Ateneo de Zamboanga University

COLLEGE OF SCIENCE AND INFORMATION TECHNOLOGY

BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING (BS BME)

FIRST YEAR

First Semester

FG	Course No.	Course Title	Units
	ENM.101	Calculus 1: Differential Calculus	3
	MATMOD	Mathematics in the Modern World	3
	BME 111	Human Biology	3
	UNDSELF	Understanding the Self	3
	SPIECO	Spirituality & Ecology in the Christian, Ignatian & Islamic Traditions	3
	CONWOR	Contemporary World	3
	PATHFIT1	Movement Enhancement	2
	FFP-NSTP1	Freshmen Formation Program/NSTP1	4.5
		Total	**24.5**

Second Semester

FG	Course No.	Course Title	Units
	ENM.102	Calculus 2:Integral Calculus	3
	ENS.104	Electromagnetism & Thermal Physics	4
	ENS.121	Mechanics & Strength of Materials	5
	VOCMIS	Vocation & Mission in the Christian, Ignatian & Islamic Traditions	3
	PHIHUM	Philosophy of the Human Person: Social & Political Dimensions	3
	PATHFIT2	Fitness Exercise	2
	FFP-NSTP2	Freshmen Formation Program/NSTP2	4.5
		Total	**24.5**

Health Care Engineering Immersion = 60 hours

SUMMER

FG	Course No.	Course Title	Units
	ENG.101	Computer-Aided Technologies	2
	ENG.205	Engineering Economics	3
	ENS.103	Chemistry for Engineers	4

SECOND YEAR

First Semester

FG	Course No.	Course Title	Units
	BME 212	Introduction to Biomedical Engineering	3
	BME 213	Anatomy & Physiology for Engineers	4
	COE.301	Fundamentals of Electrical Circuits	4
	ENM.103	Differential Equations	3
	GE ELECT-LM	Literatures of Mindanao	3
	ARTAPP	Art Appreciation	3
	ETHICS	Ethics	3
	PATHFIT3	Dance/Sports/Rec & Games I	2
		Total	**25**

Second Semester

FG	Course No.	Course Title	Units
	COE.302	Fundamentals of Electronic Circuits	4
	BME 221	Biomedical Device Design	3
	COE.303	Logic Circuits and Design	4
	GE ELECT-DA	Data Analytics	3
	PURCOM	Purposive Communication	3
	SCITECS	Science, Technology & Society	3
	PHIHIS	Readings in Philippine History	3
	PATHFIT4	Dance/Sports/Rec & Games II	2
		Total	**25**

Health Care Engineering Immersion = 60 hours

SUMMER

FG	Course No.	Course Title	Units
	COE.121	Programming Logic and Design	4
	ENM.202	Advanced Engineering Math	3

THIRD YEAR

First Semester

FG	Course No.	Course Title	Units
	BME 311	Introduction to Biomedical Imaging & Applications	4
	COE.304	Fundamentals of Mixed Signals & Sensors	4
	COE.307	Embedded Systems	4
	COE.402	Digital Signal Processing	4
	BME 314	Biomedical Instrumentation 1	4
	ENG.232	Occupational, Health and Safety Engineering	3
		Total	**23**

Second Semester

FG	Course No.	Course Title	Units
	BME 315	Biomaterials and Biocompatibility	3
	BME 313	Biomedical Signal Processing	4
	ENM.104	Engineering Data Analysis	3
	COE.403	Computer Network & Security	4
	ENG.202	Methods of Research	3
	BME 411	Biomedical Instrumentation 2	3
	BMECog1	Cognate Course 1 - Introduction to Robotics	3
		Total	**23**

Health Care Engineering Immersion = 120 hours

SUMMER

FG	Course No.	Course Title	Units
	BMECog2	Cognate Course 2 - Digital Communications	3

FOURTH YEAR

First Semester

FG	Course No.	Course Title	Units
	BME 501	BME Practice and Design 1	3
	BME 312	Clinical Management Engineering	3
	BME 316	Practical Skills Course 1	3
	RIZAL	Life and Works of Rizal	3
		Total	**12**

Second Semester

FG	Course No.	Course Title	Units
	BME 502	BME Practice and Design 2	3
	ENG.204	Seminars and Colloquium	3
	OJT	Field Placement and Report (Immersion and OJT 300 hours)	3
	BME 317	Practical Skills 2	3
		Total	**12**

Health Care Engineering Immersion = 180 hours

EFFECTIVE SCHOOL YEAR 2024-2025

Revised: June 2023

COGNATE COURSES:

Course Code	Course Title	Units
ENG.301	Feedback and Control Systems	**3**
ECE.515	Broadcast Transmission and Distribution	**3**
ECE.404	Modulation and Coding Technique	**3**
COE.511	Mobile Applications Programming	**3**
COE.512	Database Management Systems	**3**
ECE.510	Advanced Communication Systems and Design (Wireless)	**3**
ECE.511	Advanced Power Supply Systems	**3**

List of Pre-Requisite Courses

	Course Offering		Pre-Requisite Courses
Code	**Description**	**Code**	**Description**
ENM 102	Calculus 2: Integral Calculus	ENM.101	Calculus 1: Differential Calculus
BME 213	Anatomy & Physiology for Engineers	BME 111	Human Biology
COE.301	Fundamentals of Electrical Circuits	ENS.102	Electromagnetism and Thermal Physics
ENM.103	Differential Equations	ENM.102	Calculus 2: Integral Calculus
COE.302	Fundamentals of Electronic Circuits	COE.301	Fundamentals of Electrical Circuits
BME 211	Biomedical Device Design	BME 212	Introduction to Biomedical Engineering
COE.303	Logic Circuits and Design	COE.301	Fundamentals of Electrical Circuits
ENM.202	Advanced Engineering Math	ENM.103	Differential Equations
BME 311	Intro to Biomedical Imaging and Applications	ENM.202 BME 212	Advanced Engineering Math Intro to Biomedical Engineering
COE.304	Fundamentals of Mixed Signals and Sensors	COE.301	Fundamentals of Electrical Circuits
COE.402	Digital Signal Processing	ENM.202	Advanced Engineering Math
BME 312	Biomaterials and Biocompatibility	BME 213	Anatomy and Physiology for Engineers
BME 313	Biomedical Signal Analysis	COE.402 BME 311	Digital Signal Processing Intro to Biomedical Imaging & Applications
BME 314	Instrumentation and Control	COE.302	Fundamentals of Electronic Circuits

NOTES:

- Medical Courses (e.g. Anatomy and Physiology, Biomaterials, Hospital Management) may be handled and delivered by faculty members from School of Medicine
- Natural and Physical Sciences (e.g. Human Biology, Chemistry, Physics) may be handled and delivered by faculty members of Natural Sciences Department
- General, Allied and Professional Courses will be handled and delivered by Faculty members from the Engineering Department