

Associate in Pre-Engineering - Civil and Mechanical Engineering Emphasis, A.P.E.

The pre-engineering program at UVU has been created for students who plan to complete the first two to three years of their engineering education at the ABET accredited UVU, then either continue at UVU or transfer to a baccalaureate university to complete their engineering degree. With adequate planning, pre-engineering coursework completed at UVU will be sufficient for students to remain at UVU or to transfer to all of the Utah universities with baccalaureate engineering degrees. All students who declare pre-engineering as their major are automatically accepted into pre-engineering status. After completion of the pre-engineering program at UVU, the student applies for professional status at UVU or at an institution of the student's choice.

Program Requirements

| Code | Title | Credit Hours |
|---|---|-------------------|
| Total Credit Hours | | 69 |
| Associate in Pre-Engineering Requirements | | 44 Credits |
| Complete the requirements | | 44 |
| Emphasis Requirements | | 25 Credits |
| ENGR 2010 | Engineering Statics | 3 |
| ENGR 2030 | Engineering Dynamics | 3 |
| ENGR 2140 | Mechanics of Materials | 3 |
| or ENGR 2160 | Introduction to Materials Science and Engineering | |
| or ENGR 2450 | Computational Methods for Engineering Analysis | |
| Emphasis Elective Requirements | | |
| Students should carefully select electives from the following list, based on the engineering discipline (Civil or Mechanical) they are interested in and the college or university they want to attend to finish their BS degree. See your advisor. | | 16 |
| ECE 1000 | Introduction to Electrical and Computer Engineering (undefined) | |
| ECE 2210 | Fundamentals of Electric Circuit Analysis (3) | |
| EGDT 1040 | Fundamentals of Technical Engineering Drawing (3) | |
| EGDT 1071 | 3 Dimensional Modeling--Solidworks (3) | |
| EGDT 1400 | Surveying Applications and Field Techniques I (3) | |
| ENGR 1000 | Introduction to Engineering WE (3) | |
| ENGR 1020 | Survey of Engineering (1) | |
| ENGR 2140 | Mechanics of Materials (3) | |
| ENGR 2160 | Introduction to Materials Science and Engineering (3) | |
| ENGR 2300 | Engineering Thermodynamics (3) | |
| ENGR 2450 | Computational Methods for Engineering Analysis (3) | |
| MATH 2210 | Calculus III (4) | |
| MATH 2250 | Differential Equations and Linear Algebra (4) | |
| or | | |
| MATH 2270 & MATH 2280 | Linear Algebra and Ordinary Differential Equations (6) | |

Graduation Requirements

1. Completion of a minimum of 69 semester credits.
2. Overall grade point average of 2.0 (C) or above. 2.5 or above in Math, Science, and Engineering
3. Residency hours -- minimum of 20 credit hours through course attendance at UVU.
4. Completion of GE and specified departmental requirements.

Graduation Plan

This graduation plan is a sample plan and is intended to be a guide. Your specific plan may differ based on your Math and English placement and/or transfer credits applied. You are encouraged to meet with an advisor and set up an individualized graduation plan in Wolverine Track (<http://www.uvu.edu/wolverinetrack/>).

First Year

| Semester 1 | | Credit Hours |
|------------------------------|---|--------------|
| ENGR 1030 | Engineering Programming | 3 |
| American Institutions Course | | 3 |
| Social/ Behavioral Science | | 3 |
| ENGL 1010 or ENGH 1005 | Introduction to Academic Writing CC or Literacies and Composition Across Contexts CC | 3 |
| Humanities | | 3 |

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|---------------------|-----------|
| Credit Hours | 15 |
|---------------------|-----------|

Semester 2

| | | |
|-----------|--------------------------------------|---|
| MATH 1210 | Calculus I QL | 4 |
| CHEM 1210 | Principles of Chemistry I PP | 4 |
| CHEM 1215 | Principles of Chemistry I Laboratory | 1 |
| ENGL 2010 | Intermediate Academic Writing CC | 3 |
| Biology | | 3 |

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|---------------------|-----------|
| Credit Hours | 15 |
|---------------------|-----------|

Second Year

Semester 3

| | | |
|-----------|--|---|
| MATH 1220 | Calculus II | 4 |
| PHYS 2210 | Physics for Scientists and Engineers I PP | 4 |
| PHYS 2215 | Physics for Scientists and Engineers I Lab | 1 |
| ENGR 2010 | Engineering Statics | 3 |

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|---------------------|-----------|
| Credit Hours | 12 |
|---------------------|-----------|

Semester 4

| | | |
|-----------|---|---|
| PHYS 2220 | Physics for Scientists and Engineers II PP | 4 |
| PHYS 2225 | Physics for Scientists and Engineers II Lab | 1 |
| ENGR 2140 | Mechanics of Materials | 3 |
| ENGR 2030 | Engineering Dynamics | 3 |
| Elective | | 3 |

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|---------------------|-----------|
| Credit Hours | 14 |
|---------------------|-----------|

Third Year

Semester 5

| | | |
|----------|--|---|
| Elective | | 4 |
| Elective | | 3 |
| Elective | | 3 |
| Elective | | 3 |

| | |
|---------------------|-----------|
| Credit Hours | 13 |
|---------------------|-----------|

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|---------------------------|-----------|
| Total Credit Hours | 69 |
|---------------------------|-----------|

Program Learning Outcomes

1. Ability to apply knowledge of mathematics, science, and engineering.
2. Know the basic knowledge and fundamental principles of engineering.
3. Be able to apply these principles to solving various engineering problems.
4. Value mathematics, science, and their application in engineering design.