

# AC4161: ACCOUNTING INFORMATION SYSTEMS AND EMERGING TECHNOLOGIES

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## Effective Term

Semester A 2024/25

## Part I Course Overview

### Course Title

Accounting Information Systems and Emerging Technologies

### Subject Code

AC - Accountancy

### Course Number

4161

### Academic Unit

Accountancy (AC)

### College/School

College of Business (CB)

### Course Duration

One Semester

### Credit Units

3

### Level

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

### Medium of Instruction

English

### Medium of Assessment

English

### Prerequisites

FB2100/CB2100 Accounting I; or CB2100 Introduction to Financial Accounting

### Precursors

Nil

### Equivalent Courses

Nil

### Exclusive Courses

Nil

## Part II Course Details

### Abstract

This course is designed to introduce a variety of topics about the systems used by a company to process its accounting information and contemporary topics related to emerging technologies in accounting profession such as the application of "Big Data" and "Artificial Intelligence" in accounting. The course focuses on automated accounting information systems as a tool to understand and integrate processes, process activities and data, perform data analysis, and create information to facilitate managerial decision-making.

This course aims to:

- provide students with knowledge of the nature and role of accounting information systems in a business, and with knowledge of emerging technologies in accounting profession such as "Big Data" and "Artificial Intelligence";
- prepare students to identify internal control risk in information processing and to suggest appropriate controls;
- develop students' ability to model business processes, create accounting information database, and analyse data for accounting issues;
- develop students' knowledge of different business processes, including sales/collection, acquisition/payment, conversion.

### Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Describe the basic concepts of accounting information systems and contemporary topics related to emerging technologies in accounting profession including "Big Data" and "Artificial intelligence" .	10	x	x	
2	Identify internal control weaknesses in information processing in various business processes and suggest appropriate controls over those weaknesses.	20	x	x	
3	Create different conceptual models based on the activities and informational needs of the various business processes in a typical firm.	30	x	x	
4	Convert a conceptual business process model into a physical implementation by using database applications like Microsoft Access.	10	x	x	
5	Explain how accounting information systems are used to support implementation of business and functional strategies.	30	x	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	Seminars	Students will engage in interactive seminars focusing on the development of general knowledge, analytical skills, communication skills and modelling capabilities through the presentation of nature, the types and the implementation of accounting information system and contemporary topics relevant to emerging technologies in accounting profession such as “Big data” and “Artificial intelligence” .	1, 2, 3, 4, 5 25 hours
2	Computer lab exercises	Students will engage in computer lab exercises focusing on information processing using Microsoft Access and data analysis using technology including Python and R.	1, 2, 4 2 hours
3	Lectures and in class cases	Students will engage in lectures and associated in class cases related to identifying and controlling for internal control risks in accounting information systems.	2, 5 1 hour
4	REA Modelling Cases*	Students will participate in analysing different cases related to various business processes discussed in classes. Students will have hands-on experience on modelling and designing accounting information systems.	3 6 hours

5	Access Labs	Students will participate in computer lab exercises that focus on hands-on activities involving Microsoft Access. Students will learn how to convert logical relational models into physical databases, and how to query data from relational database for further analytics purposes.	4	5 hours
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**Additional Information for LTAs**

\*DEC element

**Assessment Tasks / Activities (ATs)**

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Group Project*: Students are divided into groups (3-5 students for each group). Each group is required to explain the contemporary issues related to accounting information systems, and other emerging technologies-related topics in a written report. In addition, each group is required to make a presentation.	1, 2, 3, 4, 5	20	
2	In-class and online cases and quizzes: Students are required to contribute to in-class case discussions and quizzes and are assessed on the application of lecture material to both structured and unstructured problems.	1, 2, 3, 4, 5	10	

3	Mid-Term Test: Students are required to explain the concepts, types, and implementation of accounting information system and the knowledge related to emerging technologies. In addition, students are assessed on the details about various business cycles and REA models.	1, 2, 3, 5	20	
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**Continuous Assessment (%)**

50

**Examination (%)**

50

**Examination Duration (Hours)**

3

**Additional Information for ATs**

\*DEC element

**Final Examination [Closed-book examination]:**

Students are required to understand and explain the details about the concept, the types and implementation of accounting information systems, and issues of emerging technologies-related topics. In addition, students are assessed on the details about various business cycles, basic and expanded REA models, and integrated REA model.

Students are required to pass both coursework and examination components to guarantee to pass the course. Failing either component may lead to failure in the course. The passing mark is generally 50.

**Assessment Rubrics (AR)****Assessment Task**

Group Project

**Criterion**

1.1 Ability to create UML data diagrams based on real world descriptions of business processes

**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**

Group Project

**Criterion**

1.2 Ability to create a database based on the UML diagram and sample data.

**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

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**Assessment Task**

Group Project

**Criterion**

1.3 Ability to understand and explain the issues related to accounting information systems, and emerging technologies-related topics.

**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

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**Assessment Task**

Group Project

**Criterion**

1.4 Ability to identify risks in information processing and various business process and suggest appropriate controls.

**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

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**Assessment Task**

In-class & online cases & quizzes

**Criterion**

2.1 Ability to understand and explain the concepts of accounting information system and emerging technologies-related topics.

**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

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**Assessment Task**

Mid-term test

**Criterion**

3.1 Ability to create UML data diagrams based on a revenue or expenditure business process

**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

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**Assessment Task**

Mid-term test

**Criterion**

3.2 Ability to explain various aspects of accounting information systems

**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

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**Assessment Task**

Mid-term test

**Criterion**

3.3 Ability to explain various database concepts and UML modelling concepts

**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

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**Assessment Task**

Mid-term test

**Criterion**

3.4 Ability to understand and explain the concept, the types and implementation of accounting information system and emerging technologies-related topics.

**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

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**Assessment Task**

Final Exam

**Criterion**

4.1 Ability to create UML data diagrams based on a production business process with advanced modelling elements.

**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

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**Assessment Task**

Final Exam

**Criterion**

4.2 Ability to explain the elements of risk assessment and control.

**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

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**Assessment Task**

Final Exam

**Criterion**

4.3 Ability to identify and correct internal control issues using technology

**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

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**Assessment Task**

Final Exam

**Criterion**

4.4 Ability to understand and explain the details about the concept, the types and implementation of accounting information systems, and emerging technologies-related topics.

**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

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## Part III Other Information

### Keyword Syllabus

Accounting information systems, emerging technologies in accounting profession, internal controls, relational database, business process, risk analysis.

### Reading List

#### Compulsory Readings

Title	
1	Vernon J. Richardson, C.J. Chang, and R. Smith. Accounting Information Systems., latest edition, McGraw Hill.
2	Additional materials posted to Canvas

#### Additional Readings

Title	
1	Cheryl L. Dunn, J. Owen Cherrington and Anita S. Hollander, Enterprise Information Systems, 3rd edition, McGraw Hill.
2	Marshall Romney and Paul Steinbart, Accounting Information Systems, 14th edition, Prentice Hall.
3	Robert Hurt, Accounting Information Systems, 4th edition, McGraw Hill.
4	Vernon Richardson, Katie Terrell, and Ryan Teeter. Data Analytics for Accounting. 1st Edition, McGraw Hill.