

BME3116: CAPSTONE PROJECT I

Effective Term

Semester B 2024/25

Part I Course Overview

Course Title

Capstone Project I

Subject Code

BME - Biomedical Engineering

Course Number

3116

Academic Unit

Biomedical Engineering (BME)

College/School

College of Biomedicine (BD)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Completed at least 30 CUs of the student's major courses with minimum CGPA of 3.0

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

The aim of this course is to enable a student with proven ability to strengthen the theoretical and analytical foundations of a selected research topic or theme within his/her programme of study. This course will prepare such a student for the

challenge of the Capstone Project II in the final year. The student is to be guided (either individually or as a group) by a supervisor, who will be responsible for the design, delivery and assessment of the course subject matter.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Describe the scope of the intended research topic or theme.		x	x	
2	Explain the significance of the intended research topic or theme.			x	
3	Discuss the state-of-the-art knowledge of the intended research topic or theme.			x	
4	Identify a capstone project of the intended research topic or theme with clearly stated elements of discovery or innovation.			x	
5	Demonstrate effective communication orally and in writing on the proposed research topic or theme.			x	

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

LTAs		Brief Description	CILO No.	Hours/week (if applicable)
1	T1	Students will discuss under the guidance and direction of a supervisor, the nature, aim, scope and significance of a selected research topic or theme related to his/her major.	1, 2	
2	T2	Students will discuss the available body of knowledge and background information related to the intended research topic or theme.	3	

3	T3	Students will apply the appropriate methodology and develop a capstone project with clearly stated elements of discovery or innovation.	4	
4	T4	Students will present the Capstone Project Proposal orally and in writing (a detailed proposal and a well-designed poster).	5	

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Tests and discussions	1, 2, 3, 4	50	
2	Written Proposal	4	30	
3	Poster (A0 or A1 size)	5	10	Assessed by course examiner
4	Oral Presentation	5	10	Assessed by course examiner

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)**Assessment Task**

Tests and discussions

Criterion

Problem identification, literature search, problem definition, identify relevant methodologies to solve the problem, defining the outcomes.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Written Proposal

Criterion

Documenting the stages involved in problem identification, literature search, problem definition, identify relevant methodologies to solve the problem, defining the outcomes.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Poster (A0 or A1 size)

Criterion

Concise presentation of the project highlights.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Oral Presentation

Criterion

Oral presentation covering the stages involved in problem identification, literature search, problem definition, identify relevant methodologies to solve the problem, defining the outcomes.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

The course is flexible, and has no specific syllabus.

Reading List**Compulsory Readings**

Title	
1	There are no specific compulsory readings. However, the student will be guided to follow one or more book(s) depending on the selected topic to be investigated and the relevant methodologies that could be explored to carry out this capstone project I.

Additional Readings

Title	
1	Student initiative is compulsory to search the literature and explore the topics associated with the project being undertaken through this course.