

|          |                                      | 15 Credits | Prerequisites/Co-requisites                             |
|----------|--------------------------------------|------------|---|
| CHEE 200 | Introduction to Chemical Engineering | 4          | -   |
| CHEE 291 | Instrumental Measurement Laboratory  | 4          | -   |
| CHEM 212 | Introductory Organic Chemistry 1     | 4          | P - CHEM 110 or equivalent / C - CHEM 120 or equivalent |
| MATH 262 | Intermediate Calculus                | 3          | P - MATH 141, MATH 133                                  |

|          |   | 16 Credits | Prerequisites/Co-requisites |
|----------|---|------------|-----------------------------|
| CHEE 204 | Chemical Manufacturing Processes              | 3          | P - CHEE 200                |
| CHEE 220 | Chemical Engineering Thermodynamics           | 3          | P - CHEE 200                |
| CHEM 234 | Topics in Organic Chemistry                   | 3          | P - CHEM 212 or equivalent  |
| COMP 208 | Computers in Engineering                      | 3          | P - MATH 140, MATH 141      |
| FACC 100 | Introduction to the Engineering Profession    | 1          | -                           |
| MATH 263 | Ordinary Differential Equations for Engineers | 3          | C - MATH 262                |

|          |                                 | 16 Credits | Prerequisites/Co-requisites |
|----------|---------------------------------|------------|-----------------------------|
| CHEE 314 | Fluid Mechanics                 | 4          | P - CHEE 204 / C - MATH 264 |
| CHEE 370 | Elements of Biotechnology       | 3          | P - CHEM 212                |
| CHEE 380 | Materials Science               | 3          | -                           |
| MATH 264 | Advanced Calculus for Engineers | 3          | P - MATH 262 / C - MATH 263 |
| MIME 310 | Engineering Economy             | 3          | -                           |

|          |   | 17 Credits | Prerequisites/Co-requisites           |
|----------|---|------------|---------------------------------------|
| CHEE 310 | Physical Chemistry for Engineers          | 3          | P - CHEE 220 or MIME 212              |
| CHEE 315 | Heat and Mass Transfer                    | 4          | P - CHEE 314                          |
| CHEE 340 | Process Modelling                         | 3          | P - MATH 263, MATH 264, CHEE 314      |
| CHEE 351 | Separation Processes                      | 3          | P - CHEE 204, CHEE 220 / C - CHEE 315 |
| CHEE 360 | Technical Paper 1                         | 1          | -                                     |
| CS       | Complementary Studies Group B (HSSML) - 1 | 3          | -                                     |

|          |                               | 16 Credits | Prerequisites/Co-requisites |
|----------|-------------------------------|------------|-----------------------------|
| CHEE 392 | Project Laboratory 1          | 4          | P - CHEE 291                |
| CHEE 423 | Chemical Reaction Engineering | 4          | P - CHEE 310                |
| CHEE 453 | Process Design                | 4          | P - CHEE 315, CHEE 351      |
| CHEE 462 | Technical Paper 2             | 1          | P - CHEE 360                |

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|          |                         | 17 Credits | Prerequisites/Co-requisites |
|----------|-------------------------|------------|-----------------------------|
| CHEE 457 | Design Project 2        | 5          | P - CHEE 456                |
| CHEE 474 | Biochemical Engineering | 3          | P - CHEE 370                |
| CHEE xxx | Technical Complementary | 3          | -                           |
| CHEE xxx | Technical Complementary | 3          | -                           |
| CS       |                         |            |                             |

P - FACC 100, 60 program credits

**The Technical Complementary courses currently approved by the Department are as follows:**

6-9 credits from the following:

|             |  | Credits |
|-------------|--|---------|
| BIOT 505    | Selected Topics in Biotechnology (Biotechnology Minor students only) | 3       |
| CHEE 363    | Projects Chemical Engineering 1                                      | 2       |
| CHEE 438    | Engineering Principles in Pulp and Paper Processes                   | 3       |
| CHEE 452    | Particulate Systems  | 3       |
| CHEE 458    | Computer Applications  | 3       |
| CHEE 464    | Projects in Chemical Engineering 2                                   | 2       |
| CHEE 487    | Chemical Processing: Electronics Industry                            | 3       |
| CHEE 494    | Research Project and Seminar 1                                       | 3       |
| or CHEE 495 | Research Project and Seminar 2                                       | 4       |
| or CHEE 496 | Environmental Research Project                                       | 3       |
| CHEE 541    | Electrochemical Engineering  | 3       |
| CHEE 543    | Plasma Engineering   | 3       |
| CHEE 561    | Introduction to Soft Tissue Biophysics                               | 3       |
| CHEE 562    | Engineering Principles in Physiological Systems                      | 3       |
| CHEE 563    | CHEE 562   |         |