هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

# Course Specification

| | |
|---|---|
| Course Title: | Business Analytics |
| Course Code: | BA3205 |
| 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:

## 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<br>This course was developed to provide students with the fundamental concepts and tools to understand the important role of business analytics in organizations. Students will have an exposure to important descriptive and predictive statistical techniques and tools. The course aims to equip students with a critical understanding of data analytics, business intelligence, ethical and legal implications of data use, and machine learning in business environments; emphasize the importance of data pre-processing as the foundation of meaningful data analytics, business intelligence and machine learning pipelines; equip the students with the ability to select and apply relevant statistical and visualization tools to identify patterns and trends in large real-life datasets; and critically evaluate the results obtained. Although students will be introduced to some theoretical concepts, a much more emphasis is directed towards the practical side of gaining insights and aiding managerial decision through data analysis and interpretation. The course covers the application of multiple data analytics tools using: Excel, Tableau as well as the R programming language. | | | | | |
| 5. Pre-requirements for this course (if any): | | | | | |
| 6. Co- requirements for this course (if any): | | | | | |
| 7. Course Main Objective(s)<br>• Understand the different analytical tools available for data analysis (i.e. MS Excel, R)<br>• Determine the appropriate analysis to address the business need.<br>• Adopting best practices in terms of producing analytical results and reports. | | | | | |

## 1. Teaching mode (mark all that apply)

| No | Mode of Instruction | Contact Hours | Percentage |
|---|---|---|---|
| 1. | Traditional classroom | 16 | 40% |
| 2. | E-learning | 24 | 60% |
| 3. | Hybrid<br>• Traditional classroom<br>• E-learning | | |
| 4. | Distance learning | | |

## 2. Contact Hours (based on the academic semester)

| No | Activity | Contact Hours |
|---|---|---|
| 1. | Lectures | 16 |
| 2. | Laboratory/Studio | |
| 3. | Field | |
| 4. | Tutorial | 24 |
| 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 | Identify different concepts and techniques used for business analytics | K1 | Lecture, Discussion | Exams, Participation |
| 1.2 | Outline the approach for understanding data types and the appropriate analytical tool to use | K3 | Lecture, Discussion | Exams, Participation |
| 1.3 | Differentiate between the capabilities and use cases of different business analytics tools and techniques | K2 | Lecture, Discussion | Exams, Participation |
| 2.0 | Skills | | | |
| 2.1 | Produce professional business analytics reports | S1 | Lecture, Lab Demonstration, Lab work | Assignments |
| 2.2 | Construct meaningful analytical dashboards | S5 | Lecture, Lab Demonstration, Lab work | Assignments |
| 2.3 | Build statistical models for aiding decision making | S6 | Lecture, Lab Demonstration, Lab work | Assignments |
| 3.0 | Values, autonomy, and responsibility | | | |
| 3.1 | Demonstrate values of integrity, ethical behavior, cooperation, and independence in both academic and personal contexts | V3 | Course syllabus and class discussions | Assignments |
| 3.2 | | | | |
| ... | | | | |

## C. Course Content

| No | List of Topics | Contact Hours |
|---|---|---|
| 1 | Introduction to business analytics | 4 |
| 2 | Analytics on spreadsheets | 4 |
| 3 | Data exploration and visualization | 4 |
| 4 | Descriptive statistical measures | 4 |
| 5 | Probability distribution and data modeling | 4 |
| 6 | Sampling and estimation | 4 |
| 7 | Statistical inference | 4 |
| 8 | Trendline and regression analysis | 4 |
| 9 | Forecasting Techniques | 4 |
| 10 | Introduction to data mining | 4 |
| **Total** | | 40 |

## D. Students Assessment Activities

| No | Assessment Activities * | Assessment timing (in week no) | Percentage of Total Assessment Score |
|---|---|---|---|
| **1** | Attendance | Weekly | 5% |
| **2** | Assignment 1: Descriptive analysis summary report | 3 | 10% |
| **6** | Assignment 2: Data visualization dashboard and reports | 5 | 10% |
| **3** | Midterm Exam | 7 | 15% |
| **4** | Assignment 3: Linear regression analysis and forecasting using R | 10 | 10% |
| **5** | Final Exam | 12 | 50% |

## E. Learning Resources and Facilities

### 1. References and Learning Resources

| | |
|---|---|
| Essential References | Alberto Ferrari, Analyzing Data with Power BI and Power Pivot for Excel, 2016<br>Anil Maheshwari, Data Analytics Made Accessible, 2019 Edition<br>R for Data Science (https://r4ds.had.co.nz/) |
| Supportive References | |
| Electronic Materials | Data files |
| Other Learning Materials | |

### 2. Required Facilities and equipment

| Items | Resources |
|---|---|
| facilities<br>(Classrooms, laboratories, exhibition rooms, simulation rooms, etc.) | Classroom, Demonstration lab |
| Technology equipment<br>(projector, smart board, software) | Data Show, MS Excel, R, (Optional: Tableau) |
| Other equipment<br>(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<br>Department and quality committee | Open discussions with the students<br>Anonymous surveys |
| Effectiveness of students assessment | Chair, Students, External Stakeholders<br>Department and quality committee | Checking marking by the students themselves if it's possible<br>Using the help of other members in reviewing the assignments/exams |
| Quality of learning resources | Chair, Students, External Stakeholders<br>Department and quality committee | Review of course portfolios<br>Instructor assessment by students |

| Assessment Areas/Issues | Assessor | Assessment Methods |
|---|---|---|
| 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. |
| Other | | |

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

## G. Specification Approval Data

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