

Subject Description Form

Subject Code	EEE1101
Subject Title	Industrial Placement Fundamentals
Credit Value	1 training credit
Level	1
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	<ol style="list-style-type: none"> 1. Introduce students to basic instrumentation in electrical engineering 2. Cultivate students' creativity and problem-solving ability 3. Introduce students to the career prospect in electrical engineering 4. Engage students in desirable forms of learning at university that emphasizes learning to learn
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> a. Develop their practical hands-on ability and problem-solving ability b. Understand and utilize basic instruments c. Able to work as a team and demonstrate the capabilities of learning to learn d. Develop a set of career goals
Subject Synopsis/ Indicative Syllabus	<p>Introduction to Basic Instruments - lecture (3 hours)</p> <p>Lectures and training sessions for basic instruments and tools that are used in electrical engineering. This will include the operations of a multimeter, digital oscilloscope, power supply and signal generator.</p> <p>Seminars (2 hours)</p> <p>Seminars given by industrialists from the electrical and transportation engineering industries, on two critical topics of (i) study and (ii) career. The aims are to introduce students to their disciplines, to enthuse them about their major study, to arouse their interest in electrical and transportation systems engineering, and to cultivate their understanding of the engineering profession.</p> <p>Group Project (8 hours)</p> <p>The group project aims at stimulating students' creativity, problem-solving skills, research for information, and project management abilities through practical and hands-on tasks at a level commensurate with their first-year engineering backgrounds. Students will work in small groups engaged in group problem-solving under the guidance of teachers/instructors. Towards the end of the project, students will develop their interpersonal skills and acquire the skills of identifying key features of electrical systems. The deliverables include practical hands-on hardware/software, demonstration, report and presentation.</p>

Teaching/Learning Methodology

Introduction to Basic Instruments

Introduction to basic instruments is delivered as mass lectures, supplemented with practical training sessions. This knowledge is essential for the smooth implementation of the group project, especially for students with no prior experience.

Seminars

The seminars are designed to provide students better understand future career planning. The delivery mode will be interactive and engaging. Students will be encouraged to raise questions and discuss with the presenters.

Group Project

Students will work collaboratively with their group members to design and implement an engineering solution to a given problem under the guidance of instructors. There will be close staff-students and students-students interaction. Students will be given opportunities to develop their interpersonal skills, creativity, problem-solving skills, research for information and project management abilities. Assessment tasks will consist of demonstration, presentation, and report. These are designed to evaluate individual student's performance and achievement of the relevant intended learning outcomes as well as to encourage active participation. Students will be given a general overview of an electrical system project, including project features to be developed. They will then work in small groups in a workshop to identify appropriate action plan to implement the project and subsequently to produce the product and to present it to fellow classmates.

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed			
		a	b	c	d
1. Group Project (demo, report, present)	70%	✓	✓	✓	
2. Practical works	20%	✓	✓		
3. Seminar (quiz)	10%				✓
Total	100 %				

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Quiz can measure the students' understanding about the content of the seminars. Practical works can evaluate students' understanding about the operations and applications of the instruments. Through project demonstration, presentation and project reports, students can demonstrate their creativity and problem-solving skills abilities. They can also demonstrate their ability to research for information, formulate a project plan, and manage a project with initiative. Through business plan report, students can demonstrate their understanding on business promotion.

Student Study Effort Expected

Class contact:	
▪ Seminars	2 Hrs.
▪ Basic instrumentations	3 Hrs.
▪ Group project	8 Hrs.

	Other student study effort:	
	▪ Background works on Group Project	24 Hrs.
	Total student study effort	37 Hrs.
Reading List and References	<ol style="list-style-type: none"> 1. C.K. Alexander and M.N.O. Sadiku, Fundamentals of Electric Circuits, 6th Edition, New York: McGraw-Hill, 2017. 2. N.G. Siegel, Engineering project management, New Jersey, Wiley, 2019 3. Problem-solving, CRC Press, 2021 	

July 2023