

Prepared by the Department of Natural Sciences & Life Fitness
Date of Departmental Approval: October 7, 2013
Date Approved by Curriculum and Programs: October 23, 2013

Effective: Spring 2014

1. **Course Number:** ENV105
Course Name: Quantitative Methods for Environmental Analysis
2. **Description:** Designed for environmental technology students. Emphasis is on mathematical skills essential in scientific applications. Mathematical and statistical skills using a scientific calculator and computer will be used to assess current environmental data sets. Conclusions will be drawn based on these data assessments.
3. **Student Learning Outcomes (instructional objectives; intellectual skills):**
Upon successful completion of this course, students are able to do the following:
 - Apply mathematical operations, scientific notation, metric measurements, unit conversions and basic statistics.
 - Analyze environmental data.
 - Compute mathematical and statistical applications using a scientific calculator and computer to assess environmental data sets.
 - Demonstrate proficiency in calculating areas, volumes, weights, densities, specific gravity, temperature conversions, pH readings and concentrations.
4. **Credits:** 3 credits
5. **Satisfies General Education Requirement:** No
6. **Prerequisite:** MAT030 or MAT035 or satisfactory basic skills assessment score
7. **Semester Offered:** Fall
8. **Suggested General Guidelines for Evaluation:** Exams, quizzes and final exam
9. **General Topical Outline:**
 - A. Review of Basic Skills
 1. Mathematical operations
 2. Exponents and scientific notation
 3. Measurements
 4. Units
 5. Basic statistics
 - B. Laboratory and Field Measurements and Calculations
 1. Areas
 2. Volumes
 3. Mass and Weight
 4. Density and Specific Gravity
 5. Temperature
 6. Heat
 7. pH
 8. Fluid flow
 9. Concentrations
 10. Dilutions
 11. Graphing
 12. Data Assessment
 - C. Spectroscopic Measurements and Calculations
 1. General Concepts
 2. Instrumentation