

SYE8007M: RESEARCH AND DEVELOPMENT CASE STUDY

Effective Term

Semester A 2025/26

Part I Course Overview

Course Title

Research and Development Case Study

Subject Code

SYE - Systems Engineering

Course Number

8007M

Academic Unit

Systems Engineering (SYE)

College/School

College of Engineering (EG)

Course Duration

One Semester

Credit Units

3

Level

R8 - Research Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

SEEM8007M Research and Development Case Study (offered until 2021/22) /ADSE8007M Research and Development Case Study (offered until 2023/24)

Exclusive Courses

Nil

Part II Course Details

Abstract

The aim of the course is to develop the student's ability to carry out R&D study in chosen subject area related to mechatronics and automation systems. It will enable students to establish a Research & Development (R & D) proposal to meet defined requirements.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Understand the scope and nature of a research and development work, and the process of investigation;	20	x	x	
2	Establish a research and development proposal based on the selected engineering topic;	40	x	x	x
3	Develop professional skills of formulating a project work	40	x	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	Small Group Activities	Supervised learning by the faculty	1, 2, 3	39 hours/ sem

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Coursework	1, 2, 3	100	-	No

Continuous Assessment (%)

100

Examination (%)

0

Minimum Continuous Assessment Passing Requirement (%)

30

Minimum Examination Passing Requirement (%)

0

Assessment Rubrics (AR)**Assessment Task**

Coursework, report and presentation (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Well-defined problem and appropriateness of proposed methodology. Clear presentation in oral and written form.

Pass (P)

(P) Pass

Failure (F)

(F) Fail

Assessment Task

Coursework, report and presentation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Well-defined problem and appropriateness of proposed methodology. Clear presentation in oral and written form.

Pass (P)

(P) Pass

Failure (F)

(F) Fail

Additional Information for AR

The grading will be PASS or Fail, assigned based on students' performance in assessment tasks/activities.

Part III Other Information

Keyword Syllabus

R&D development, professional skill, strategy, seminars and technical talks, systems and industrial engineering, engineering management, data analytics, informatics.

Reading List**Compulsory Readings**

Title	
1	NIL

Additional Readings

Title	
1	NIL