

# SYE3116: CAPSTONE PROJECT I

## New Syllabus Proposal

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### Effective Term

Semester A 2024/25

## Part I Course Overview

### Course Title

Capstone Project I

### Subject Code

SYE - Systems Engineering

### Course Number

3116

### Academic Unit

Systems Engineering (SYE)

### College/School

College of Engineering (EG)

### Course Duration

One Semester

### Credit Units

3

### Level

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

### Medium of Instruction

English

### Medium of Assessment

English

### Prerequisites

Nil

### Precursors

Completed at least 30 CUs of the student's major courses; students are recommended to take this course in penultimate year, before taking the Final Year Project.

### Equivalent Courses

ADSE3116 Capstone Project I

### Exclusive Courses

Nil

## Part II Course Details

### Abstract

The aim of this course is to enable a student to lay the necessary foundations of a selected research topic or theme within his/her programme of study. Capstone Project I is the first leg of a student's journey of discovery and innovation. It 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 proposed Capstone Project.

### Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Define the scope of the intended research topic or theme	10	x	x	x
2	Explain the significance of the intended research topic or theme	10	x	x	
3	Discuss the state of the art knowledge of the intended research topic or theme	20	x		
4	Propose a capstone project of the intended research topic or theme with clearly stated elements of discovery or innovation	40	x	x	x
5	Communicate orally and in writing the proposed research intent	20	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.

### Teaching and Learning Activities (TLAs)

TLAs	Brief Description	CILO No.	Hours/week (if applicable)
T1	Each student shall define, 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	N.A.

2	T2	Each student shall review and critique the available body of knowledge and background information related to the intended research topic or theme.	3	N.A.
3	T3	Each student shall formulate the appropriate methodology and develop a capstone project with clearly stated elements of discovery or innovation.	4	N.A.
4	T4	Present the Capstone Project Proposal orally and in writing (a detailed proposal and a well designed poster)	5	N.A.

**Assessment Tasks / Activities (ATs)**

	<b>ATs</b>	<b>CILO No.</b>	<b>Weighting (%)</b>	<b>Remarks (e.g. Parameter for GenAI use)</b>
1	<p>Continuous assessment Each student taking this course will be required to undertake a series of guided studies as assigned by the supervisor which will include reading and critique of selected literature related to the intended research topic or theme. The student may be directed to attend certain lecture or seminar as deemed appropriate by the supervisor.</p> <p>The content of this directed study course must be submitted to the course leader of the Capstone Projects by Week 4 of the semester for endorsement.</p>	1, 2, 3, 4	50	

2	Written proposal The student is required to submit and present a detailed Capstone Project proposal to complete the course. The proposed Capstone Project must have clearly stated elements of discovery or innovation.	4	30	
3	Poster (A0 or A1 size) Creative design of poster to highlight key elements of the proposed Capstone Project and how it will be carried out.	5	10	e-poster
4	Oral Presentation Present the key elements of the proposed Capstone Project and how it will be carried out.	5	10	

**Continuous Assessment (%)**

100

**Examination (%)**

0

**Assessment Rubrics (AR)****Assessment Task**

Coursework

**Criterion**

Continuous assessment

Written proposal

Poster (A0 or A1 size)

Oral Presentation

**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	Nil

#### Additional Readings

Title	
1	Nil