Miami Dade College

Course Description

EGN1008C | Introduction to Engineering | 3.00 credits

An introduction to the opportunities, challenges, and required skills of the engineering profession. Students explored the different disciplines of engineering, their function in industry, and required education. Professional issues such as registration, ethics, safety, and design are discussed. Projects and activities are used to develop problem solving, communication and computer skills (word-processing, spreadsheets, presentations, mathematical analysis, email, Internet).

Course Competencies

Competency 1: The student will demonstrate knowledge of the educational requirements for a career as a professional engineer by:

1. Describing his/her chosen field of Engineering
2. Demonstrating an understanding of the role of professional societies including but not limited to NSBE, SHPE, SWE and FES, and by identifying the one most suitable for him/her
3. Creating an educational plan showing the courses required for a B.S. in Engineering. This educational plan should also reflect the order in which the courses must be taken
4. Creating a career plan, and writing resumes and cover letters

Competency 2: The student will demonstrate knowledge of engineering ethics by:

1. Understanding the concept of ethics and excellence in engineering
2. Demonstrating the responsibility required of engineering professionals
3. Recognizing the early signs of ethical dilemma situations
4. Discussing the code of ethics in the engineering profession and its impact to all stakeholders
5. Understanding the impact of ethical decisions on your personal career on society

Competency 3: The student will demonstrate an understanding of basic computer tools used by professional engineers by:

1. Demonstrating the importance of basic computer skills in engineering
2. Demonstrating an understanding of various computer-based applications including Microsoft of ice and computer aided drawing
3. Demonstrating the ability to navigate the operating system

Competency 4: The student will demonstrate an understanding of various engineering fields by:

1. Understanding the various engineering disciplines that are available
2. Understanding the breadth of careers available to engineers
3. Identifying where to access additional information regarding specific engineering disciplines
4. Identifying the various professional organizations that support specific engineering disciplines
5. Analyzing the skill sets needed for each discipline of engineering

Competency 5: The student will demonstrate the ability to perform technical writing by:

1. Demonstrating the ability to write technical reports
2. Understanding the importance of conveying ideas to non-engineers
3. Demonstrating the ability to review technical documents and making edits as necessary
4. Demonstrating the ability to write Standard Operating Procedures

Competency 6: The student will demonstrate knowledge of communication by:

1. Understating the importance of effective communication
2. Demonstrating the ability to perform public speaking
3. Preparing and using effective visuals in presentations
4. Developing effective presentation skills for various audiences

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5. Describing the four basic types of communication

Competency 7: The student will demonstrate knowledge of basic project management by:
1. Understanding why project management is important for professional engineers
2. Developing an understanding of the project management process
3. Understanding the importance of milestones and deadlines
4. Understanding the management of resources
5. Monitoring and revising elements of project management

Competency 8: The student will demonstrate knowledge of team building by:
1. Understanding and applying the principles of successful teambuilding
2. Observing and recognizing personality traits in yourself and others
3. Developing team building skills for career success
4. Understanding why leadership skills are an important part of your skillset
5. Applying basic principles of leadership

<u>Learning Outcomes:</u>
- Formulate strategies to locate, evaluate, and apply information
- Demonstrate knowledge of ethical thinking and its application to issues in society
- Use computer and emerging technologies effectively