

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



MASTER SYLLABUS

**COURSE NUMBER – COURSE NAME
SOET 480 - FE Exam Review**

Created by: Michael J. Newtown, P.E.

Updated by:

Canino School of Engineering Technology

Department: Mechanical and Energy Systems

Semester/Year: Spring 2019

- A. **TITLE:** FE Exam Review
- B. **COURSE NUMBER:** SOET 480
- C. **CREDIT HOURS:** (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

Credit Hours: 0
Lecture Hours: 2 per week
Lab Hours: per week
 Other: per week

Course Length: 15 Weeks

- D. **WRITING INTENSIVE COURSE:** Yes No
- E. **GER CATEGORY:** None: Yes: GER
If course satisfies more than one: GER
- F. **SEMESTER(S) OFFERED:** Fall Spring Fall & Spring

G. **COURSE DESCRIPTION:**

This course is a review the necessary knowledge to pass the Fundamentals of Engineering exam.

- H. **PRE-REQUISITES:** None Yes If yes, list below:

Senior Status

CO-REQUISITES: None Yes If yes, list below:

An Engineering Technology Capstone course

KEY	Institutional Student Learning Outcomes [ISLO 1 – 5]
ISLO #	ISLO & Subsets
1	Communication Skills Oral [O], Written [W]
2	Critical Thinking <i>Critical Analysis [CA], Inquiry & Analysis [IA], Problem Solving [PS]</i>
3	Foundational Skills <i>Information Management [IM], Quantitative Lit./Reasoning [QTR]</i>
4	Social Responsibility <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i>
5	Industry, Professional, Discipline Specific Knowledge and Skills

*Include program objectives if applicable. Please consult with Program Coordinator

J. **APPLIED LEARNING COMPONENT:** Yes No

If YES, select one or more of the following categories:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Classroom/Lab | <input type="checkbox"/> Civic Engagement |
| <input type="checkbox"/> Internship | <input type="checkbox"/> Creative Works/Senior Project |
| <input type="checkbox"/> Clinical Placement | <input type="checkbox"/> Research |
| <input type="checkbox"/> Practicum | <input type="checkbox"/> Entrepreneurship |
| <input type="checkbox"/> Service Learning | (program, class, project) |
| <input type="checkbox"/> Community Service | |

K. **TEXTS:**

Lindberg, Michael, FE Mechanical, Civil, Environmental Manual, or Electrical Review Manual, Professional Publications Inc., (ppi2pass.com), 2017
Choose a book package based on discipline

L. **REFERENCES:**

M. **EQUIPMENT:** None Needed: enhanced classroom or flex classroom

N. **GRADING METHOD:** P/F

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**

- Participation
- Homework

P. **DETAILED COURSE OUTLINE:**

- I. Mathematics
 - A. Algebra
 - B. Calculus
 - C. Differential Equations
 - D. Statistics and Probabilities
 - E. Numerical Methods
- II. Fluid Mechanics (Civils – Hydraulics and Hydrology)
 - A. Fluid Properties
 - B. Fluid Statics
 - C. Fluid Dynamics
 - D. Fluid Measurement and Similitude
 - E. Compressible Fluid Dynamics
 - F. Fluid Power
- III. Thermodynamics (Mechanicals)
 - a. Properties of substances
 - b. Laws of Thermodynamics

- c. Power Cycles and Entropy
- d. Mixtures of Gases, Vapors and Liquids
- e. Combustion
- f. HVAC
- IV. Heat Transfer (Mechanicals)
 - a. Conduction
 - b. Convection
 - c. Radiation
- V. Statics
 - a. System of forces and moments
 - b. Trusses
 - c. Pulleys, Cables, and Friction
 - d. Centroids and Moments of Inertia
- VI. Materials
 - a. Material Properties and Testing
 - b. Engineering Materials
- VII. Mechanics of Materials
 - a. Stress and strain
 - b. Thermal, Torsional Stress
 - c. Beams
 - d. Columns
- VIII. Electricity and Magnetism
 - a. Electrostatics
 - b. Direct-current
 - c. Alternating-current
 - d. Rotating machines
- IX. Dynamics, and Vibrations
 - a. Kinematics
 - b. Kinetics
 - c. Kinetics of Rotation
 - d. Energy and work
 - e. Vibrations
- X. Design and Analysis
 - a. Fasteners
 - b. Design
 - c. Quality and reliability
- XI. Measurement, instrumentation, and controls
 - a. Measurement and instrumentation
 - b. Controls
- XII. Computational tools
 - a. Software (Excel)
- XIII. Engineering Economics
 - a. Economics
 - b. Cost present values
 - c. Future values
 - d. Rate of return
- XIV. Ethics and Professional Practice
 - a. Professional Practice
 - b. Ethics
 - c. Licensure

Q. LABORATORY OUTLINE: None X Yes