EE4096: ENGINEERING TRAINING I

Effective Term
Semester A 2022/23

Part I Course Overview

Course Title
Engineering Training I

Subject Code
EE - Electrical Engineering
Course Number
4096

Academic Unit
Electrical Engineering (EE)

College/School
College of Engineering (EG)

Course Duration
One Semester

Credit Units
0

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

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
EE2000 Logic Circuit Design
or
EE2301 Basic Electronic Circuits
or
EE2005 Circuits and Devices I
or
CS2311 Computer Programming

Precursors
Nil

Equivalent Courses
EE4090 or EE4091 or EE4093 or EE4290

Exclusive Courses
Nil

Part II Course Details

Abstract

This course aims to provide students with relevant practical training related to the electronic, computer and information engineering. It emphasizes hands-on experiences that complement the theoretical studies covered in the regular taught courses.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	To design a PCB circuit board		x	x	
2	To solder a PCB circuit board				
3	To identify different stages in a nano-fabrication process		x	x	
4	To develop an application using a given programming language		x	x	
5	To build a simple network installation by configuring network devices		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.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Laboratory	Electronic Practice students are required to design a PCB circuit board, solder a PCB circuit board, and identify different stages in a nano-fabrication process	1, 2, 3	See additional Information for TLAs
2	Laboratory	Programming Practice students are required to learn a new programing language and use it to create an application through mini-project	4	See additional Information for TLAs

| 3 | Laboratory | Networking Practice students are required to set-up and configure a network according to requirements | 5 | | See additional Information for TLAs |

Additional Information for TLAs

Laboratory for whole course: 7 hrs x 10 days, 70 contact hours

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Assessment sheets	1, 2, 3, 4, 5	34	
2	Demonstration of task outcomes	1, 2, 3, 4, 5	33	
3	Logbook	1, 2, 3, 4, 5	33	

Continuous Assessment (%)

100

Examination (%)

0

Additional Information for ATs

Remark:
The assessment is purely on a pass/fail basis. To pass the course, students are required to have a laboratory attendance of 100% recorded.

Assessment Rubrics (AR)

Assessment Task

Coursework

Criterion

Achievements in CILOs

Pass (P)

Reach the required level

Failure (F)

Not even reaching marginal level

Part III Other Information

Keyword Syllabus

Electronic Practice Training
Design circuit layouts for electrical and electronic sub-systems. Use a professional PCB developer, Altium Designer, to output layout designs. Integrating and soldering a PCB circuit board.
Recognize the fabrication process and essential equipment in a nano-fabrication.

Programming Practice Training
Use python to work out an application such as, visual recognition for different objects, or programming a hardware to perform certain functions.

Networking Practice Training
Set-up, configure, test and monitor a network according to specific requirements.

Reading List

Compulsory Readings

	Title
1	Nil

Additional Readings

	Title
1	Nil