

EE6450: ADVANCED TOPICS IN ENGINEERING I

Effective Term

Semester B 2024/25

Part I Course Overview

Course Title

Advanced Topics in Engineering I

Subject Code

EE - Electrical Engineering

Course Number

6450

Academic Unit

Electrical Engineering (EE)

College/School

College of Engineering (EG)

Course Duration

One Semester

Credit Units

3

Level

P5, P6 - Postgraduate Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

To be prescribed by the visiting scholar or the course lecturer

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to provide students with an opportunity to study advanced engineering subjects presented by visiting scholars with expertise in the area of Electronic Engineering and Information Technology.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if DEC-A1 app.)		DEC-A2	DEC-A3
1	Understand and analyze the engineering problems in the selected areas.		x		
2	Describe the technology in the selected areas.		x	x	
3	Apply the selected advanced technology to solving problems.		x	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	Lectures	Students will participate in lectures where they will learn various fundamental knowledge and concepts in advanced topics of engineering.	1, 2, 3	3 hrs/ wk (Some of the lectures will be conducted in the laboratory as case studies, demonstrations and experiments)
2	Laboratory experiments	Students will engage in lab sessions designed to reinforce selected key concepts covered in lectures, enabling them to apply theoretical knowledge through hands-on practice and case study.	2, 3	

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Tests	1, 2, 3	30	
2	Assignments (least 3 times)	1, 2, 3	20	

Continuous Assessment (%)

Examination (%)

50

Examination Duration (Hours)

2

Additional Information for ATs

Remark: To pass the course, students are required to achieve at least 30% in course work and 30% in the examination.

Assessment Rubrics (AR)

Assessment Task

Examination (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Achievements in CILOs

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal level

Assessment Task

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

Criterion

Achievements in CILOs

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal level

Assessment Task

Examination (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Achievements in CILOs

Excellent

(A+, A, A-) High

Good

(B+, B) Medium

Marginal

(B-, C+, C) Low

Failure

(F) Not even reaching marginal level

Assessment Task

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

Criterion

Achievements in CILOs

Excellent

(A+, A, A-) High

Good

(B+, B) Medium

Marginal

(B-, C+, C) Low

Failure

(F) Not even reaching marginal level

Additional Information for AR

Constructive Alignment with Programme Outcomes

PILO 1, 2, 3 The course provides students with opportunities to study advanced engineering subjects presented by visiting scholars with expertise in areas of selected topics.

PILO 4, 5 Students are required to complete assignments to gain experience in a design study, a programming exercise, a design simulation exercise, or an empirical study in a commercial environment, in areas of selected topics.

Part III Other Information

Keyword Syllabus

The syllabus will depend on the topic offered for this course, but the following arrangements must be adhered to:

1.1 The intended syllabus shall be available by the last week of previous semester to allow students to be informed of the topic.

Reading List

Compulsory Readings

Title	
1	Designated research papers in the field of the advanced topics in engineering for case study purpose.

Additional Readings

Title	
1	Additional topical papers in the field of the advanced topics in engineering for case study purposes.