REGULAR COURSE SYLLABUS

College of: Professional Studies

Department: Engineering and Engineering Technology

Prefix & Course Number: SSE 2000  Crosslisted With*: ___

Course Title: Engineering Safety and Quality Assurance

Banner course title (30 characters): Eng Safety & Quality Assurance

Check All That Apply:  Required for Major: X  Required for Minor: ___ Specified Elective:

Required for Concentration: ___  Elective: ___  Service Course: ___

To receive Title IV financial aid funds, all institutions of higher education must comply with the federal definition of a credit hour. The Higher Learning Commission requires institutions to maintain policies and procedures for verifying compliance with this definition.

Federal Credit Hour Definition: A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than: (1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or (2) at least an equivalent amount of work as required in paragraph (1) of this definition for other activities as established by an institution, including laboratory work, internships, practica, studio work, and other academic work leading toward the award of credit hours. 34 CFR 600.2 (11/1/2010)

Credit Hours: 3 (3+0)

Face-to-Face or Equivalent Hours per course:

Lecture 45  Lab 0  Internship 0  Practicum 0  Other (please specify type and hours): ___

Additional Student Work Hours per course: 90

Schedule Type: L  Grade Mode: L

APPROVED:

Department Chair OR Program Director  Date

Dean OR Associate Dean  Date

Associate VP, Academic and Student Affairs  Date

*If crosslisted, attach completed Course Crosslisting Agreement Form
Prefix and Course Number: SSE 2000

Variable topics umbrella course: No X Yes _____ If Yes, number of credit hours allowed _____
Specified repeatable course: No X Yes _____

Prerequisite(s): None
Corequisite(s):
Prerequisite(s) or Corequisite(s):

Banner Enforced:
Prerequisite(s):
Corequisite(s):
Prerequisite(s) or Corequisite(s):

Registration restrictions: Level _____ Class _____ Program/Major _____ Student attribute _____

Catalog Course Description:
Students in this course are introduced to the fundamental engineering safety and quality assurance. In this course students will study the regulatory and professional aspects of occupational safety and focus on the fundamental engineering laws and ethics. Engineering practices are reinforced by requiring students to apply basic engineering principles to safety related problems. Students are also introduced to the scope and function of quality assurance, including basic definitions, statistics, quality policy and objectives, manuals and procedures, concept of variation, inspection and sampling techniques, metrology process control, methods and the elements of reliability. Current (TQM) and ISO 9000 standards are reviewed.

Required Reading and Other Materials will be equivalent to:

Specific, Measurable Student Behavioral Learning Objectives:
Upon completion of this course the student should be able to:
1. demonstrate understanding of professional and ethical responsibility of engineers
2. communicate public health and safety issues effectively in cross cultural communication
3. demonstrate understanding of the impact of engineering solutions in public health and safety, and societal context
4. recognize the need for, and an ability to engage in life-long learning of laws, regulations and standards related to engineering safety and health
5. demonstrate awareness of the knowledge of contemporary issues related to engineering safety and health
Prefix and Course Number: SSE 2000
6. demonstrate familiarity with quality control statistical techniques and responsibilities, as well as ISO 9000 Standards

**Detailed Outline of Course Content:**

I. The Importance of Public Safety and Health for Engineers
   A. Safety and Health Professions
   B. Fundamental Concepts And Terms

II. Laws, Regulations, and Standards
   A. Federal Agencies, Laws and Regulations
   B. Workers' Compensation
   C. Products Liability

III. Hazards and Their Control
   A. General Principles of Hazard Control
   B. Mechanics and Structures
   C. Electrical Safety
   D. Fire Protection And Prevention
   E. Chemicals
   F. Biohazards
   G. Hazardous Waste
   H. Emergencies

IV. The Human Element
   A. Human Behavior and Performance in Safety
   B. Procedures, Rules, and Training
   C. Ergonomics

V. Fundamental Statistics
   A. Central Tendency/Dispersion
   B. Population, Sample and Normal Curve
   C. Control Charts, Specs and Process Capability
   D. Probability fundamentals

VI. Process Applications
   A. Attributes/Variables
   B. Non Conformity Control Charts
   C. Sampling Plan Concepts, Including MIL-STD-1050
   D. Reliability

VII. Quality Management Techniques
   A. Quality Costs
   B. Improvement Techniques
   C. Total Quality Management
   D. ISO 9000 Manual

**Evaluation of Student Performance:**
1. Examinations
2. Assignments
3. Class projects and/or presentations and/or reports