

B.S. OCEAN ENGINEERING



COLLEGE OF ENGINEERING AND COMPUTER SCIENCE
DEPARTMENT OF ELECTRICAL ENGINEERING

ACADEMIC LEARNING COMPACT

CONTENT KNOWLEDGE (Declarative Knowledge): Students will demonstrate a broad knowledge of fundamental and applied engineering subjects: fluid and solid mechanics, dynamics, hydrostatics and buoyancy, thermodynamics, heat transfer, engineering materials, strength of materials, statistical methods, data analysis, oceanography, ocean wave mechanics, underwater acoustics, dynamic systems and control theory, networks and electronics, electrical machines, and computer programming.

In EOC 4804 (Ocean Engineering System Design), students are required to have sound multi-disciplinary knowledge of engineering and science subjects through the completion of prerequisite courses in mathematics, science, and the ocean engineering core. A five-member committee of faculty and industry members, appointed by the Chair, assesses the students' knowledge of engineering and science subjects based on their performance in the senior design courses and final presentation.

**CONTENT KNOWLEDGE (Technical Skills), and
COMMUNICATION SKILLS (Written Communication, Oral Communication,
Team/Collaborative Communication), and
CRITICAL THINKING SKILLS (Analytical Skills, Creative Skills, Practical Skills):**
Students will demonstrate the ability to identify, formulate, and solve engineering problems by applying knowledge of mathematics, science and engineering. Students will demonstrate the ability to design an engineering system or component to meet desired needs and requirements using appropriate engineering tools and techniques. Students will function effectively in teams.

The Department Chair appoints a five member committee consisting of faculty members, including the instructor(s) and one industry or research laboratory representative (or a staff with such experience) to evaluate the senior-year capstone design project in EOC 4804 (Ocean Engineering System Design). The committee assigns scores to each student on the following outcomes:

- ability to apply knowledge of mathematics, science and engineering;
- ability to design systems, components and processes to meet desired needs;
- ability to function in multi-disciplinary teams;
- ability to identify, formulate and solve engineering problems;
- understanding of professional and ethical responsibility;
- ability to communicate effectively (both oral and written form)
- ability to use the techniques, skill and modern engineering tools necessary for engineering practice;
- ability to understand the impact of engineering solutions in a global and societal context;
- knowledge of contemporary issues.

Each student makes an oral presentation of their contribution to the project(s) which is evaluated by the committee for technical content and communication skills. The course grade is based on the final written report which is a compilation of each student's write-up of his/her contribution to the project and which is evaluated by the instructor.

Most of the senior year courses include term projects that require communication skills in the form of oral presentations and written reports. The presentations and the reports are evaluated by the instructor and make a portion of their grades.

Approved 12-2-2005

COMPLETE DEGREE REQUIREMENTS APPEAR IN FAU'S UNIVERSITY CATALOG