



**Dr Samar El Sayad**

# Course Specifications

<b>Course Title:</b>	<b>BIG DATA AND ARTIFICIAL INTELLIGENCE IN ACCOUNTING</b>
<b>Course Code:</b>	<b>ACC 443</b>
<b>Program:</b>	<b>BACHELOR OF SCIENCE IN ACCOUNTING</b>
<b>Department:</b>	<b>ACCOUNTING</b>
<b>College:</b>	<b>COLLEGE OF BUSINESS ADMINISTRATION</b>
<b>Institution:</b>	<b>PRINCE SULTAN UNIVERSITY</b>

National Accreditation



International Accreditation



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## A. Course Identification

<b>1. Credit hours:</b> 3 credit hours
<b>2. Course type</b>
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered:</b> 4
<b>4. Pre-requisites for this course (if any):</b>
<ul style="list-style-type: none"> <li>• COMPUTER APPLICATIONS FOR BUSINESS (CS 202)</li> <li>• MANAGEMENT INFORMATION SYSTEMS (BUS 373)</li> </ul>
<b>5. Co-requisites for this course (if any):</b> N/A

### 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	X	70%
2	Blended		
3	E-learning	X	30%
4	Correspondence		
5	Other		

### 7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
<b>Contact Hours</b>		
1	Lecture	39
2	Laboratory/Studio	-
3	Tutorial	-
4	Others (Major Exam, project presentation, etc.)	6
	<b>Total</b>	<b>45</b>
<b>Other Learning Hours*</b>		
1	Study	45
2	Assignments	-
3	Library	5
4	Projects/Research Essays/Theses/Case Studies	10
5	Others (Self Study Professional Certification Program)	20
	<b>Total</b>	<b>80</b>

\* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

## B. Course Objectives and Learning Outcomes

### 1. Course Description

This course introduces big data and data analytics tools and techniques required to leverage data effectively and make informed, real-time, and data-driven business decisions. The focuses include analytic techniques for decision making and the examination of “big data” involving accounting information. Hands-on experiences will develop skills with select software tools used in data analytics for accounting purposes. In addition, this course, provides an overview of artificial intelligence and how it can impact accounting. This course is highly interactive and based on the problem-based learning philosophy.

### 2. Course Main Objective

Big data and artificial intelligence are the new forces driving business. The main purpose of this course is to prepare students with the necessary knowledge and skills they need to move forward with these new technologies in accounting and to successfully build an automated and innovative accounting strategy.

### 3. Course Learning Outcomes

CLOs		Aligned PLOs
<b>1</b>	<b>Knowledge:</b>	
1.1	Demonstrate an in-depth understanding of the different types of big data & analytics and the importance of artificial intelligence to accounting.	PLO 1.1
1.2	Identify the different techniques of forecasting & predictive analytics such regression, classification, clustering, optimization, and simulation.	PLO 1.1
<b>2</b>	<b>Skills :</b>	
2.1	Critique and assess the strengths and weaknesses of big data & analytics and artificial intelligence tools and platforms and assess to what extent big data and analytics help in enhancing accounting functions.	PLO 2.1
2.2	Ability to apply various data analysis, visualization, modeling, and artificial intelligence techniques.	PLO 2.1
<b>3</b>	<b>Competence:</b>	
3.1	Ability to articulate and communicate Big Data and analytics issues effectively.	PLO 3.3
3.2	Demonstrate ability to communicate effectively in written form about the artificial intelligence landscape and how it’s transforming business.	PLO 3.4

### C. Course Content

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
Data Analysis Fundamentals	2	6
<ul style="list-style-type: none"> <li>Types and uses of data</li> </ul>		

<ul style="list-style-type: none"> <li>• The job roles associated with data analytics</li> <li>• The life cycle of organizational data</li> <li>• The tools used for managing and analyzing data</li> <li>• Challenges to effectively leveraging data</li> </ul>		
<b>Big Data &amp; Data Analysis Platforms and Tools</b> <ul style="list-style-type: none"> <li>• Big Data sources</li> <li>• Types of data analytics</li> <li>• Big Data software tools &amp; platforms</li> </ul>	1	3
<b>Applications of Big Data &amp; Data Analysis in Accounting</b> <ul style="list-style-type: none"> <li>• Big Data &amp; accounting operations</li> <li>• Data analysis in accounting</li> </ul>	3	9
<b>Data Visualization: Charts, Dashboards &amp; Advanced Visualization Techniques</b> <ul style="list-style-type: none"> <li>• Communicating insights from data</li> <li>• Making decisions from data</li> <li>• Visualizing data</li> <li>• BI platforms</li> </ul>	3	9
<b>Forecasting and Predictive Analytics for Accounting</b> <ul style="list-style-type: none"> <li>• Predictive analytics techniques</li> <li>• Forecasting with data models</li> <li>• Finding relationships in data</li> </ul>	2	6
<b>Ethics &amp; big data</b> <ul style="list-style-type: none"> <li>• Big data and ethical issues</li> <li>• Ethical policy considerations</li> </ul>	1	3
<b>Introduction to Artificial Intelligence</b> <ul style="list-style-type: none"> <li>• A brief history of AI</li> <li>• Definitions of AI</li> <li>• Features &amp; challenges of AI</li> </ul>	1	3
<b>Artificial Intelligence Applications in Accounting</b> <ul style="list-style-type: none"> <li>• AI &amp; accounting</li> <li>• Application examples</li> </ul>	1	3
<b>Project work &amp; Presentation</b>	1	3

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## D. Teaching and Assessment

### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge</b>		
1.1	Demonstrate an in-depth understanding of the different types of big data & analytics and the importance of artificial intelligence to accounting.	Lectures, forums, and seminars.	Examinations
1.2	Identify the different techniques of forecasting & predictive analytics such regression, classification, clustering, optimization, and simulation.	Lectures, forums, and seminars.	Examinations
...			
<b>2.0</b>	<b>Skills</b>		
2.1	Critique and assess the strengths and weaknesses of big data & analytics and artificial intelligence tools and platforms and assess to what extent big data and analytics help in enhancing accounting functions.	Lectures, in-class activities, discussions	Examinations
2.2	Ability to apply various data analysis, visualization, modeling, and artificial intelligence techniques.	Lectures, in-class activities, discussions	Examinations
...			
<b>3.0</b>	<b>Competence</b>		
3.1	Ability to articulate and communicate Big Data and analytics issues effectively.	Lectures, in-class activities, discussions	Examination
3.2	Demonstrate ability to communicate effectively in written form about the artificial intelligence landscape and how it's transforming business.	Lectures, in-class activities, discussions	Examinations
...			

### 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Major 1	7	20%
2	Data Analysis Fundamentals Certificate	12	20 %
3	Data Visualization Certificate	12	20%
5	Final Examination	16	40%

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

**Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :**

Instructors allocate six office hours per week for students' consultation (4 office hours and 2 academic advising hours). In addition, students are welcomed anytime by appointment if they cannot come during the office hours.

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	AICPA Material (Application of Data Analysis Essentials and Data Visualization Certificate Material)
<b>Essential References Materials</b>	AICPA Material (Application of Data Analysis Essentials and Data Visualization Certificate Material)
<b>Electronic Materials</b>	To be advised
<b>Other Learning Materials</b>	<ul style="list-style-type: none"> <li>• Data Analytics for Accounting, 1st Edition, by Vernon Richardson, Katie Terrell, Ryan Teeter</li> <li>• Other learning material such as computer-based programs/CD, professional standards or regulations and software (To be advised).</li> </ul>

### 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classroom with 25 seating capacity
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	Laptop, data show, whiteboard, LMS, Microsoft Office, ERP system, Internet Connection
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Laptop

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Course leader Program leaders	<b>Direct assessment</b> – Classroom observation <b>Indirect assessment</b> - Course Evaluation Survey
Extent of achievement of course learning outcomes	Faculty	<b>Direct assessment</b> – Academic assessment (AOL) Rubrics assessment <b>Indirect assessment</b>

<b>Evaluation Areas/Issues</b>	<b>Evaluators</b>	<b>Evaluation Methods</b>
		Course Evaluation Survey
Quality of learning resources	Student	<b>Indirect assessment</b> Course Evaluation Survey
Action Plan continuity (Closing the loop)	AOL Committee and course leaders	AOL Report

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

<b>Council / Committee</b>	Department of Accounting Council
<b>Reference No.</b>	Meeting No.
<b>Date</b>	