

**2015-2016 Degree Map-Bachelor of Science in Mechanical Engineering**

This map is a term-by-term sample course schedule. The milestones listed to the right of each term are designed to keep you on course to graduate in four years. The Sample Schedule serves as a general guideline to help you build a full schedule each term. See course descriptions and prerequisites at <http://www.atu.edu/academics/catalog/>.

**Possible careers include:** Mechanical engineering is one of the broadest engineering disciplines. Mechanical engineers design, develop, build, and test mechanical and thermal systems. These systems include mechanical devices such as tools, engines, and machines, and thermal devices including steam power plants, heating, ventilation and air-conditioning systems (HVAC), and pumping systems.

#Remedial Courses (if applicable): ENGL 0303 \_\_\_\_\_ ENGL 0404 \_\_\_\_\_ READ 0103 \_\_\_\_\_ MATH 0903 \_\_\_\_\_

**Sample Schedule**

| Semester 1  | Hrs.      | Grade      | Milestones/Notes                       | Semester 1 |
|---|-----------|------------|--|------------|
| ENGL 1013-Comp I (ACTS=ENGL 1013)                     | 3         | #          |  |            |
| Fine Arts & Humanities                                | 3         |            |  |            |
| MATH 2914- Calculus I (ACTS= MATH 2405)               | 4         |            | #C or > required for Gen Ed. Milestone |            |
| CHEM 2124/2120- General Chemistry I (ACTS= CHEM 1414) | 4         |            | Milestone                              |            |
| MCEG 1012- Introduction to Engineering                | 2         |            |  |            |
| <b>Total hours</b>                                    | <b>16</b> | <b>GPA</b> |  |            |

| Semester 2  | Hrs.      | Grade      | Milestones/Notes | Semester 2 |
|---|-----------|------------|------------------|------------|
| ENGL 1023- Comp II (ACTS= ENGL 1023)                | 3         | #          |                  |            |
| PHYS 2114/2000- General Physics I (ACTS= PHYS 2034) | 4         |            | Milestone        |            |
| MATH 2924- Calculus II (ACTS= MATH 2505)            | 4         |            | Milestone        |            |
| MCEG 1002- Engineering Graphics                     | 2         |            |                  |            |
| MCEG 2023- Engineering Materials                    | 3         |            |                  |            |
| <b>Total hours</b>                                  | <b>16</b> | <b>GPA</b> |                  |            |

| Semester 3   | Hrs.      | Grade      | Milestones/Notes | Semester 3 |
|--|-----------|------------|------------------|------------|
| CHEM 2134/2130- General Chemistry II (ACTS= CHEM1424) OR PHYS 2124/2010- General Physics II (ACTS= PHYS2044) | 4         |            |                  |            |
| MATH 2934- Calculus III (ACTS= MATH 2603)  | 4         |            | Milestone        |            |
| MCEG 2013- Statics   | 3         |            | Milestone        |            |
| MCEG 2203- Computational Methods in Engineering  | 3         |            |                  |            |
| <b>Total hours</b>   | <b>14</b> | <b>GPA</b> |                  |            |

| Semester 4                          | Hrs.      | Grade      | Milestones/Notes                     | Semester 4                   |
|-------------------------------------|-----------|------------|--------------------------------------|------------------------------|
| Social Sciences                     | 3         |            |                                      |                              |
| ELEG 2103- Electrical Circuits I    | 3         |            | Must take in sequence with ELEG 2113 |                              |
| MATH 3243- Differential Equations I | 3         |            | Milestone                            |                              |
| MCEG 2033- Dynamics                 | 3         |            | Milestone                            |                              |
| MCEG 3013- Mechanics of Materials   | 3         |            | Milestone                            |                              |
| <b>Total hours</b>                  | <b>15</b> | <b>GPA</b> |                                      | <b>MCEG ADVISOR ASSIGNED</b> |

The Arkansas Course Transfer System (ACTS) is designed to assist in planning the academic progress of students. This system contains information about the transferability of courses within Arkansas public colleges and universities. The Arkansas Course Transfer System can be accessed at <http://acts.adhe.edu/>

| Fine Arts and Humanities                                | U.S. History & Government                                 |
|---|---|
| ART 2123 Experiencing Art (ACTS=ARTA 1003)              | HIST 1903 Survey of American History                      |
| MUS 2003 Intro to Music (ACTS=MUSC 1003)                | HIST 2003 United States History to 1877 (ACTS=HIST2113)   |
| TH 2273 Intro to Theatre (ACTS =DRAM 1003)              | HIST 2043 Honors United States History to 1877            |
| ENGL 2173 Intro to Film                                 | HIST 2013 United States History from 1877 (ACTS=HIST2123) |
| JOUR 2173 Intro to Film                                 | POLS 2003 American Government (ACTS=PLSC2003)             |
| ENGL 2003 Intro to World Literature (ACTS=ENGL 2113)    |   |
| ENGL 2013 Intro to American Literature (ACTS=ENGL 2653) |   |
| ENGL 2023 Honors World Literature                       |   |
| PHIL 2003 Intro to Philosophy (ACTS=PHIL 1103)          |   |
| PHIL 2043 Honors Introduction to Philosophy             |   |

Prerequisites (if applicable): MATH 1914 (ACTS=MATH1305) \_\_\_\_\_ OR MATH 1203 (ACTS=MATH1203) \_\_\_\_\_

**Sample Schedule**

| Semester 5                                   | Hrs.      | Grade      | Milestones/Notes                         | Semester 5 |
|--|-----------|------------|--|------------|
| ELEG 2113- Electrical Circuits II            | 3         |            | Must be taken in sequence with ELEG 2103 |            |
| MCEG 3313- Thermodynamics I                  | 3         |            | Milestone                                |            |
| MCEG 3413- Fundamentals of Mechanical Design | 3         |            | Milestone                                |            |
| MCEG 3442- Mechanical Laboratory I           | 2         |            |  |            |
| Engineering Elective (3000-4000 level)       | 3         |            |  |            |
| <b>Total hours</b>                           | <b>14</b> | <b>GPA</b> |  |            |

| Semester 6                                    | Hrs.      | Grade      | Milestones/Notes | Semester 6                  |
|---|-----------|------------|------------------|-----------------------------|
| Fine Arts & Humanities                        | 3         |            |                  |                             |
| MATH Elective (department approval required)  | 3         |            |                  |                             |
| MCEG 4403- Mechanics of Fluids and Hydraulics | 3         |            |                  |                             |
| MCEG 4423- Machine Component Design           | 3         |            |                  |                             |
| Engineering Elective (3000-4000 level)        | 3         |            |                  |                             |
| <b>Total hours</b>                            | <b>15</b> | <b>GPA</b> |                  | <b>APPLY FOR GRADUATION</b> |

| Semester 7  | Hrs.      | Grade      | Milestones/Notes | Semester 7 |
|---|-----------|------------|------------------|------------|
| U.S. History/Government                             | 3         |            |                  |            |
| MCEG 3003 or ELEG 3003- Modeling and Design         | 3         |            | Milestone        |            |
| MCEG 4202 or ELEG 4202- Engineering Design          | 2         |            |                  |            |
| MCEG 4433- Thermodynamics II                        | 3         |            |                  |            |
| Technical Elective (departmental approval required) | 3         |            |                  |            |
| <b>Total hours</b>                                  | <b>14</b> | <b>GPA</b> |                  |            |

| Semester 8                                 | Hrs.      | Grade      | Milestones/Notes | Semester 8  |
|--|-----------|------------|------------------|---|
| MCEG 4493: Mechanical Design Project       | 3         |            | Milestone        |   |
| MCEG 4442- Mechanical Laboratory II        | 2         |            |                  |   |
| MCEG 4443- Heat Transfer                   | 3         |            |                  |   |
| ELEG 4303- Control Systems                 | 3         |            |                  |   |
| Engineering Lab Elective (3000-4000 level) | 2         |            |                  |   |
| Engineering Elective (4000 level)          | 3         |            |                  |   |
| <b>Total Hours</b>                         | <b>16</b> | <b>GPA</b> |                  | <b>Graduation Requirements:</b><br>Min. hours 3000-4000 level courses: 40<br>No more than 4 PE activity hours<br>Min. hours required:120<br>2.00+ GPA |

General Electives: 0

# indicates a "C" or better is required

| HIST  | Social Sciences                                       |
|---|---|
| HIST 1503 World Civilization to 1500 (ACTS=HIST1113)    | ECON 2103 Honors Principles of Economics I            |
| HIST 1513 World Civilization since 1500 (ACTS=HIST1123) | ECON 2013 Principles of Economics II (ACTS=ECON 2203) |
| HIST 1543 Honors World Civilization to 1500             | SOC 1003 Intro Sociology (ACTS=SOCI 1013)             |
| HIST 2003 U.S. History to 1877 (ACTS=HIST2113)          | PSY 2003 General Psychology (ACTS=PSYC 1103)          |
| HIST 2013 U.S. History since 1877 (ACTS=HIST2123)       | ANTH 1213 Intro to Anthropology (ACTS=ANTH 1013)      |
| HIST 2043 Honors U.S. History to 1877                   | ANTH 2003 Cultural Anthropology (ACTS=ANTH 2013)      |
| HIST 1903 Survey of American History                    | GEOG 2013 Rgnl Geog of the World (ACTS=GEOG 2103)     |
| POLS 2003 American Government (ACTS=PLSC2003)           | AMST 2003 American Studies                            |
| ECON 2003 Principles of Economics I (ACTS=ECON2103)     | AGBU 2063 Prin Agri Macroeconomics                    |
| ECON 2103 Honors Principles of Economics I              | AGBU 2073 Prin Agri Microeconomics                    |