

## Program Outcomes for Science Engineering and Mathematics (SEM)

1. Apply laws of chemistry and stoichiometric rules to predict changes in temperature, volume and ionic compositional behavior;
  - a. This outcome will be evaluated by a final exam in Chemistry II (Mastery), Chemistry I (Introduced), and lab notes from Chemistry I & II (Reinforced);
    - i. The student will demonstrate *superior* competency in meeting the program outcome if performance exceeds the normal expectations for the degree requirements as demonstrated by a score above 90%;
    - ii. The student will demonstrate *satisfactory* competency in meeting the program outcome if performance meets the normal expectations of the degree requirements as demonstrated by a score between 80% - 70%;
    - iii. The student will demonstrate *improvement needed* in meeting the program outcome if performance is overall sufficient and many fundamental requirements have been carried out in an adequate manner. However, some learning objectives have not been realized as demonstrated by a score between 70% - 60%;
    - iv. The student does not demonstrate competency in meeting the program outcome as demonstrated by a score below 60%.
2. Apply the rules of trigonometry, differentiation and integration to quantify processes occurring in the natural world.
  - a. This outcome will be evaluated by a comprehensive final exam in Calculus III (Mastery), Calculus II (Reinforced), Calculus I (Introduced), Trigonometry (Introduced);
    - i. The student will demonstrate *superior* competency in meeting the program outcome if performance exceeds the normal expectations for the degree requirements as demonstrated by a score above 90%;
    - ii. The student will demonstrate *satisfactory* competency in meeting the program outcome if performance meets the normal expectations of the degree requirements as demonstrated by a score between 80% - 70%;
    - iii. The student will demonstrate *improvement needed* in meeting the program outcome if performance is overall sufficient and many fundamental requirements have been carried out in an adequate manner. However, some learning objectives have not been realized as demonstrated by a score between 70% - 60%;
    - iv. The student does not demonstrate competency in meeting the program outcome as demonstrated by a score below 60%.

3. Apply the rules of trigonometry, differentiation and integration to quantify processes occurring in the natural world.
  - b. This outcome will be evaluated by a comprehensive final exam in Calculus III (Mastery), Calculus II (Reinforced), Calculus I (Introduced), Trigonometry (Introduced);
    - i. The student will demonstrate *superior* competency in meeting the program outcome if performance exceeds the normal expectations for the degree requirements as demonstrated by a score above 90%;
    - ii. The student will demonstrate *satisfactory* competency in meeting the program outcome if performance meets the normal expectations of the degree requirements as demonstrated by a score between 80% - 70%;
    - iii. The student will demonstrate *improvement needed* in meeting the program outcome if performance is overall sufficient and many fundamental requirements have been carried out in an adequate manner. However, some learning objectives have not been realized as demonstrated by a score between 70% - 60%;
    - iv. The student does not demonstrate competency in meeting the program outcome as demonstrated by a score below 60%.
4. Demonstrate an understanding of Newtonian principals. This outcome will be evaluated by a final exam in Physics II (Reinforced), Physics II Lab (Reinforced), Physics I (Introduced),
  - v. The student will demonstrate *superior* competency in meeting the program outcome if performance exceeds the normal expectations for the degree requirements as demonstrated by a score above 90%;
  - vi. The student will demonstrate *satisfactory* competency in meeting the program outcome if performance meets the normal expectations of the degree requirements as demonstrated by a score between 80% - 70%;
  - vii. The student will demonstrate *improvement needed* in meeting the program outcome if performance is overall sufficient and many fundamental requirements have been carried out in an adequate manner. However, some learning objectives have not been realized as demonstrated by a score between 70% - 60%;
  - viii. The student does not demonstrate competency in meeting the program outcome as demonstrated by a score below 60%.