SYE6309: SMART CITY AND IOT TECHNOLOGIES

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Smart City and IoT Technologies

Subject Code
SYE - Systems Engineering
Course Number
6309

Academic Unit
Systems Engineering (SYE)

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
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

The 21st century is an era of internet, information and data. This course aims to explore its implication and opportunity for development of smart city and industry. We will investigate this from a manufacturing perspective in which emphasis will be placed on smart city development, the use of sensors, the internet of things, low altitude airspace economy, and manufacturing technologies. Students will learn about how these technologies are influencing and shaping future urban development. Students learning in this course will be based on cases presented throughout the course. Students will also work on their own smart city projects through case studies. Furthermore, student's learning will be enriched by company visits and/or guest lectures from industrial engineering and management professionals and eminent professors.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Have an overview understanding of the technologies in future urban development.	20	x	x	
2	Elaborate on the implications of the internet, information, technology, and data on the development of smart cities and industries.	30		x	
3	Have in-depth insight into one specific technology through a case study.	30	x	x	
4	The ability to work as a group with group members solving challenges	20	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	The lectures will follow the chapters in the textbook. Presentation and Tests: students will give presentations on topics related to the course. Tests will also be conducted.	1, 2, 3, 4	39 hrs

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Continuous Assessment: Presentation	1, 3	50	-	Yes

2	Continuous Assessment: #Assignments (min.:3)	1, 2	10	-	No

Continuous Assessment (%)
60

Examination (%)
40

Examination Duration (Hours)
2

Minimum Continuous Assessment Passing Requirement (%)
30

Minimum Examination Passing Requirement (%)
30

Additional Information for ATs
may include homework, tutorial exercise, project/mini-project, presentation.

Assessment Rubrics (AR)

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

Criterion
Achievements in CILOs

Excellent
(A+, A, A-) High (overall score more than 80%)

Good
(B+, B, B-) Significant (overall score more than 60%)

Fair
(C+, C, C-) Moderate (overall score more than 40%)

Marginal
(D) Basic (overall score more than 30%)

Failure
(F) Not even reaching marginal levels (overall score less than 30%)

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

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Achievements in CILOs

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(A+, A, A-) High (score more than 80%)

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Assessment Task
Continuous Assessment (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Achievements in CILOs

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Good
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Marginal
(B-, C+, C) Moderate (overall score more than 40%)

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

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Part III Other Information

Keyword Syllabus

- Smart city development
- The use of sensors
- The Internet of Things
- Low altitude airspace economy
- Manufacturing technologies

Reading List

Compulsory Readings

	Title
1	Hong Kong Smart City Blueprint 2.0

Additional Readings

	Title
1	Nil