Course Specification

Course Title:	Python for Business Applications
Course Code:	BA3206
Program:	BA Degree in Business Administration
Department:	Business Administration
College:	College of Business
Institution:	Umm Al-Qura University
Version:	2
Last Revision Date:	28/01/2023

Table of Contents:

#	Assessment task*	Week Due	Percentage of Total Assessment
1	Attendance and participation		10
2	Assignment		5
3	Course project		15
4	Presentation		10
5	Midterm		20
6	Final		40
7	Total		100
..			

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

A. General information about the course:

Course Identification	
1. Credit hours:	4

2. Course type				
a. University ☐	College ☐	Department ☒	Track☐	Others☐
b. Required ☒	Elective☐			

3. Level/year at which this course is offered: Level 10	

4. Course general Description

This course will introduce students to the fundamentals of Python, a general-purpose programming language widely used in business analytics. The course covers an introduction to the various packages in Python for data analysis, modelling, inference, prediction, text analysis, visualisation, and decision support.

5. Pre-requirements for this course (if any):

6. Co- requirements for this course (if any):

7. Course Main Objective(s)

This course aims to provide the students with the programming skills in a popular programming language, which is Python, which will help the students in applying these skills for various data analytics for business decision-making purposes. This course will help students navigate through other related courses with good programming skills.

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	32	80%
2.	E-learning	8	20%
3.	Hybrid • Traditional classroom • E-learning		
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	32
2.	Laboratory/Studio	
3.	Field	
4.	Tutorial	8
5.	Others (specify)	
	Total	40

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	To be able to explain the fundamentals of data analytics and its application to business and management decision making,	K1	Lectures. Videos Class work and in class discussions	Projects and assignments 2- Exams
1.2	To explore the main features of Python	K4	Lectures. Videos Class work and in class discussions	Projects and assignments 2- Exams
1.3	To identify the various data analytics techniques for various purposes	K3	Lectures. Videos Class work and in class discussions	Projects and assignments 2- Exams
2.0	Skills			
2.1	write codes for various purposes in Python and to	S5	Lectures.	Projects and assignments

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	be able identify and use various Python packages		Videos Class work in computer laps	2- Exams
2.2	apply a variety of data analysis techniques, such as data classification and clustering, prediction and forecasting, association rule mining & text mining, etc.,	S5	Lectures. Videos Class work in computer laps	Projects and assignments 2- Exams
2.3	visualise various types of data for various business requirements.	S6	Class work in computer laps	Projects and assignments 2- Exams
3.0	Values, autonomy, and responsibility			
3.1	Manage how to work in groups	V1	Group Discussions Project	Shared cumulative evaluation by students' roles
3.2	Work effectively in a team		Group Discussions Project	Evaluate them in individual and group contexts. For example. tests, projects, and presentations
...				

C. Course Content

No	List of Topics	Contact Hours
1	Python overview and the basic language elements	4
2	Debugging in Python (using pdb, Pycharm). How to read a program	4
3	Data Management and Manipulation	4
4	Data preparation and pre-processing	4

5	Feature selection	4
6	Predictive Modelling	4
7	Applied Clustering Techniques	4
8	Text Mining & Sentiment Analysis	4
9	Advanced Analytics and decision support systems	4
10	Big Data & Visual Analytics	4
Total		40

#	Assessment task*	Week Due	Percentage of Total Assessment Score
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4	Presentation		10
5	Midterm		20
6	Final		40
7	Total		100
..			

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

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	A.B. Downey. Think Python: How to Think Like a Computer Scientist. O'Reill, Media, Inc., 2012. W. McKinney. Python for data analysis: Data wrangling with Pandas, NumPy, and IPython. O'Reilly Media, Inc., 2012.
Supportive References	
Electronic Materials	Python manual - https://www.python.org/doc/ E. Jones, E. Oliphant, P. Peterson, et al. SciPy: Open Source Scientific Tools for Python. http://www.scipy.org/, 2001-.
Other Learning Materials	C.H. Papadimitriou and K. Steiglitz. Combinatorial optimization: algorithms and complexity. Courier Corporation, 1982.

	C. Reeves and J.E. Rowe. Genetic Algorithms: Principles and Perspectives – A Guide to GA Theory. Kluwer Academic Publishers, 2003..

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom, Demonstration lab
Technology equipment (projector, smart board, software)	Data Show, MS Excel, R, (Optional: Tableau)
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Chair, Students, External Stakeholders Department and quality committee	Open discussions with the students Anonymous surveys
Effectiveness of students assessment	Chair, Students, External Stakeholders Department and quality committee	Checking marking by the students themselves if it's possible Using the help of other members in reviewing the assignments/exams
Quality of learning resources	Chair, Students, External Stakeholders Department and quality committee	Review of course portfolios Instructor assessment by students
The extent to which CLOs have been achieved	Chair, Students, External Stakeholders Department and quality committee	Course specifications are periodically reviewed at the departmental level. Courses are updated periodically and compared to the benchmark standards.

Assessment Areas/Issues	Assessor	Assessment Methods
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	BA DEPARTMENT
REFERENCE NO.	
DATE	28/01/2023