Electives is available through the "Manufacturing Systems Option Academic Plan" link at [http://mime.oregonstate.edu/undergrad/advising/acadplan](http://mime.oregonstate.edu/undergrad/advising/acadplan).
- **Bacc Core courses** are taken to complete OSU’s baccalaureate core curriculum ([https://catalog.oregonstate.edu/earning-degrees/bcc/](https://catalog.oregonstate.edu/earning-degrees/bcc/)) and need only be taken sometime before graduation. For MIME majors, the seven Bacc Core courses consist of one course each in the areas of western culture (WC), cultural diversity (CD), literature and the arts (LA), biological science (BIO), difference, power and discrimination (DPD), contemporary global issues (CGI), and science, technology and society (STS).

### Course Requirements
- **ENGR 212 & MTH 256**
- **ENGR 213, ENGR 248, ENGR 321, & ME 250**
- **IE 355 Statistical Quality Control (4cr, F)**
- **IE 356 Experimental Design (4cr, W)**
- **ENGR 201 Electrical Fundamentals (3cr, FWSpSu)**
- **MFGE 436 Lean Manufacturing Systems Engineering (4cr, F)**
- **IE 497 MIME Capstone Design (4cr, FW)**
- **IE 498 MIME Capstone Design (4cr, WSp)**
- **IE 415** (For Dual majors only) (4cr)

### Course Exclusions
- **ME 382 or IE 368**

### Course Restrictions
- **IE 366** is a restricted elective (or IE 426)** (3cr)
- **IE 412**, **IE 415**, **IE 425**, **IE 426** (3cr)

### Course Restrictions (Dual majors only)
- **IE 415** (For Dual majors only) (4cr)
- **IE 425**
- **IE 426**

### Course Notes
- **Su Courses** listed in red as being available during a term, may or may not actually be offered.
- **†** Bacc Core courses are taken to complete OSU’s baccalaureate core curriculum ([https://catalog.oregonstate.edu/earning-degrees/bcc/](https://catalog.oregonstate.edu/earning-degrees/bcc/)) and need only be taken sometime before graduation. For MIME majors, the seven Bacc Core courses consist of one course each in the areas of western culture (WC), cultural diversity (CD), literature and the arts (LA), biological science (BIO), difference, power and discrimination (DPD), contemporary global issues (CGI), and science, technology and society (STS).
Yr 3, 4 Manufacturing Engineering—Systems: MECOP

**Fall**
- ENGR 212 & MTH 256
- ME 311 Intro to Thermal-Fluid Sciences
  (4cr, FW) & ME 250
- MFGE 336 Production Engineering
  (4cr, W)
- Spring
- ME 382 or IE 366
- ME 413 CAD Design & Manufacturing
  (4cr, FS)
- MFGE 337 Materials and Manufacturing
  Processes
  (4cr, W)

**Winter**
- IE 355 Statistical Quality Control
  (4cr, F)
- IE 356 Experimental Design
  (4cr, W)
- MFGE 436 Lean Manufacturing
  Systems Engineering
  (4cr, F)
- Spring
- ENGR 201 Electrical Fundamentals
  (3cr, FW)
- Restricted Elective (or IE 412)**
  (3cr)
- BACC CORE Course ¹
  WC, CD, LA, SPI, DPD,
  BIO, CGI, STS
- Summer
- IE 255
- IE 367 Production Planning
  and Control
  (4cr, F)
- IE 368 Facilities Design
  and Operations Management
  (4cr, W)
- Restricted Elective (or IE 425)***
  (3cr)
- BACC CORE Course ¹
  WC, CD, LA, SPI, DPD,
  BIO, CGI, STS

**Spring**
- IE 355 Statistical Quality Control
  (4cr, F)
- IE 356 Experimental Design
  (4cr, W)
- MFGE 436 Lean Manufacturing
  Systems Engineering
  (4cr, F)
- Winter
- IE 362 or IE 366
- ME 497 MIME Capstone Design
  (4cr, FW)
- MfgE 437 Computer Control of
  Manufacturing Processes
  (4cr, F)
- Summer
- Restricted Elective (or IE 426)**
  (3cr)
- BACC CORE Course ¹
  WC, CD, LA, SPI, DPD,
  BIO, CGI, STS

**Summer**
- IE 255
- IE 367 Production Planning
  and Control
  (4cr, F)
- IE 368 Facilities Design
  and Operations Management
  (4cr, W)
- Restricted Elective (or IE 425)***
  (3cr)
- BACC CORE Course ¹
  WC, CD, LA, SPI, DPD,
  BIO, CGI, STS

**Intership**
- BACC CORE Course ¹
  WC, CD, LA, SPI, DPD,
  BIO, CGI, STS

**IE 4XX***(Dual majors only)
(3 or 4 cr)

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**Notes:**
- **Three electives required. Students completing the dual major with IE must take IE 412, 415, 425, 426, plus one more 400-level IE course. A complete list of Restricted Electives is available through the “Manufacturing Systems Option Academic Plan” link at [http://mime.oregonstate.edu/undergrad/advising/acadplan](http://mime.oregonstate.edu/undergrad/advising/acadplan).**
- **Two additional listed Restricted Electives are only required of students completing the dual major with IE.**

- **Courses listed in red as being available during a term, may or may not actually be offered.**

- **Bacc Core courses are taken to complete OSU’s baccalaureate core curriculum ([https://catalog.oregonstate.edu/earning-degrees/bcc/](https://catalog.oregonstate.edu/earning-degrees/bcc/)) and need only be taken sometime before graduation. For MIME majors, the seven Bacc Core courses consist of one course each in the areas of western culture (WC), cultural diversity (CD), literature and the arts (LA), biological science (BIO), difference, power and discrimination (DPD), contemporary global issues (CGI), and science, technology and society (STS).**
**Pre-Manufacturing Engineering--Systems**

**First year**
- **Fall**
  - MTH 103: Algebraic Reasoning (4cr, FWSpSu)
  - ENGR 199: Foundation for Engr Success (2, F)
  - WR 121: English Composition (3cr, FWSpSu)
  - PAC course (1cr, FWSpSu)
  - BACC CORE Course†: WC, CD, LA, DPD, BIO, CGI, STS
- **Winter**
  - MTH 111: College Algebra (4cr, FWSpSu)
  - COMM 111 or 114: (3cr, FWSpSu)
  - HHS 231: Lifetime Fitness for Health (2cr, FWSpSu)
  - Biology + Lab (4cr, FWSpSu)
- **Spring**
  - MTH 112: Elementary Functions (4cr, FWSpSu)
  - MTH 252: Integral Calculus (4cr, FWSpSu)
  - CH 201: Chemistry for Engineers (3cr, FW)
  - MIME 101: Intro to MIME (3cr, F)
  - BACC CORE Course†: WC, CD, LA, DPD, BIO, CGI, STS

**Second year**
- **Fall**
  - MTH 251: Differential Calculus (4cr, FWSpSu)
  - IE 255: Intro Quant. Analysis (3cr, FSp)
  - PH 211: Physics w/ Calculus (4cr, FWSpSu)
  - CH 202: Chemistry for Engineers (3cr, WSpu)
- **Winter**
  - MTH 252: Integral Calculus (4cr, FWSpSu)
  - MTH 254: Vector Calculus (4cr, FWSpSu)
  - ENGR 213: Strength of Materials (3cr, FWSpSu)
  - IE 212: Comp. Meth for IE (4cr, F)
  - ENGR 390: Engr. Economy (3cr, FWSpSu)
- **Spring**
  - MTH 251: Differential Calculus (4cr, FWSpSu)
  - ME 250: Intro to Manuf. Processes (1cr, FWSpSu)
  - ENGR 212: Dynamics (3cr, FWSpSu)
  - ENGR 211: Statics (3cr, FWSpSu)
  - WR 327: Technical Writing (3cr, FWSpSu)
  - PH 212: Physics w/ Calculus (4cr, FWSp)
  - ME 250: Intro to Manuf. Processes (1cr, FWSpSu)
  - MFGE 285: Intro to Industrial & Manufacturing Engr (3cr, F)

**Third year**
- **Fall**
  - MTH 256: Differential Equations (4cr, FWSpSu)
  - MTH 306: Matrix & Power Series Methods (4cr, FWSpSu)
  - PH 212: Physics w/ Calculus (4cr, FWSp)
  - PH 213: Physics w/ Calculus (4cr, WSu)
  - ENGR 285: Intro to Industrial & Manufacturing Engr (3cr, F)
- **Winter**
  - MTH 252: Integral Calculus (4cr, FWSpSu)
  - MTH 252: Integral Calculus (4cr, FWSpSu)
  - PH 211: Physics w/ Calculus (4cr, FWSpSu)
  - PH 211: Physics w/ Calculus (4cr, FWSpSu)
  - IE 212: Comp. Meth for IE (4cr, F)
- **Spring**
  - IE 255: Intro Quant. Analysis (3cr, FSp)
  - ENGR 212: Dynamics (3cr, FWSpSu)
  - ENGR 211: Statics (3cr, FWSpSu)
  - ENGR 285: Intro to Industrial & Manufacturing Engr (3cr, F)
  - ME 250: Intro to Manuf. Processes (1cr, FWSpSu)
  - ME 250: Intro to Manuf. Processes (1cr, FWSpSu)

**Pro School**
- **Fall**
  - PH 211: Physics w/ Calculus (4cr, FWSp)
  - PH 212: Physics w/ Calculus (4cr, FWSp)
  - ENGR 285: Intro to Industrial & Manufacturing Engr (3cr, F)
  - MTH 256: Differential Equations (4cr, FWSpSu)
  - MTH 306: Matrix & Power Series Methods (4cr, FWSpSu)
  - IE 255: Intro Quant. Analysis (3cr, FSp)
- **Winter**
  - MTH 252: Integral Calculus (4cr, FWSpSu)
  - MTH 252: Integral Calculus (4cr, FWSpSu)
  - MTH 252: Integral Calculus (4cr, FWSpSu)
  - MTH 252: Integral Calculus (4cr, FWSpSu)
  - MTH 252: Integral Calculus (4cr, FWSpSu)
  - MTH 252: Integral Calculus (4cr, FWSpSu)
- **Spring**
  - IE 255: Intro Quant. Analysis (3cr, FSp)
  - ENGR 212: Dynamics (3cr, FWSpSu)
  - ENGR 211: Statics (3cr, FWSpSu)
  - ENGR 285: Intro to Industrial & Manufacturing Engr (3cr, F)
  - ME 250: Intro to Manuf. Processes (1cr, FWSpSu)
  - ME 250: Intro to Manuf. Processes (1cr, FWSpSu)

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Initial Math placement is dependent on ALEKS placement score.

Lightly shaded courses are prerequisites for junior year courses, and recommended for completion prior to entry into the professional program.

Grades in dark-shaded courses are used to determine pre-Core GPA and are required for entry into the professional program.

Courses listed in red as being available during a term, may or may not actually be offered.

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**Notes:**
- Soph = Sophomore standing in engineering required to enroll in this class.
- † Bacc Core courses are taken to complete OSU’s baccalaureate core curriculum (https://catalog.oregonstate.edu/earning-degrees/bcc/) and need only be taken sometime before graduation. For MfgE majors, the eight Bacc Core courses consist of one course each in the areas of western culture (WC), cultural diversity (CD), literature and the arts (LA), social processes and institutions (SPI), biological science (BIO), difference, power and discrimination (DPD), contemporary global issues (CGI), and science, technology and society (STS).