Academic Program Assessment Plan – A.S. Pre-Engineering

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Department** | Math, Science, and Engineering | | | | **Degree/Type** | | **Associates of Science** | **Date Submitted** | | | October 18, 2017 |
| **UNM Essential Learning Goals** | | | | | | | | | | | |
| UNM has established the following essential learning goals for all UNM students: University of New Mexico students will develop the following aptitudes and habits of mind in the course of their general and major study at UNM   * KNOWLEDGE of human cultures and the natural world, gained through study in the sciences and mathematics, social sciences, humanities, histories, languages and the arts. * SKILLS, both intellectual and applied, demonstrated in written and oral communication, inquiry and analysis, critical and creative thinking, quantitative literacy, information literacy, performance, teamwork and problem solving. * RESPONSIBILITY, both personal and social, that will be manifested in civic knowledge and engagement, multicultural knowledge and competence, ethical reasoning and action, and foundations and skills for lifelong learning. | | | | | | | | | | | |
| **Contact Person (name, title, email)** | | Irina Alvestad, Division Chair of Math, Science and Engineering, [irina@unm.edu](mailto:irina@unm.edu) | | | | | Date reviewed by CARC | | October 18, 2017 | | |
| **Assessment Cycle (1-year/2-year/3-year)** | | This is a two-year degree but will be assessed yearly. | | | | | | | | | |
| **Program Goal #1** | | **Students who complete the program should have a basic knowledge of scientific principles, demonstrate beginning critical thinking and communication skills, and have a foundation in math skills for transferring into an engineering Bachelor’s degree.** | | | | | | | | | |
| **Student Learning Outcomes**  **(In each row enter an SLO targeted at this Program Goal)** | | | **Year of cycle in which this outcome will be assessed.** | **UNM Essential Learning Goal (Knowledge, Skills, Responsibility)** | | **Assessment Measure including Direct/ Indirect (Provide a description of the assessment instrument used; include the course AND if it was direct or indirect)** | | | | **Performance Benchmark (State the ‘criteria for success’ or performance target for meeting the SLO, i.e., at least 70% of students will perform with score of 70 or better)** | |
| **Student Learning Outcome** | | | **Year of Cycle** | **UNM Essential Learning Goal** | | **Assessment Measure** | | | | **Performance Benchmark** | |
| Students will prepare spreadsheets using appropriate software | | | Year 1 course  (offered every semester) | Knowledge  skills | | Course: **CS 150L: Computing for Business Students**  Direct Assessment:  (1) Specific questions on the Final Exam  NM Business Articulation Committee SLOs will be measured with these practice sets and final exam.  Faculty members will submit a summary and detailed report for each of these SLOs. | | | | Performance Target: 75% of students will perform with a score 75% or better. | |
| Students will be able to communicate clearly the steps to solve Calculus problems and demonstrate correct use of concepts and methods of Calculus. | | | Yearly | Knowledge  Skills | | **Course: MATH 162: Calculus I**  Direct Assessment: S Student success will be measured using key questions from a final exam. The instructor will write a course report. | | | | Performance Target: 75% of students will perform with a score 75% or better. | |
| Students will be able to apply principles of general chemistry to specific real world problems in environment, engineering and health-related fields. | | | Yearly | Skills  Knowledge  Responsibility | | **Course: CHEM 121 – General Chemistry I**  Direct Assessment: Student success will be measured using key questions from a final exam. The instructor will write a course report. | | | | Performance Target: 75% of students will perform with a score 75% or better. | |
| Students will be able, thorough understanding of manufacturing processes allows the engineer to consider these processes as they design, how to make the manufacturing of a product more efficient and cost effective. | | | Every 2 years | Skills  Knowledge | | **Course: ME 260: Mechanical Engineering Design II**  Direct Assessment: Student success will be measured using key questions from a final exam. The instructor will write a course report. | | | | Performance Target: 75% of students will perform with a score 75% or better. | |

An introduction to the art of computing. Not intended for Computer Science majors or minors. The objective of the course is an understanding of the relationship between computing and problem solving.