GE2313: GLOBAL IT CASE STUDIES

Effective Term
Semester A 2022/23

Part I Course Overview

Course Title
Global IT Case Studies

Subject Code
GE - Gateway Education
Course Number
2313

Academic Unit
Computer Science (CS)

College/School
College of Engineering (EG)

Course Duration
One Semester

Credit Units
3

Level
A1, A2 - Associate Degree
B1, B2, B3, B4 - Bachelor's Degree

GE Area (Primary)
Area 3 - Science and Technology

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

This course helps technical and non-technical students to be creative innovators in the use of technology to solve real-world problems. This course focuses on smart city, its related technologies, and its benefits to citizens. Through case studies, students gain a better insight on different computing technologies and how they can be used to address social needs. The course will broaden students' understanding of current state-of-the-art in computing and future trends, as well as various needs of society that can be addressed through innovative use of technology. Subject areas to be covered may include smart energy, environment, waste, government, community, transportation, building/homes, public health, safety, etc. This course will be useful for students from any discipline and will give insights to the value of technology across industries from a global point of view as well as issues related to their ethical use.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Explain examples of how IT benefits everyday life through innovative solutions.	35	x		
2	Explore and analyze the use and impact of IT in different industries around the world.	35		x	
3	Explain current trends in IT usage for business and industry.	30			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	Lecture & In-Class Discussion	Case studies of smart city applications and how they change the way we work and play will be covered in lectures. A selection of key industries will be made and crucial information systems will be highlighted as case studies so that students understand the rationale behind the development of these business and industry systems and the benefits they bring, as well as impact to society. Current trends will be explored. Students will further strengthen what they learned in class with in-class discussions. Students are expected to share what they learned with others during in-class presentations and participations.	1, 2, 3	3 hrs/wk
2	Reading Report	Reference materials are assigned to students to read. They report the technical summary and findings including impact of technology to industry and society. To encourage critical thinking, students should also write their opinion and express their new perspectives from the study.	1, 2, 3	

3	Team Project	Students will be grouped in teams to work on an independent case study on a type of computer application and industry of their choice and critically compare and analyse the impact the information system/ technology has on the industry and possibly global economy. They should also propose enhanced usage of IT in the industry or suggest novice applications of the technology. A report should be generated by each team to document their research, critical comparison and analysis, and their new ideas. The weekly progress of their project work should be logged and may be selected to be presented in the class. Each team will be required to give a formal presentation at the end of the semester	1, 2, 3	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Weekly quiz	1, 2, 3	10	
2	Reading Report	1, 2, 3	10	
3	Team Project	1, 2, 3	40	

Continuous Assessment (%)

60

Examination (%)

40

Examination Duration (Hours)

2

Additional Information for ATs

For a student to pass the course, at least 30% of the maximum mark for the examination must be obtained.

Assessment Rubrics (AR)

Assessment Task

Weekly quiz

Criterion

1.1 ABILITY to articulate answer in a very clear and precise manner, demonstrating a firm knowledge of the subject.
1.2 DEMONSTRATE ability for critical thinking and analysis
1.3 PROVIDE rich and strong evidence and arguments to support and justify answer.
1.4 SHOW good command of English.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Reading Report

Criterion

2.1 ABILITY to provide precise summary of the assigned readings and show comprehensive understanding of the study.
2.2 ABILITY to make real connections between the study and own experience and learning. EXPLAIN the impact of the subject (people/technology/..) with evidences.
2.3 CAPACITY to demonstrate new perspectives and insights from the study.
2.4 ABILITY to report in a well-organised way with logical flow of thoughts. Correct use of English, free of errors in grammar, punctuation and spelling. Layout and use of graphics facilitate communication. All references (including images) are accurately acknowledged.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Team Project

Criterion

3.1 ABILITY to provide thorough summary of current development with good highlights of significant people / technology / incidents / events. Variety of example cases is included to exemplify the current development with critical comparison and analysis.
3.2 ABILITY to describe in-depth possible industrial / societal needs and the social impact of the technology. Provide relevant statistics and figures to substantiate the impact.
3.3 ABILITY to make real connections between the study and own experience and learning and CAPACITY to demonstrate new perspectives and insights from the study. Every idea is logically supported by relevant facts, and includes judgment of the reliability of data.
3.4 ABILITY to report in an organised way and use of sections is logical and allows easy navigation through the document. All graphical documents, sketches and maps are creative, professional and strongly support the text. All sources correctly and thoroughly documented. All ideas borrowed are duly acknowledged in the text. Appropriate citation forms are utilized throughout. Reference section complete, comprehensive and follows standard format.
3.5 ABILITY to present in a clear, logical, interesting sequence which audience can follow. Use of creative and effective visual aids that easily hold audience's attention. Delivery should be clear, concise, correct and complete.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Examination

Criterion

4.1 ABILITY to articulate answer in a very clear and precise manner, demonstrating a firm knowledge of the subject.
4.2 DEMONSTRATE ability for critical thinking and analysis
4.3 PROVIDE rich and strong evidence and arguments to support and justify answer.
4.4 SHOW good command of English.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

Smart city technologies: internet-of-things (IoT), big data/data mining, open data, cloud, mobile apps, e-government, artificial intelligence, etc.; Smart city applications: smart energy, environment, waste, government, community, transportation, smart building/smart homes, public health, safety, etc.

Reading List

Compulsory Readings

	Title
1	All material will be from online resources.

Additional Readings

	Title
1	Freely available Web-based resources will be used.

Annex (for GE courses only)

A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:

Please indicate which CILO(s) is/are related to this PILO, if any (can be more than one CILOs in each PILO)

PILO 1: Demonstrate the capacity for self-directed learning

1, 2, 3

PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology

1, 2, 3

PILO 3: Demonstrate critical thinking skills

1, 2, 3

PILO 4: Interpret information and numerical data

2

PILO 5: Produce structured, well-organised and fluent text

1, 2, 3

PILO 6: Demonstrate effective oral communication skills

1, 2, 3

PILO 7: Demonstrate an ability to work effectively in a team

1, 2, 3

PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation

1, 2, 3

B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.

Selected Assessment Task

Team Project and presentation on the current development, impact to society, industry and global economy of "Build a Smart Home".