

| YEAR TERM |        | MAJOR                                                                               |                                                                                                             |                                                                                             |                                                                                             |                                                                                 | GENERAL EDUCATION                                                                      |                                                          | TOTAL CREDITS |
|-----------|--------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------|---------------|
| YEAR 1    | FALL   | ETCS 105<br>CAREER DISCOVERY 2                                                      |                                                                                                             | PHYS 170<br>GENERAL PHYSICS I<br>Co-Req: MATH 170 4                                         |                                                                                             | MATH 170<br>CALCULUS I<br>Pre-Req: Requires Placement or MATH 136 or MATH 141 4 | FCWR 101/111<br>3<br>FOUNDATIONS OF COLLEGE COMPOSITION<br>Pre-Req: Requires Placement | DATA 101<br>3<br>MAKING SENSE OF A DATA-ORIENTED SOCIETY | 16            |
|           | SPRING |                                                                                     |                                                                                                             | PHYS 180<br>GENERAL PHYSICS II<br>Pre-Req: PHYS 170;<br>Co-Req: MATH 180 4                  | CHEM 107<br>ENGINEERING CHEMISTRY I<br>Pre-Req: MATH 135 or MATH 141 or higher 4            | MATH 180<br>CALCULUS II<br>Pre-Req: MATH 170 4                                  | FCWR 151/161<br>3<br>FOUNDATIONS OF RESEARCH WRITING<br>Pre-Req: FCWR 101/111          |                                                          | 15            |
| YEAR 2    | FALL   | MENG 201<br>ENGINEERING PROGRAMMING<br>Co-Req: MATH 161 or MATH 170 3               | MENG 211<br>ENGINEERING MECHANICS I (Statics)<br>Pre-Req: PHYS 170, MATH 180 3                              | PHYS 225<br>INTRODUCTION OF MODERN PHYSICS<br>Pre-Req: PHYS 180 3                           |                                                                                             | MATH 260<br>CALCULUS III<br>Pre-Req: MATH 180 4                                 | ICXX 3XX*<br>3<br>SEMINAR CHOICE (ICBS, ICLT, ICPH, or ICSS)<br>Pre-Req: FCWR 151/161  |                                                          | 16            |
|           | SPRING | EENG 125<br>FUNDAMENTALS OF DIGITAL LOGIC 3                                         | EENG 212<br>ELECTRICAL CIRCUITS I & ENGINEERING TOOLS<br>Pre-Req: PHYS 180 and MATH 180; Co-Req: MATH 260 4 | MENG 105<br>ENGINEERING GRAPHICS 1                                                          | MENG 221<br>STRENGTH OF MATERIALS<br>Pre-Req: MENG 211 & MATH 180 3                         | MATH 320<br>DIFFERENTIAL EQUATIONS<br>Pre-Req: MATH 260 3                       |                                                                                        |                                                          | 14            |
| YEAR 3    | FALL   | EENG 270<br>INTRODUCTION TO ELECTRONICS CIRCUITS<br>Pre-Req: EENG 211 or EENG 212 3 | EENG 275<br>ELECTRONICS LAB I<br>Pre-Req: EENG 211 or EENG 212 or EENG 221, and FCWR 101 or FCWR 111 1      | IENG 240<br>ENGINEERING ECONOMICS<br>Pre-Req: MATH 136 or MATH 141 or higher 3              |                                                                                             |                                                                                 | FCWR 304<br>3<br>COMMUNICATION FOR TECHNICAL PROFESSIONS<br>Pre-Req: FCWR 151/161      | LIBERAL ARTS ELECTIVE 3                                  | 13            |
|           | SPRING | IENG 251<br>PROJECT ENGINEERING<br>Pre-Req: MATH 161 or MATH 170 3                  | ENGINEERING CONCENTRATION ELECTIVE** 3                                                                      | ENGINEERING CONCENTRATION ELECTIVE** 3                                                      |                                                                                             |                                                                                 | ICXX 3XX*<br>3<br>SEMINAR CHOICE (ICBS, ICLT, ICPH, or ICSS)<br>Pre-Req: FCWR 151/161  | LIBERAL ARTS ELECTIVE 3                                  | 15            |
| YEAR 4    | FALL   | IENG 421<br>TECHNOLOGY ENTREPRENEURSHIP 3                                           | ENGINEERING CONCENTRATION ELECTIVE** 3                                                                      | ENGINEERING CONCENTRATION ELECTIVE** 3                                                      | STEM ELECTIVE 3<br>200-Level or higher MATH, PHYS or engineering or computer science course |                                                                                 | IENG 400<br>3<br>TECHNOLOGY AND GLOBAL ISSUES<br>Junior or Senior Status               |                                                          | 15            |
|           | SPRING | SENIOR DESIGN 4<br>Choose One:<br>MENG 470, EENG 489, EENG 491, or CENG 470         | ENGINEERING CONCENTRATION ELECTIVE** 3                                                                      | STEM ELECTIVE 3<br>200-Level or higher MATH, PHYS or engineering or computer science course | STEM ELECTIVE 3<br>200-Level or higher MATH, PHYS or engineering or computer science course |                                                                                 | ICXX 3XX*<br>3<br>SEMINAR CHOICE (ICBS, ICLT, ICPH, or ICSS)<br>Pre-Req: FCWR 151/161  |                                                          | 16            |
| CREDITS   |        |                                                                                     |                                                                                                             |                                                                                             |                                                                                             |                                                                                 |                                                                                        |                                                          | 120           |

\*Of the three required ICXX seminar course options (ICBS, ICLT, ICPH, ICSS), students must take three seminar courses from three different areas of study.

\*\*See the second page for Engineering Concentration Elective requirements.

Students must receive 'C-' or higher in all required Engineering courses.

Course names, numbers and/or pre-requisites are subject to change.

### Mechanical Engineering

Select 15 or 16 credits in the ME Curriculum so that there are no external prerequisites needed.

| Course Name                                        | Credits | Pre-Req                               | Course Name                                 | Credits | Pre-Req                                           |
|----------------------------------------------------|---------|---------------------------------------|---------------------------------------------|---------|---------------------------------------------------|
| <b>MENG 212 – Engineering Mechanics II</b>         | 3       | Pre-Req: MENG 211<br>Co-Req: MATH 260 | <b>MENG 340 – Fluid Mechanics</b>           | 3       | Pre-Req: MENG 240                                 |
| <b>MENG 240 - Thermodynamics</b>                   | 3       | Pre-Req: CHEM 107, PHYS 225           | <b>MENG 349 – Heat Transfer</b>             | 3       | Pre-Req: MENG 240, MATH 320                       |
| <b>MENG 310 – Intro to Materials Science</b>       | 3       | Pre-Req: CHEM 107 or CHEM 110         | <b>MENG 370 – Machine Design</b>            | 3       | Pre-Req: MENG 221                                 |
| <b>MENG 321 – Intro to Computer-Aided Design</b>   | 3       | Pre-Req: MENG 105                     | <b>MENG 420 – Modern Manufacturing</b>      | 4       | Pre-Req: MENG 310, MENG 221                       |
| <b>MENG 324 – Vibrations &amp; System Dynamics</b> | 3       | Pre-Req: MENG 201, MENG 212, MATH 320 | <b>MENG 450 – Mechatronic System Design</b> | 4       | Pre-Req: MENG 324, MENG 370, EENG 211 OR EENG 212 |

### Civil Engineering

Select 15 credits in the CE Curriculum so that there are no external prerequisites needed.

| Course Name                                                        | Credits | Pre-Req                     | Course Name                                                           | Credits | Pre-Req                               |
|--------------------------------------------------------------------|---------|-----------------------------|-----------------------------------------------------------------------|---------|---------------------------------------|
| <b>CENG 260 – Civil Engineering Materials</b>                      | 3       | Pre-Req: CHEM 107           | <b>CENG 330 – Construction Equipment &amp; Methods</b>                | 3       | Pre-Req: CENG 201, CENG 260           |
| <b>CENG 301 – Surveying &amp; Geomatics</b>                        | 3       | Pre-Req: CENG 201, MATH 170 | <b>CENG 340 – Structural Analysis &amp; Design</b>                    | 3       | Pre-Req: CENG 260, MENG 221, MATH 260 |
| <b>CENG 310 – Steel Structures</b>                                 | 3       | Pre-Req: CENG 260, MENG 221 | <b>CENG 360 – Geotechnical Engineering</b>                            | 3       | Pre-Req: MENG 221                     |
| <b>CENG 312 – Concrete Structures</b>                              | 3       | Pre-Req: MENG 221, CENG 260 | <b>CENG 380 – Fluid Mechanics &amp; Hydraulics</b>                    | 3       | Pre-Req: MATH 320                     |
| <b>CENG 320 – Mechanical &amp; Electrical Systems in Buildings</b> | 3       | Pre-Req: PHYS 180           | <b>CENG 410 – Construction Cost Estimation, Planning, and Control</b> | 3       | Pre-Req: CENG 330, IENG 251           |

### Electrical Engineering

Select 15 credits in the EE Curriculum so that there are no external prerequisites needed.

| Course Name                                 | Credits | Pre-Req                                                                                                                                        | Course Name                                              | Credits | Pre-Req                                                                                          |
|---------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------|
| <b>EENG 281 – Electrical Circuits II</b>    | 3       | Pre-Req: Take one course in each group: Group 1 (EENG 211 or EENG 212) and Group 2 (CSCI 180 or CSCI 185 or CSCI 210). Co-requisite: MATH 320. | <b>EENG 341 – Signal &amp; Systems</b>                   | 3       | Pre-Req: EENG 281                                                                                |
| <b>EENG 310 – Electronics II</b>            | 3       | Pre-Req: EENG 270<br>Co-requisite: EENG 281                                                                                                    | <b>EENG 360 – Electronics Laboratory III</b>             | 1       | Pre-Req: Take EENG 310, EENG 315, and one course in this group: WRIT 315 or WRIT 316 or FCWR 304 |
| <b>EENG 315 – Electronics Laboratory II</b> | 1       | Pre-Req: EENG 270, EENG 275                                                                                                                    | <b>EENG 371 – Microprocessors &amp; Embedded Systems</b> | 3       | Pre-Req: CSCI 155                                                                                |
| <b>EENG 320 – Control Systems</b>           | 3       | Pre-Req: EENG 260 or EENG 280 or EENG 281                                                                                                      | <b>EENG 382 – Random Signals &amp; Statistics</b>        | 3       | Pre-Req: EENG 340 or EENG 341                                                                    |
| <b>EENG 330 – Electromagnetic Theory I</b>  | 3       | Pre-Req: MATH 320, PHYS 180                                                                                                                    | <b>EENG 401 – Communication Theory</b>                   | 3       | Pre-Req: EENG 340 or EENG 341<br>Co-requisite: EENG 382                                          |

### Mechatronic Engineering

Take the following 16 credits for this concentration.

| Course Name                                 | Credits | Pre-Req                                                                                                                                        | Course Name                            | Credits | Pre-Req                                   |
|---------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------|-------------------------------------------|
| <b>MENG 370 – Machine Design</b>            | 3       | Pre-Req: MENG 221                                                                                                                              | <b>EENG 320 – Control Systems</b>      | 3       | Pre-Req: EENG 260 or EENG 280 or EENG 281 |
| <b>MENG 450 – Mechatronic System Design</b> | 4       | Pre-Req: MENG 324, MENG 370, EENG 211 OR EENG 212                                                                                              | <b>EENG 341 – Signal &amp; Systems</b> | 3       | Pre-Req: EENG 281                         |
| <b>EENG 281 – Electrical Circuits II</b>    | 3       | Pre-Req: Take one course in each group: Group 1 (EENG 211 or EENG 212) and Group 2 (CSCI 180 or CSCI 185 or CSCI 210). Co-requisite: MATH 320. |                                        |         |                                           |