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| 1. Course code:
 | Qm-250 | 1. Course title:
 | Introduction to Statistics |
| 1. College: College of Business Administration
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| 1. Department: Management and Marketing
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| 1. Program: B Sc.
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| 1. Course credits: 3-credit hour
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| 1. Course NQF Level: 6-7-8
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| 1. NQF Credits: TBA
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| 1. Prerequisite: MATH104
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| 1. Lectures Timing & Location: Online
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| 1. Course web page: Blackboard
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| 1. Course Instructors: Dr. Abdul Sattar Alazzawi

 Prof, Muwaffaq Mohamed Alkobaisi Dr. LAYLA ALI ASHOOR  Dr. Daouia Chebab  Mrs. Nasreen Ashkanani Mrs. Nasreen Khunji |
| 1. Office Hours and Location: TBA
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| 1. Course coordinator: Dr. Abdul Sattar Alazzawi
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| 1. Academic year: 2020-2021
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| 1. Semester:
 |  | **First** | X | **Second** |  | **Summer** |
| 1. Textbook(s): Lind, Marchal and Wathen, (2021), Statistical Techniques for Business and Economics, McGraw-Hill,18th edition, ISBN: 978-1-260-57048-9. (e-book or smartbook version with Connect access).
 |
| * References from the Library (http://www.ac-knowledge.net/uobv3/):

 Davis, G. & Pecar, B. (2010), Business Statistics Using Excel, Oxford University Press, ISBN: 978-0-19-955689-2. |
| 1. Other learning resources used (e.g. e-Learning, field visits, periodicals, software, etc.):

Software: Microsoft Excel , SPSS Connect Platform from McGraw hill Videos from TED and other statistic websites.https://www.ted.com/talks/arthur\_benjamin\_teach\_statistics\_before\_calculus <https://www.ted.com/talks/mark_liddell_how_statistics_can_be_misleading> |
| 1. Course description (as per the published):

Introduction to descriptive statistics; measures of central tendency; measures of variation; probability theory concepts; probability distributions; discrete distribution; binomial distribution; Poisson distribution; normal and standard normal distributions; central limit theorem; the sampling distribution of the sample mean; estimation and confidence intervals; hypothesis testing, one- way ANOVA; simple linear correlation and regression. |
| 1. Course Intended Learning Outcomes (CILOs):
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| CILOs | *Mapping to PILOs* |
| Learning goals | a. Knowledge | b. Globalization | c. Skills | d. Communication | e. Competencies | f. Values |
| Learning objectives | a1: General Knowledge | a2: Specific knowledge | b1: International cross-cultural | b2: Global Perspective | c1: Thinking skills | c2: Analytical skills | d1: Communication (Writing) | d2: Communication (Oral) | e1: Leadership skills | e2: Teamwork | f1: Ethics | f2: Social responsibility |
| 1. Define the basic concepts of statistics and calculate numerically measures related to ungrouped and grouped data to recognize its role in making decisions. | \* |  |  |  | \* | \* |  |  |  |  | \* |  |
| 2. Apply the concepts of probability theory as well as the probability distributions to real situations. | \* |  |  |  | \* |  |  | \* |  |  |  |  |
| 3. Describe and apply the concepts of statistical inference to estimate population means and test hypotheses about these means. |  | \* |  |  | \* | \* |  |  |  |  | \* | \* |
| 4. Explain the issues involved in one-way analysis of variance and apply them to real situations. |  |  |  | \* | \* | \* |  |  |  | \* |  |  |
| 5. Demonstrate how to apply the basic concepts of simple linear regression and correlation. | \* |  |  |  | \* | \* | \* |  |  | \* |  |  |

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| 1. Course assessment:
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| *Assessment Type* | *Details/ Explanation of Assessment in relation to CILOs* | *Number* | *Weight* | *Date(s)* |
| Continuous Assessment (2-hour) | a1, c1, c2 | 5-7 | 15 % | TBA |
| Engagement Activities (1-hour) | a1, c1, c2 | 5-7 | 15 % | TBA |
| Project | c2, d1, e2, f1 | 1 | 30 % | TBA |
| Final Examination(Respondus) | a1, c1, c2 | 1 | 40% | TBA |
| Total |  |  | 100% |  |

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| 1. Description of Topics Covered
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| *Topic Title* *(e.g. chapter/experiment title)* | *Description* |
| Chapter 1: What is Statistics? | Introduction, what is meant by statistics? Types of statistics, Types of variables. |
| Chapters 2, 3, and 4: Describing Data | They are constructing a frequency table, pie, bar graphics, presentation of a frequency distribution in the form of a histogram graphic. The arithmetic means, median, mode, range, standard deviation, variance, and properties of the ungrouped sample and population data. The mean, standard deviation, and variance of grouped sample data. Percentiles, quartiles, deciles, and coefficient of skewness of ungrouped data. |
| Chapter 5: A Survey of Probability Concepts | What is the probability? Approaches to assigning probabilities, Rules for computing probabilities (the addition and multiplication rules), and Contingency tables. |
| Chapter 6: Discrete Probability Distributions | What is a probability distribution? Random variables, Probability distributions (the mean, variance, and standard deviation of a discrete probability distribution), Binomial probability distribution, Poisson distribution. |
| Chapters 7 and 8: The Normal Distribution, the Sampling distribution of the sample mean, and the Central Limit Theorem | Normal and standard normal distributions, applying the standard normal distribution, the sampling distribution of the sample mean, and the central limit theorem. |
| Chapter 9: Estimation and Confidence Intervals | Point estimate and confidence intervals for a population mean using z and t distributions and choosing the appropriate sample size. |
| Chapter 10: One-Sample Test of Hypothesis | What is the hypothesis? What is hypothesis testing? Procedures for testing a hypothesis, types of errors, the two-tailed test of significance using z and t distributions. |
| Chapter 12: Analysis of Variance | ANOVA's purpose, the curve, and features of F distribution, one-way ANOVA test, the general form of an ANOVA table, steps of testing whether the means of more than two populations are equal or different. |
| Chapter 13: Linear Regression and Correlation | The correlation coefficient, the coefficient of determination, Simple regression analysis, the least-squares principle, the regression line, and the estimate's standard error. |

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| 1. Weekly Schedule
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| *Week* | *Date* | *Topics covered* | *CILOs* | *Teaching Method* | *Assessment* |
| *1* | 7-11 Feb. | What is Statistics? | a1, c1,c2, f1 | *2-hour lecture:* |  Continuous,Engagement |
| *1-hour lecture* |
| *2* | 14-18 Feb. | Describing Data | a1, c1, c2 | *2-hour lecture:* |  Continuous,Engagement. excel practice and project. |
| *1-hour lecture* |
| *3* | 21-25 Feb. | Describing Data | a1, c1, c2 | *2-hour lecture:* | Continuous,Engagement. excel practice and project. |
| *1-hour lecture* |
| *4* | 28 Feb – 4 March | A Survey of Probability Concepts | a1,c1,d2 | *2-hour lecture:* |  Continuous,Engagement |
| *1-hour lecture* |
| *5* | 7–11 March | A Survey of Probability Concepts | a1,c1,d2 | *2-hour lecture:* | Continuous,Engagement |
| *1-hour lecture* |
| *6* | 14–18 March | Discrete Probability Distributions | a1,c1,d2 | *2-hour lecture:* | Continuous,Engagement and discussions |
| *1-hour lecture* |
| *7* | 21–25 March | The Normal Distribution and the standard normal distribution | a2,c1,c2,f1,f2 | *2-hour lecture:* | Final, Engagement, Continuous |
| *1-hour lecture* |
| *8* | 28 March–1 April | The Sampling Distribution of the sample mean and the Central Limit Theorem | a2,c1,c2,f1,f2 | *2-hour lecture:* | Final, Engagement, Continuous |
| *1-hour lecture* |
|  | 4-8 April | Student break |  |  |  |
| *9* | 11-15 April | Estimation and Confidence Intervals | a2,c1,c2,f1,f2 | *2-hour lecture:* | Final, Engagement, Continuous, project |
| *1-hour lecture* |
| *10* | 18-22 April | One-Sample Test of Hypothesis | a2,c1,c2,f1,f2 | *2-hour lecture:* | Final, continuous, Engagement, project |
| *1-hour lecture* |
| *11* | 25-29 April | Analysis of variance | b2,c1,c2,e2 | *2-hour lecture:* | Final, Engagement,Continuous, project |
| *1-hour lecture* |
| *12* | 2-6 May | Linear Regression and Correlation | a1, c1, c2,d1,e2 | *2-hour lecture:* | Final, continuous,Engagement, project |
| *1-hour lecture* |
| *13* | 9 – 13 May | Linear Regression and Correlation | a1, c1, c2,d1,e2 | *2-hour lecture:* | Final, Continuous,Engagement, project |
| *1-hour lecture* |
| *14* | 16-20 May | Project Presentation | a1, c2 | *2-hour lecture:* | Report and Presentation |
| *1-hour lecture* |
| *15* | 23-27 May | Project Presentation | a1, c2 | *2-hour lecture:* | Report and Presentation |
| *1-hour lecture* |