City University of Hong Kong
Course Syllabus

offered by Department of Electrical Engineering
with effect from Summer in 2020/2021

Part I Course Overview

Course Title:	Engineering Training
Course Code:	EE4090
Course Duration:	Summer
Credit Units:	0
Level:	B4
Proposed Area: *(for GE courses only)*	☐ Arts and Humanities ☐ Study of Societies, Social and Business Organisations ☐ Science and Technology
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	(EE2000 Logic Circuit Design or EE2301 Basic Electronic Circuits or EE2005 Circuits and Devices I) and CS2311 Computer Programming
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	EE4091 and EE4092 or EE4093 and EE4095 or EE4096 and EE4097 or EE4290 and EE4291

Exclusive Courses:
(Course Code and Title) Nil

Part II Course Details

1. Abstract

This course aims to enable students to gain practical experience under the Industrial Attachment Scheme (IAS)/ Overseas Internship Scheme (OIS) (Part-A) or the in-house training scheme (Part-B).

Part A (Industrial Attachment Scheme (IAS) / Overseas Internship Scheme (OIS))
The aim is to enable students to gain practical experience and learn new technologies from an industrial / research environment while nurturing students' spirit of professionalism.

Part B (In-House Training)
The aim is to provide relevant practical training to electronic and electrical engineering, computer and data engineering and information engineering. It emphasizes hands-on experiences that complement the theoretical studies covered in the regularly taught courses.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

Part A

No.	CILOs[#]	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Gain practical working experience from an industrial / research environment		√	√	
2.	Nurture the spirit of professionalism and develop professional ethics in a real-life environment		√		
3.	Aware of the technologies used in a modern industrial / research setting			√	
4.	Communicate their ideas and present their work effectively		√	√	
** If weighting is assigned to CILOs, they should add up to 100%.*		100%			

Part B

No.	CILOs[#]	Weighting* (if applicable)	Discovery-enriched curriculum-related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Gain practical experience from an in-house environment		√	√	

2.	Solve real-world problems by applying proper engineering tools and analysis techniques			√	
3.	Aware of the technologies used in a modern industrial setting		√		
4.	Communicate their ideas and present their work effectively		√	√	
** If weighting is assigned to CILOs, they should add up to 100%.*		100%			

[#] Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

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 self-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.

3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

Part A

TLA	Brief Description	CILO No.						Hours/week (if applicable)
		1	2	3	4			
Laboratory	Students will be assigned to work in a company. A mentor in the company / research institute will provide an induction for students, assign jobs, and supervise them throughout the training.	√	√	√	√			At least 40 hours/week (IAS: 6 weeks, OIS: 9-13 weeks)

Part B

TLA	Brief Description	CILO No.						Hours/week (if applicable)
		1	2	3	4			
Laboratory	Students are required to complete the selected modules described in Part III.	√	√	√	√			40 hours/week (2 weeks)

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Part A:

Assessment Tasks/Activities	CILO No.						Weighting*	Remarks
	1	2	3	4				
Continuous Assessment: <u>100%</u>								
Log-book	√	√	√	√			34%	

Demonstration and Presentation	√	√	√	√			33%	
Co-supervisors comments	√	√	√	√			33%	
Examination: N/A								
** The weightings should add up to 100%.*							100%	

Remark:
The assessment is purely on a pass/fail basis. To pass the course, students must complete the training with satisfactory performance recommended by the training mentor as well as CityU co-supervisor.

Part B:

Assessment Tasks/Activities	CILO No.						Weighting*	Remarks
	1	2	3	4				
Continuous Assessment: 100%								
Log-book	√	√	√	√			N.A.	Please refers to the assessment table below.
Quizzes or assignments	√	√	√	√			N.A.	
Demonstration and presentation	√	√	√	√			N.A.	
Examination: N/A								
** The weightings should add up to 100%.*							N.A.	

Remark:
The assessment is purely on a pass/fail basis. Students are required to fulfill all the assessment components listed below:

Assessment Items	Passing Criteria	Remarks
1. Attendance	>80% for each module	• A student absent during an am or pm training session without any valid reason will receive a warning. • If a student gets two written warnings will fail in the whole engineering training. • If a student has a cumulative 30min or more of late-time for a module, he will fail the module and retake another module in the next available training session.
2. Continue assessment	>50% of each quiz	• There will be at least two quizzes/ assignments for each module.
3. Logbook	Grade 2 or above for each module	• Students require to submit a logbook for each module, showing their daily activities. • There are four grade points to evaluate logbook performance: (1) Unsatisfactory (2) Satisfactory (3) Good (4) Excellent
4. Demonstration	Grade 2 or above for each module	• Students require a demonstration for each module, showing their achievement. • There are four grade points to evaluate the demonstration:

		(1) Unsatisfactory (2) Satisfactory (3) Good (4) Excellent
5. Presentation	Grade 2 or above	• Students require to give a presentation on one of the modules. • There are four grade points to evaluate the presentation: (1) Unsatisfactory (2) Satisfactory (3) Good (4) Excellent

Students can participate in recognized open competitions, such as ROBOCON, ROV, and ACM; or Departmental Undergraduate Research Fellowship (DURF) as a substitute for the in-house training requirement. However, the assessment of the activities mentioned above has to align with the in-house training assessment requirement.

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Pass (P)	Failure (F)
Continuous assessment on the progress of assigned tasks or group project	Achievements in CILOs	Reach the required level	Not even reaching the marginal level

6. Constructive Alignment with Major Outcomes

MILO	**How the course contribute to the specific MILO(s)**
1, 2, 3, 5, 10	This training course provides plenty of opportunities for students to practice as engineers / researcher to carry out projects on an IAS/OIS job position or an emulated in-house environment. Students will gain hands-on experiences that complement the theoretical studies covered in the regularly taught courses.
4, 7	Teams commonly develop real-world projects. Students in this course can enhance communication skills through coordinating tasks, group discussions, and presentations. The working environment also promotes team spirit and one's responsibility.
6, 8, 9	By exposing students to a competitive industrial / research environment, they are alerted to the importance of life-long learning. They will gain knowledge in contemporary issues and be aware of engineering solutions' impact in a broad, global, and societal context. They will also realize their

	professional and ethical responsibilities under the guidance of mentors and supervisors.

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

Part A: Industrial Attachment Scheme (IAS)/ Overseas Internship Scheme (OIS)

Structure and content
Students must take six weeks of IAS/nine to thirteen weeks of OIS of training in a company / research institute related to the electronic, electrical, computer, or IT industry. The training of each student is subject to the availability of engineering training programs for the individual company / research institute.

Supervision and Assignment
A mentor of the company / research institute will be assigned to be responsible for giving guidance and advice to the student and assessing the student's performance during the training. Academic staff from the Department of Electrical Engineering, City University of Hong Kong, will be appointed to co-supervise and monitor the student's progress. Students are required to report their work in a logbook every week. The assessment is based on the logbook and the performance of their work. Students will be required to give a presentation on their work at the end of the attachment.

Part B: In-house Training

Students must complete two out of four modules below, covering practical electronic and electrical, computer hardware and software, computer system administration, and networking.

Electronic and Electrical 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. Basic Electrical installation Practices.

Raspberry Practice Training
Set-up, configure a Raspberry Pi computer system and develop applications based on its hardware and software.

Computer System Administration Practice Training
Set-up, configure a Linux and Window system according to specific requirements

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

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	N/A

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	N/A