**Amarillo College Curriculum Map Template**

**Division:** STEM **Degree/Academic Program(s):** AS Engineering – ENGR.AS.GEN **Person Responsible for Division:** Dan Ferguson, Dean **Component Director/Chair:** Collin Witherspoon **Submission Date:** Fall 2015

**Purpose Statement:** The Engineering Department is dedicated to providing students with a sound foundation in engineering in order to successfully complete a bachelor’s degree at a transfer university or college.

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| **Goal #1:** To graduate students who demonstrate content knowledge and skills from several foundational areas of engineering. | | | | | |
| **Program-Specific Courses** | **PLO #1:**  Students will solve problems by identifying and applying core concepts of Statics. | **PLO #2:**  Students will solve problems by identifying and applying core concepts of Dynamics. | **PLO #3:**  Students will solve problems by identifying and applying core concepts of Electrical Circuits. | **PLO #4:**  Students will solve problems by identifying and applying core concepts of Mechanics of Materials. | **PLO #5:**  Students will be able to make appropriate use of technology in solving engineering problems. |
| **ENGR-1304** |  |  |  |  | **D** |
| **ENGR-1371** |  |  |  |  | **I** |
| **ENGR-2301** | **I** |  |  |  | **D** |
| **ENGR-2302** | **D** | **I** |  |  | **D** |
| **ENGR-2304** |  |  |  |  | **D** |
| **ENGR-2305** |  |  | **I** |  | **D** |
| **ENGR-2332** | **D** |  |  | **I** | **D** |

**I = Introduced; D = Developed & Practiced with Feedback; M = Demonstrated at Mastery**

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| **Goal #2:** To graduate students who demonstrate the mathematical content knowledge and skills from several foundational areas of mathematics and understand how the knowledge relates to engineering. | | | | |
| **Program-Specific Courses** | **PLO #1:**  Students will identify and apply core concepts of College Algebra in relation to solving engineering problems. | **PLO #2:**  Students will identify and apply core concepts of Trigonometry in relation to  solving engineering problems. | **PLO #3:**  Students will identify and apply core concepts of Differential and Integral Calculus in relation to solving engineering problems. | **PLO #4:**  Students will identify and apply core concepts of Differential Equations in relation to solving engineering problems. |
| **MATH-1414** | **D** |  |  |  |
| **MATH-1316** | **D** | **I** |  |  |
| **MATH-2413** | **M** | **D** | **I** | **I** |
| **MATH-2414** |  | **M** | **D** | **D** |
| **MATH-2415** |  |  | **D** |  |
| **MATH-2320** |  |  | **M** | **D** |

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| **Goal #3:** To graduate students who demonstrate content knowledge and skills from several foundational areas in science and understand how the knowledge relates to engineering. | | | |
| **Program-Specific Courses** | **PLO #1:**  demonstrate understanding of core concepts of Classical Mechanics | **PLO #2:**  demonstrate understanding of core concepts of Electricity and Magnetism | **PLO #3:**  demonstrate understanding of core concepts of Chemistry |
| **PHYS-2425** | **I** |  |  |
| **PHYS-2426** |  | **I** |  |
| **CHEM-1311** |  |  | **I** |
| **ENGR-2301** | **D** |  |  |
| **ENGR-2302** | **D** |  |  |
| **ENGR-2305** |  | **D** |  |
| **ENGR-2332** | **D** |  | **D** |

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| **Goal #4:** To graduate students who understand the collaborative nature of the engineering profession. | | | | |
| **Program-Specific Courses** | **PLO #1:**  Students will articulate why collaboration is necessary in the engineering profession. | **PLO #2:**  Students will interact with others in a professional manner. | **PLO #3:**  Students will demonstrate that they can effectively engage in teamwork on group projects. | **PLO #4:**  Students will objectively measure other team member’s productivity and effectiveness on group projects. |
| **ENGR-1371** | **I** | **I** | **D** | **D** |
| **ENGR-2301** | **D** | **D** | **D** | **D** |
| **ENGR-2302** | **D** | **D** | **D** | **D** |
| **ENGR-2304** |  | **D** | **D** | **D** |
| **ENGR-2305** |  |  | **D** | **D** |
| **ENGR-2332** |  |  | **D** | **D** |

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