NORTHERN ARIZONA UNIVERSITY
College of Engineering, Forestry & Natural Sciences

# Bachelor of Science in Engineering
# MECHANICAL ENGINEERING
2009-2010 Undergraduate Catalog
## Degree Progression Plan

| Freshman Year | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1st term | | | | 2nd term | | | |
| EGR 186 | Introduction to Engineering Design | 3 | | MAT 137 | Calculus II (FNRQ) | 4 | |
| ENG 105 | Critical Reading and Writing (FNRQ) | 4 | | ME 180 | Computer Aided Design | 2 | |
| MAT 136 | Calculus I (SCI: SAS) | 4 | | CHM 151 | General Chemistry I (SCI: SAS) | 4 | |
| PHY 161 | University Physics I and Lab (SCI: LAB) | 4 | | CHM 151L | General Chemistry I Lab | 1 | |
| NAU 100 | Transition to College | 1 | | PHY 262 | University Physics II (SCI: SAS) | 3 | |
| | | | | *LS* | Liberal Studies | 3 | |
| | Total units | 16 | | | Total units | 17 | |

| Sophomore Year | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3rd term | | | | 4th term | | | |
| EGR 286 | Engineering Design: Process | 3 | | ME 252 | Applied Mechanics: Dynamics | 3 | |
| EE 188 | Electrical Engineering I | 3 | | CENE 253 | Mechanics of Materials | 3 | |
| EE 188L | Electrical Engineering I Lab | 1 | | CENE 253L | Mechanics of Materials lab | 1 | |
| CENE 251 | Applied Mechanics: Statics | 3 | | ME 291 | Thermodynamics | 3 | |
| MAT 238 | Calculus III | 4 | | MAT 239 | Differential Equations | 3 | |
| *LS/DIV* | Liberal Studies/Diversity * | 3 | | *LS* | Liberal Studies | 3 | |
| | Total units | 17 | | | Total units | 16 | |

| Junior Year | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5th term | | | | 6th term | | | |
| ME 340 | Materials Science | 3 | | ME 386 | Machine Design | 3 | |
| ME 395 | Fluid Mechanics | 3 | | ME 392 | Thermodynamics II | 3 | |
| CENE 225 | Engineering Analysis | 3 | | MAT 362 | Numerical Methods | 3 | |
| CS 122 | Programming for Engineering & Science (SCI: SAS) | 3 | | ENG 302W or ENG 305W | Technical Writing or Writing in Disciplinary Communities | 3 | |
| *CS 122L* | Programming for Engineering & Science Lab | 1 | | | | | |
| *LS* | Liberal Studies | 3 | | *DE* | Depth Elective ** | 3 | |
| | Total units | 16 | | | Total units | 15 | |

| Senior Year | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7th term | | | | 8th term | | | |
| ME 476C | Mechanical Engineering Design I | 3 | | ME 486C | Mechanical Engineering Design II | 3 | |
| ME 495 | Thermal Laboratory | 3 | | *DE* | Depth Elective ** | 3 | |
| *ME 350* | Heat Transfer | 3 | | *BE* | Breadth Elective *** | 3 | |
| *DE* | Depth Elective ** | 3 | | *BE* | Breadth Elective *** | 3 | |
| *BE* | Breadth Elective *** | 3 | | *LS* | Liberal Studies | 3 | |
| *LS/DIV* | Liberal Studies/Diversity* | 3 | | | | | |
| | Total units | 18 | | | Total units | 15 | |

Liberal Studies Distribution blocks

| AHI (6 units) | SPW (6 units) | CU (6 units) | Science (7 units) | Additional 3 units to reach 35 total |
|---|---|---|---|---|
| | | | PHY 161 (4) | |
| | | | PHY 262 (3) | CHM 151 (4) |



Revised 2/18/2009

## PROGRAM INFORMATION

A minimum of 129 units are required for this degree.

You can not have more than two grades of D in your engineering and computer science courses.

* Take a Liberal Studies course that also satisfies a Diversity requirement.

**Depth electives include 9 units from the following lists or 300-400 level engineering courses with approval from your advisor. It is encouraged that you select course from only one of the two areas.

- Mechanical design: CENE 476 or 377; EE 325 or 458; ME 454, 455, 467 , 482 or 484
- Fluid & thermal sciences: CENE 430 or 480; EE 325 or 458; ME 441, 442, 451 or 454
- You can also use 500-level courses as depth electives, if you meet the pre-requisites and have advisor approval

*** Breadth electives include 9 additional units of upper-division courses in engineering, natural sciences, business or mathematics as approved by your academic advisor.

## GENERAL INFORMATION

- This degree progression plan is to be used in conjunction with the academic catalog and degree progress report.
- Students should see an academic advisor regularly to confirm their academic progress.
- Students must see an academic advisor before enrollment for the 7th term in preparation for graduation.
- Many courses have pre-requisites. Please check the academic catalog for pre-requisite and placement information.
- Submit graduation application during 7th term.
- Honors students complete different requirements to meet NAU's liberal studies program. Students should consult an Honors Program advisor for complete information on fulfilling Honors Liberal Studies requirements.
- All students are required to complete at least 120 total units which includes:
  - 35 units of liberal studies courses: http://www4.nau.edu/aio/Articulation/LScourselist.htm
  - 6 units of diversity courses (3 units in Global & 3 units in Ethnic). The diversity requirement may be fulfilled in any part of the program of study: http://www4.nau.edu/aio/Articulation/DiversityCourseList.htm
  - 30 units of upper division courses (300-400 level), 18 of these units must be taken at NAU
- English placement: http://www.nau.edu/comp/placement.html
- Math placement: http://www.cefns.nau.edu/Academic/Math/studentInformation/Placement/Placement.shtml

## CONTACT INFORMATION

Engineering Programs
Building 69, Room 122A
Phone: 928-523-5251
Department Chair: Ernesto Penado
Phone: 928-523-9453
Email: Ernesto.Penado@nau.edu

Debbie Wildermuth
Academic Services Coordinator
College of Engineering, Forestry & Natural Sciences
Building 21, Room 102
Phone: 928-523-3842
Email: Debbie.Wildermuth@nau.edu