



جامعة الامير سلطان
PRINCE SULTAN
UNIVERSITY



رؤية VISION
2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

Dr. Samar El Sayad (Course Leader)

Course Specification 2020-2021



Course Title:	BIG DATA AND ARTIFICIAL INTELLIGENCE IN ACCOUNTING
Course Code:	ACC443
Program:	BACHELOR OF SCIENCE IN ACCOUNTING
Department:	ACCOUNTING
College:	COLLEGE OF BUSINESS ADMINISTRATION
Institution:	PRINCE SULTAN UNIVERSITY

National Accreditation



International Accreditation



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A. Course Identification

1. Credit hours:	3
2. Course type	
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"/>
3. Level/year at which this course is offered:	Year 4 (Semester 2)
4. Pre-requisites for this course (if any):	<ul style="list-style-type: none"> • COMPUTER APPLICATIONS FOR BUSINESS (CS 202) • MANAGEMENT INFORMATION SYSTEMS (BUS 373)
5. Co-requisites for this course (if any):	None

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	Distance learning		
5	Other		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	39
2	Laboratory/Studio	-
3	Tutorial	-
4	Others (Major Exam, presentation, AICPA Certification)	21
	Total	60

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. Also, the course enables students to gain 2 professional certificates from AICPA: Data Analysis Fundamentals Certificate and Data Visualization Certificate

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
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
2	Skills :	
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
3	Values:	
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

No	List of Topics	Contact hours
1	Data Analysis Fundamentals <ul style="list-style-type: none"> Types and uses of data The job roles associated with data analytics The life cycle of organizational data The tools used for managing and analyzing data Challenges to effectively leveraging data 	9
2	Big Data & Data Analysis Platforms and Tools <ul style="list-style-type: none"> Big Data sources Types of data analytics Big Data software tools & platforms 	3
3	Applications of Big Data & Data Analysis in Accounting <ul style="list-style-type: none"> Big Data & accounting operations Data analysis in accounting 	6
4	Data Visualization: Charts, Dashboards & Advanced Visualization Techniques <ul style="list-style-type: none"> Communicating insights from data Making decisions from data Visualizing data BI platforms 	9
5	Forecasting and Predictive Analytics for Accounting <ul style="list-style-type: none"> Predictive analytics techniques Forecasting with data models Finding relationships in data 	6
6	Artificial Intelligence & its Application in Accounting <ul style="list-style-type: none"> A brief history of AI Definitions of AI 	3

	<ul style="list-style-type: none"> • Features & challenges of AI • AI & accounting • Application examples 	
7	Ethics & big data <ul style="list-style-type: none"> • Big data and ethical issues • Ethical policy considerations 	1
8	Revision	2
Total		39

D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge		
1.1	Demonstrate an in-depth understanding of the different types of big data & analytics and the importance of artificial intelligence to accounting.	Lectures, in-class activities, discussions	Examinations and assignments
1.2	Identify the different techniques of forecasting & predictive analytics such regression, classification, clustering, optimization, and simulation.	Lectures, in-class activities, discussions	Examinations and assignments
...			
2.0	Skills		
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 and in-class activities	Examinations and assignments
...			
3.0	Competence		
3.1	Ability to articulate and communicate Big Data and analytics issues effectively.	Lectures, in-class activities, discussions	Examinations
3.2	Demonstrate ability to communicate effectively in written form about the artificial intelligence landscape and how it's transforming business.	Lectures and in-class activities	Examinations and assignments
...			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignments and Practical Exams	Continuous	20%
2	Major Exam I	7	20%
3	Data Analysis Fundamentals Certificate	12	10%
5	Data Visualization Certificate	12	10%
5	Final Exam	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

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

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	<ul style="list-style-type: none"> Classroom with 25 seating capacity Laboratory with 25 seating capacity
Technology Resources (AV, data show, Smart Board, software, etc.)	<ul style="list-style-type: none"> Smartboard (Overhead projector and Screen) Whiteboard LMS, Google Meet

	<ul style="list-style-type: none"> ● Microsoft Office ● Power BI ● RapidMiner ● Internet Connection
Other Resources (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	Direct assessment – Classroom observation Indirect assessment - Course Evaluation Survey
Extent of achievement of course learning outcomes	Faculty	Direct assessment – Academic assessment (AOL) Rubrics assessment Indirect assessment Course Evaluation Survey
Quality of learning resources	Student	Indirect assessment 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

Council / Committee	Department of Accounting Council
Reference No.	Term 202, Meeting No. 6
Date	May 6, 2021