St. Petersburg College

SPC

APPROVED COURSE OUTLINE

Credit(s) 2.00
Contact Hours 36.00
Effective Term: Fall 2015 (505)

BME 1008

Introduction to Biomedical Engineering
Engineering and Building Arts Department

Requisites:
Prerequisite: ENC 1101
or
Developmental Level 2 Reading Met

Course Description:
This course is an introduction to and overview of biomedical engineering. The goal is to provide beginning students with an understanding of the breadth of the field of biomedical engineering technology. The impact of biomedical technology on the global economy will be explored. Students will explore past, current, and emerging technologies and their impact on the advancement of medical science and the delivery of health care.

Course Topics:

- None

Learning Outcomes and Objectives:

1. Students will demonstrate competency by performing basic word processing tasks, demonstrating research skills utilizing online resources and presenting data and information in an appropriate manner by:
a. performing basic word processing tasks.
b. applying appropriate communication methods (e.g. presentations, formal reports, memos, e-mail, etc.)
c. demonstrating basic research skills utilizing online resources.
d. presenting data and information in an appropriate manner.

2. The student will demonstrate knowledge of the history, impact and application of the field of biomedical engineering by recognizing, defining, summarizing and explaining key concepts, historical context and technology related to this field by:
a. identifying major historic role Biomedical Engineers and related technology have had on modern health care.
b. defining what Biomedical Engineering is and the impact Biomedical Engineers have on the health care delivery system.
c. explaining what Biomedical Engineers do and identify main areas of the world of Biomedical Engineering..
d. defining terminology related to Biomedical Engineering Technology and related health care uses.

3. The student will demonstrate knowledge of key subdivisions of the Biomedical Engineering field through recognizing, differentiating, and explaining relevant biomedical technology and processes by:
a. recognizing the major subdivisions in the field of Biomedical Engineering and technology associated with the field.
b. describing major expanses in Clinical Engineering and the range of Biomedical Engineering Technology used by doctors for patient care.
c. recognizing and describing the technology associated with the field.

4. The student will demonstrate detailed knowledge of significant scientific contributors and the impact of their research on biomedical engineering technology by:
a. identifying and describing examples of key scientific contributors and their impact on Biomedical Technology.
b. researching, documenting and discussing key Biomedical Technology inventors, contributors and current uses of technology.

5. The student will be able to identify the career opportunities within the field as well as the associated knowledge, skills and abilities (KSAs) required for employment by:

a. identifying local, regional and national organizations that employ Biomedical Engineers and Technologists and describing jobs and technical skills needed for employment.
b. locating and matching Biomedical Engineering jobs and subsectors with required employment skills and knowledge.

Criteria Performance Standard:
Student must achieve a grade of a "C" or better.

Representative Textbooks:

- Textbook(s):

1. **Recommended** - S.N. Sarbadhikari. *A Short Introduction to Biomedical Engineering*, First Edition ed. CRC Press, 2007

Relevant Dates:
C&I Approval: , BOT Approval: , Effective Term: Fall 2015 (505)

History of Changes:

C&I Approval: , BOT Approval: , Effective Term: Fall 2015 (505)

Related Programs:

1. Engineering Technology Associate in Science (ENG-AS) (505) (Active)
2. Engineering Technology Associate in Science (ENG-AS) (520) (Pending)

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