

## Mechanical Engineering Concentration Model Program

### First Year

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|--------------------|--------------------------|---|------------------------------|---|
| <b>Fall (16)</b>   | <input type="checkbox"/> | 4 | Chemistry 103                | General Chemistry (F)                             |
|                    | <input type="checkbox"/> | 2 | Engineering 101              | Intro to Engineering Design (F)                   |
|                    | <input type="checkbox"/> | 2 | Engineering 181              | Graphical Communication Lab (F)                   |
|                    | <input type="checkbox"/> | 4 | Mathematics 171              | Calculus I (F,S)                                  |
|                    | <input type="checkbox"/> | 3 | <i>English 101</i>           | <i>Written Rhetoric</i>                           |
|                    | <input type="checkbox"/> | 1 | Interdisciplinary 149        | First Year Prelude                                |
| <b>INT</b>         | <input type="checkbox"/> | 3 | <i>Interdisciplinary 150</i> | <i>Developing the Christian Mind</i>              |
| <b>Spring (17)</b> | <input type="checkbox"/> | 4 | Engineering 106              | Engineering Chemistry and Materials Science (S)   |
|                    | <input type="checkbox"/> | 4 | Mathematics 172              | Calculus II (F,S)                                 |
|                    | <input type="checkbox"/> | 4 | Physics 133                  | Introductory Physics, Mechanics and Gravity (F,S) |
|                    | <input type="checkbox"/> | 4 | <i>History 151 or 152</i>    | <i>History of the West and the World</i>          |
|                    | <input type="checkbox"/> | 1 | <i>Health and Fitness</i>    | <i>(PER 101-112)</i>                              |

This worksheet is for students entering Calvin in the Fall of 2009 or later.

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|--------------------|--------------------------|---|--|--|
| <b>Fall (16)</b>   | <input type="checkbox"/> | 4 | Engineering 202  | Statics and Dynamics (F,S)   |
|                    | <input type="checkbox"/> | 3 | Mathematics 270  | Multivariable Calculus (F,S)   |
|                    | <input type="checkbox"/> | 4 | Physics 235  | Introductory Physics: Electricity and Magnetism (F)                            |
|                    | <input type="checkbox"/> | 2 | <i>Mathematics 241</i>   | <i>Engineering Statistics (F)</i>  |
|                    | <input type="checkbox"/> | 3 | <i>Religion 121 or 131</i>   | <i>Biblical Literature/Christian Theology</i>                                  |
|                    | <input type="checkbox"/> | 0 | Engineering 295  | Internship Workshop  |
| <b>INT</b>         | <input type="checkbox"/> | 3 | Free Elective (or consider taking <i>IDIS 103 here in place of IDIS 102</i> later) |  |
| <b>Spring (17)</b> | <input type="checkbox"/> | 4 | Engineering 209  | Intro to the Laws of Conservation & Thermodynamics (F,S)                       |
|                    | <input type="checkbox"/> | 4 | Engineering 204  | Intro to Circuit Analysis and Electronics with Lab (F,S)                       |
|                    | <input type="checkbox"/> | 4 | Mathematics 231  | Differential Equations with Linear Algebra (F,S)                               |
|                    | <input type="checkbox"/> | 3 | <i>Economics 151 or 221</i>  | <i>Principles of Economics/Principles of Microeconomics</i>                    |
|                    | <input type="checkbox"/> | 2 | Computer Science 104   | Applied C++ (S) (CS 106 or 108 may be substituted but both are 4 credit hours) |
|                    | <input type="checkbox"/> | 0 | Engineering 294  | Seminar  |

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|--------------------|--------------------------|---|--|---|
| <b>Fall (17)</b>   | <input type="checkbox"/> | 4 | Engineering 305  | Mechanics of Materials (F)                                |
|                    | <input type="checkbox"/> | 4 | Engineering 319  | Intro. To Thermal/Fluid Sciences (F)                      |
|                    | <input type="checkbox"/> | 4 | Elective: <i>Basic Science</i> or <i>Advanced Math</i> |   |
|                    | <input type="checkbox"/> | 3 | <i>The Arts</i>  | <i>See Core Curriculum section of catalog for options</i> |
|                    | <input type="checkbox"/> | 2 | <i>IDIS 102</i>  | <i>Oral Rhetoric for Engineers (F,S)</i>                  |
| <b>INT</b>         | <input type="checkbox"/> | 3 | <i>Cross-Cultural Engagement</i>                       |   |
| <b>Spring (16)</b> | <input type="checkbox"/> | 4 | Engineering 322  | Machine Design (S) with Finite Element Analysis           |
|                    | <input type="checkbox"/> | 4 | Engineering 328  | Intermediate Thermal/Fluid Sciences & Design (S)          |
|                    | <input type="checkbox"/> | 3 | Engineering 334  | Dynamics of Machinery (S)                                 |
|                    | <input type="checkbox"/> | 1 | Engineering 382  | Engineering Instrumentation Laboratory (S)                |
|                    | <input type="checkbox"/> | 1 | <i>Health and Fitness</i>                              | <i>(PER 120-159) (or during interim)</i>                  |
|                    | <input type="checkbox"/> | 3 | <i>Philosophy 153</i>                                  | <i>Fundamental Questions in Philosophy</i>                |

**Note to HONORS Students ENGR 385 or 387**  
is required of all students seeking to graduate with honors. Talk to your advisor or consult the catalog about details.

### Fourth Year

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|--------------------|--------------------------|---|---|--|
| <b>Fall (15)</b>   | <input type="checkbox"/> | 4 | Engineering 333   | Thermal Systems Design (F)   |
|                    | <input type="checkbox"/> | 2 | Engineering 339   | Senior Design Project (F)  |
|                    | <input type="checkbox"/> | 3 | <i>Literature</i>   | <i>See Core Curriculum section of catalog for options</i>          |
|                    | <input type="checkbox"/> | 4 | Elective: <i>Basic Science</i> or <i>Advanced Math</i> or <i>Engr. Elective</i> |  |
|                    | <input type="checkbox"/> | 2 | Business 357  | Business Aspects for Engineers (F)                                 |
| <b>INT</b>         | <input type="checkbox"/> | 3 | Engineering Special Topics Elective   |  |
| <b>Spring (16)</b> | <input type="checkbox"/> | 4 | Engineering 324   | Materials & Processes in Manufacturing (S)                         |
|                    | <input type="checkbox"/> | 4 | Engineering 340   | Senior Design Project (S)  |
|                    | <input type="checkbox"/> | 4 | <i>Engineering 314 or 315</i>   | <i>Vibrations Analysis or Control Systems</i>                      |
|                    | <input type="checkbox"/> | 3 | Free Elective   |  |
|                    | <input type="checkbox"/> | 1 | <i>Health and Fitness</i>   | <i>(PER 160-189) (or during interim)</i>                           |
|                    | <input type="checkbox"/> | 0 | Engineering 394   | Engineering Seminar (For students admitted for fall 2009 or later) |

*Pink listings (core courses) may be swapped as long as ALL are completed.*  
See Elective Options sheet for elective courses highlighted in *green, red, orange, and blue.*

#### Other Requirements

- 0-8 Foreign Language (2 years of high school or one year of college)*

**CALVIN**  
**Engineering**