BME313 Biomedical Devices

Level: 3

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JAN

Synopsis:

The course aims to provide students with a general understanding of a wide range of biomedical devices such as cardiac devices (including heart valves, stents, pacemakers, catheters, etc), dental implants, ophthalmological devices, drug delivery techniques, auditory devices, and diagnostic tools. Students will also learn about sterilisation, evaluation and failure of implants and medical devices.

Topics:

- Introduction, Historical Development and Basic Principles of Biomedical Devices
- Cardiac Devices
- Ophthalmological Devices
- Auditory and Dental Devices
- Diagnostic Devices
- Sterilization, Failure, and Evaluation of Biodevices

Textbooks:

BME313 Study Guide (UDC - SUSS) SUSS
ISBN-13: SG-1460

BME313 Laboratory Manual
ISBN-13: OT-2206

Medical Devices Bertil Jacobson, MD, PhD, and Alan Murray, PhD Elsevier
ISBN-13: 9780443102592

Learning Outcome:

- Compare and discuss the different functions of the various biomedical devices
- Examine the working mechanisms of these devices
- Construct non-detailed conceptual designs of biomedical devices
- Evaluate the performance of retrieved implanted biomedical devices and make recommendation to improve the design
- Operate the laboratory (small scale) artificial kidney
- Develop detailed biomedical device designs in collaboration with traditional engineers and medical specialists

Assessment Strategies - Regular Semester (Evening Class):

Components	**Description**	**Weightage Allocation (%)**
Overall Continuous Assessment	QUIZ 1	15
	QUIZ 2	15
Overall Examinable Components	Written Exam	70
Total		**100**

*The information listed is subject to review and change.