## ESE SAMPLE CURRICULUM 2020-2021

### FIRST YEAR

<table>
<thead>
<tr>
<th>FALL</th>
<th>WINTER</th>
<th>SPRING</th>
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<tbody>
<tr>
<td>MIME 101 (3 cr)</td>
<td>CH 201 (3 cr) Chemistry for Engineering Majors</td>
<td>CH 205 (1 cr) Lab for CH 202</td>
</tr>
<tr>
<td>(Intro to MIME)</td>
<td>Preq: MTH 111</td>
<td>Preq: CH 202</td>
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<tr>
<td>CH 201 (3 cr)</td>
<td>MTH 252 (4 cr) Internal Calculus</td>
<td>MTH 254 (4 cr) Vector Calculus I</td>
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<tr>
<td>(Chemistry for Engineering Majors)</td>
<td>Preq: CH 201</td>
<td>Preq: MTH 252</td>
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<tr>
<td>MTH 251 (4 cr)</td>
<td>MTH 254 (4 cr) Applied Differential Equations</td>
<td>MTH 256 (4 cr) Linear Algebra I</td>
</tr>
<tr>
<td>Differential Calculus (Taught Summer &amp; Fall)</td>
<td>Preq: MTH 251</td>
<td>Preq: MTH 254</td>
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<tr>
<td>WR 121 (3 cr)</td>
<td>WR 327 (3 cr) Technical Writing</td>
<td>MTH 341 (3 cr) Intro to Statistics for Engineers</td>
</tr>
<tr>
<td>(English Composition) (Taught Fall, Winter, Spring)</td>
<td>Preq: WR 121</td>
<td>Preq: MTH 254</td>
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<tr>
<td>ECON 201 (4 cr)</td>
<td>PERSPECTIVE Biological Science (see bacc core guide)</td>
<td>PH 212 (4 cr) General Physics with Calculus</td>
</tr>
<tr>
<td>(Intro to Microeconomics) (Taught Fall, Winter)</td>
<td>Recommended: MTH 111</td>
<td>Preq: PH 211</td>
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### SECOND YEAR

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<tr>
<th>FALL</th>
<th>WINTER</th>
<th>SPRING</th>
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<tbody>
<tr>
<td>ENGR 112 (3 cr)</td>
<td>ENGR 211 (3 cr) Statics</td>
<td>ENGR 212 (3 cr) Dynamics</td>
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<tr>
<td>Intro to Computing</td>
<td>Preq: ENGR 112</td>
<td>Preq: ENGR 211 &amp; PH 211</td>
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<tr>
<td>ENGR 201 (3 cr)</td>
<td>ENGR 202 (3 cr) Electrical Fundamentals I</td>
<td>ST 314 (3 cr)</td>
</tr>
<tr>
<td>(Engineering Economy)</td>
<td>Preq: MTH 251 &amp; MTH 252</td>
<td>(Intro to Statistics for Engineers)</td>
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<tr>
<td>ENGR 213 (3 cr)</td>
<td>MTH 341 (3 cr) Linear Algebra I</td>
<td>PH 213 (4 cr)</td>
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<tr>
<td>Strength of Materials</td>
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<td>General Physics with Calculus</td>
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<tr>
<td>Lower Division Restricted Elective</td>
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<td></td>
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<td>Preq: PH 212 &amp; MTH 254</td>
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<tr>
<td>ENGR 201 (3 cr) Electrical Fundamentals II</td>
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<td>ENGR 212 (3 cr)</td>
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<tr>
<td>Dynamics</td>
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### Notes:
- Shaded courses are prerequisites for junior year courses, recommended for completion prior third year.
THIRD YEAR

FALL
- IE 425 (4 cr)
  Industrial Systems Optimization
  Preq: ST 314 & MTH 306 or MTH 341
- ME 311 (4 cr)
  Introduction to Thermal-Fluid Sciences
  Preq: ENGR 212 & MTH 256
- ESE 330 (4 cr)
  Modeling and Analysis of Dynamic Systems
  Preq: ENGR 202, ENGR 212, MTH 256, MTH 306 or MTH 341
- SUS 350 (4 cr)
  Sustainable Communities
  SYNTHESIS
  Contemporary Global Issues
  Preq: ST 314 & Jr. Standing

WINTER
- IE 415 (4 cr)
  Simulation and Decision Support Systems
  Preq: ST 314
- ME 312 (4 cr)
  Thermodynamics
  Preq: ME 311 & MTH 256
- ESE 360 (4 cr)
  Energy Consumption Analysis
  Preq: ENGR 390 or BA 360 & ME 311
- BA 357 (4 cr)
  Operations Management (Taught Winter & Spring)
  Preq: ST 314 & Jr. Standing

SPRING
- ESE 470 (4 cr)
  Energy Distribution Systems
  Preq: ENGR 202 & ME 311
- ESE 355 (4 cr)
  Energy Regulation
  Preq: ENGR 390 or BA 360
- IE 471 (3 cr)
  Project Management in Engineering
- PERSPECTIVE
  Difference, Power & Discrimination (see bacc core guide)

FOURTH YEAR

FALL
- ESE 497 (4 cr)
  MIME Capstone Design
  Preq: See notes
- ME 331 (4 cr)
  Introductory Fluid Mechanics
  Preq: MTH 254, 256, ENGR 212, & ME 311
- ESE 430 (4 cr)
  Feedback Control Systems
  Preq: ESE 330
- PERSPECTIVE
  Western Culture (see bacc core guide)

WINTER
- ESE 498 (4 cr)
  MIME Capstone Design
  Preq: ESE 497
- ME 332 (4 cr)
  Heat Transfer
  Preq: MTH 256, ENGR 212, ME 311, & ME 331
- ESE 471 (4 cr)
  Energy Storage Systems
  Preq: ENGR 202 & ME 312
- PERSPECTIVE
  Literature & Arts (see bacc core guide)

SPRING
- ESE 450 (4 cr)
  Energy Generation Systems
- ESE 450 (4 cr)
  Energy Generation Systems
- ESE 471 (4 cr)
  Energy Storage Systems
- PERSPECTIVE
  Cultural Diversity (see bacc core guide)

NOTES:
- Courses may not be offered in the term shown in future years. Students should check with their advisor about upcoming changes.
- ESE 497 pre-requisites: (ME 312, ME 331 (co-requisite), ESE 355, ESE 360, IE 425, WR 327)
- Restricted Electives (RE): Required to complete one lower division restricted elective and one upper division restricted elective.
- Upper Division RE options include: Please see advisor for course offerings and pre-reqs.