

**1. Course Number and Name:**

ENGT 4900 Preparation for Professional License

**2. Credits and Contact hours:**

Credits: 3 hours, Contact: 3 lecture hours

**3. Instructor's or course coordinator's name:**

Gary L. Daugherty

**4. Text book, title, author, and year:**

None

**a. Other supplemental materials:**

NCEES, Supplied Reference Manual

**5. Specific Course Information:**

**a. Brief description of the content of the course (catalog description):**

This course covers the thirteen topics that are required for the general engineering exam of the Fundamentals of Engineering. Some of the topics are a review of previous coursework but cast the material in a most practical manner as appropriate for the FE exam. Some of the material is new and presented in a concise fashion, to properly cover all the topics of the FE exam. Student need not take the FE exam to enroll for this course. Three lecture hours plus three lab hours per week.

**b. Pre-requisites, or co-requisites:**

Senior Standing

**6. Specific goals for the course:**

**a. Specific outcomes of instruction:**

1. An understanding of the use of differential calculus and techniques of integration and differential equations.
2. An understanding of the principles of chemistry as they apply to engineering.
3. An overview of material science and metallurgy.
4. A working knowledge of engineering economics and aspects of ethics in engineering.
5. An review of thermodynamic processes and cycles.
6. An understanding of fluid statics and mechanics.
7. A review of mechanical statics and machine design.
8. An overview of dynamics.
9. An understanding of materials and calculations related to stress and strain.
10. An understanding of the basics of electric circuits and automatic control.

**b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course:**

- F. An ability to identify, analyze and solve technical problems.
- H. Recognition of the need for, and an ability to engage in, lifetime learning.
- I. An ability to understand professional, social and ethical responsibilities.

**7. Brief list of topics to be covered:**

1. Calculus
2. Chemistry
3. Material science
4. Ethics and economics
5. Thermodynamics
6. Fluid mechanics
7. Mechanical Statics
8. Dynamics
9. Strength of materials
10. Electricity
11. Automatic Control