2.3.3 Minor in Biomedical Engineering

Biomedical Engineering is a discipline that advances knowledge in engineering, biology, and medicine. It improves human health through inter disciplinary integration of the engineering sciences with the biomedical sciences. Biomedical Engineering forms part of the Life Sciences, which is fast becoming a strategic area of economic development in Singapore. The aim of this minor is to enable students to understand how the principles and tools of traditional engineering fields, such as mechanical, materials, electrical, and chemical engineering, can be applied in biology and medicine. It will be suited to students who wish to pursue further career opportunities in hospitals and health care centres, medical devices, pharmaceutical, biotechnology and biomaterials industries.

Only Stage 2 engineering students are eligible to apply for the Minor in Biomedical Engineering Programme. The intake for the programme is in January each year.

Requirements:

To satisfy the Minor in Biomedical Engineering, the students are required to fulfil at least 24 MCs and read at least ONE module from each of the following three options:

BIOMEDICAL ENGINEERING OPTION	**LIFE SCIENCE OPTION^{+}**	**ENGINEERING ELECTIVES OPTION**
	LSM1102 Molecular Genetics	CE3143 Wastewater Microbiology
BN3401 Biomedical Electronics & Systems	LSM1104 General Physiology	CE4257 Linear Finite Element Analysis
BN3402 Bio Analytical Methods in Bioengineering	LSM1202^{+} Human Anatomy	CN4208 Biochemical Engineering
BN4201 Musculoskeletal Biomechanics	LSM1401* Fundamentals of Biochemistry	CN4210 Membrane Science and Engineering

BIOMEDICAL ENGINEERING OPTION	LIFE SCIENCE OPTION[+]	ENGINEERING ELECTIVES OPTION
BN4202 Biofluid Dynamics	LSM2101 Metabolism and Regulation	CN4241R Engineering Principles for Drug Delivery
BN4203 Rehabilitation Engineering	LSM2102 Molecular Biology	EE3101 Digital Signal Processing
BN4301 Principles of Tissue Engineering	LSM2103 Cell Biology	EE3206 Intro to Computer Vision and Image Processing
BN4402 Electrophysiology	LSM2241 Introductory Bioinformatics	EE4605 Bio-Instrumentation and Signal Analysis
BN4403 Cellular Bioengineering	LSM2202A Experimental Molecular and Cell Biology	EE4601 Sensors for Biomedical Applications
BN4404 Biomicroelectromechanical Systems – BioMEMs	LSM3241 Bioinformatics and Biocomputing	EE4602 Bioelectronics
BN4406 Biophotonics and Bioimaging	PY1105 Physiology I	EE4603 Biomedical Imaging Systems
		ME4233 Computational Methods in Fluid Mechanics
		ME4253 Biomaterials Engineering
		ME4291 Finite Elements Analysis

* Students reading LSM1401 are NOT permitted to read LSM1101 and vice versa.

[+] No more than three Level-1000 modules should be read.