

1. ES462 Emerging Technologies

2. 3 credit hours, 3 recitation hours

3. Course coordinator: LCDR Raymond Guethler, USN

4. Textbook: None. Supplemental lecture material distributed via Google Drive

5. Specific course information

a. Focuses on skills and toolsets for evaluation of new and emerging technologies using a sociotechnological development model. Includes discussions of basic science, state-of-the-art technologies and current research trends in a variety of emerging areas, including biotechnology, nanotechnology, cybernetics, etc. Credit cannot be received for both ES462 and ES503. [spring]

b. Prerequisite: 1/C ESE major or approval of department chair.

c. Elective course

6. Specific goals for the course

a. At the conclusion of the course, students will be able to:

- Develop an appreciation for the necessity of forward thinking in technology matters.
- Build up a methodology for sound projection of emerging technologies.
- Investigate a variety of important emerging technologies.
- Develop an understanding of the modern environment for emerging technologies.
- Understand the roles of money, society and politics in technological development.

b. This course addresses the following student outcomes:

- an ability to apply knowledge of mathematics, science, and engineering
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- (j) a knowledge of contemporary issues

7. Topics covered

- Various Tools for Analyzing Technology
- Modes of Transportation
- Automation
- Gene Therapy
- Space Exploration
- Mind Control