BME205e Fundamentals of Bioengineering

Level: 2

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JULY

E-Learning: BLENDED - Learning is done MAINLY online using interactive study materials in Canvas. Students receive guidance and support from online instructors via discussion forums and emails. This is supplemented with SOME face-to-face sessions. If the course has an exam component, this will be administered on-campus.

Synopsis:

This course applies the concepts and methods of physical science and mathematics to solving the problems of the human system functions from an engineering approach. Topics include fluid mechanics, biomass transfer, bioheat transfer and modeling of physiological systems.

Topics:

- Fundamentals of fluid mechanics
- Physiological application of fluid mechanics
- Fundamentals of biomass transfer
- Physiological application of biomass transfer
- Fundamentals of bioheat transfer
- Physiological application of bioheat transfer

Learning Outcome:

- Apply the basic concepts in fluid mechanics, kinematics of fluid mechanics, hydrostatics, conservation relations and viscous and steady flow via analysis and/or description.
- Demonstrate the understanding and physiological application of fluid mechanics
- Explain and show the fundamentals of biomass transfer.
- Discuss the fundamentals of bioheat transfer
- Determine the application of biomass and bioheat transfer to physiological systems.
- Use techniques, skills and modern engineering tools, including computer tools and imaging equipment, to obtain data, analysis of data and provide meaningful findings and conclusions to bioheat transfer

Assessment Strategies:

Continuous Assessment Component	**Weightage (%)**
CLASS TEST	12
CLASS TEST	12
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
Sub-Total	**30**

Examinable Component	**Weightage (%)**

Written Exam	70
Sub-Total	**70**

Weightage Total	**100**