هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification
(Bachelor)

Course Title:	Introduction to Statistics
Course Code:	STAT1101
Program:	General course
Department:	STATISTICS
College:	Science
Institution:	Tabuk University
Version:	1
Last Revision Date:	November 2023

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: 3 (2 lectures + 2 practical)					
2. Course type					
A.	☒ University	☐ College	☐ Department	☐ Track	☐ Others
B.	☒ Required		☐ Elective		
3. Level/year at which this course is offered: (…….)					
4. Course general Description:					
This course focuses on the study of the basic concepts of descriptive and inferential statistics with applications which include, Presenting data in charts and tables, Measures of central tendency, Measures of variation, probability theory, Confidence Intervals and Sample Size hypothesis testing.					
5. Pre-requirements for this course (if any):					
None					
6. Pre-requirements for this course (if any):					
None					
7. Course Main Objective(s):					
The main purpose of this course is to introduce the basic concepts of the descriptive and inferential Statistics that are used in different disciplines as well as their applications and interpretation.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	60
2	E-learning		
3	Hybrid Traditional classroom E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	30
3.	Field	
4.	Tutorial	
5.	Others (specify)	
Total		60

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	Memorize the basic concepts of descriptive and inferential statistics, associations and probability.	K1	- Lectures - Lab lectures - Peer Learning	- Midterm exam - Lab activities - Final exam - Lab final exam
1.2	Recognize the statistical functions that are built into Microsoft Excel and how to use them.	K2		
2.0	Skills			
2.1	Calculate measures of central tendency, dispersion, and association, as well as presenting data in tables and charts..	S1	- Lectures - Lab lectures - Peer Learning - Discussion - Solve problems - Group work	- Assignments - Midterm exam - Lab activities - Final exam - Lab final exam
2.2	Apply the probability of an event and probability distribution for discrete and continuous random variables.	S3		
2.4	Argue the computer outputs for statistical techniques	S4		
2.5	Formulate sample size and confidence intervals for means and proportions, as well as	S5		

	performing hypothesis testing for mean and proportion in a single population			
2.6	Communicate the comprehensive ideas of descriptive and inferential statistics, both orally and in writing	S6		
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate ethical responsibilities and analytical integrity using statistical methods	V1	- Cooperative learning and teamwork - Discussion - Self learning	- Oral presentation - Assignments - Lab activities

C. Course Content

No	List of Topics	Contact Hours
1	**Descriptive and Inferential Statistics Definition of Statistics** - Introduction to Statistic - definitions of (sample – population – statistic –parameter). - Type of Statistics - Variables and Types of Data. - Data Collection and Sampling Techniques. **Application using Excel.**	4
2	**Frequency Distributions and Graphs** - Frequency distribution for qualitative discrete and continuous variables. - Relative and percentage frequencies. - Histograms, Frequency Polygons, and Ogives. - Bar Graphs and Pie Graphs. **Application using Excel.**	4
3	**Measures of central tendency.** - (Mean - Median - Mode) and Properties. **Application using, Excel.**	4
4	**Measures of dispersion** - (Range - Variance -Standard Deviation- Coefficient of Variation). **Application using, Excel**	4

5	**Measures of Positions.** - Quartiles and percentiles. - The Five-Number Summary and Boxplots. **Application using, Excel.**	4
6	**Simple Linear Correlation.** - Scatter Plots . - Correlation Co-efficient. **Application using, Excel.**	4
7	**Simple Linear Regression.** - Determination of the Regression Line Equation. - Regression Line Equation and Prediction. **Application using, Excel**	4
8	**Probability and counting rules:** - Sample Spaces and Probability. - Classical Probability. - Probability Rules. - The Addition Rules for Probability - The Multiplication Rules. **Application using, Excel**	4
9	- Conditional Probability . - Counting rules. - Random variable and Discrete probability Distributions. - The Mean, Variance, Standard Deviation, and Expectation. **Application using, Excel**	4
10	**Discrete probability Distributions** - The Binomial Distribution **Application using, Excel.**	4
11	**Discrete probability Distributions** - The Normal Distribution. **Application using, Excel.**	4
12	**ESTIMATION** - Point Estimates. - Interval Estimates. - Estimation of population mean when the variance is known. **Application using, Excel**	4
13	**ESTIMATION** - Estimation of population mean when the variance is unknown. - Confidence Intervals about a proportion. - Confidence Intervals and Sample Size. **Application using, Excel.**	4
14	**Hypothesis Testing** - Steps in Hypothesis Testing. - Hypothesis Testing for a Mean when the variance is known and the sample size greater than 30. **Application using, Excel.**	4
15	**Hypothesis Testing** - Hypothesis Testing for a Mean when the variance is	4

	unknown and the sample size less than or equal 30 . - Hypothesis Testing for a Proportion. **Application using, Excel**	
Total		60

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	4th and 6th week	10%
2.	Midterm exam	8th week	20%
3.	Oral presentation	During semester	5%
.4	Lab activities	3rd – 14th week	15%
5.	Final lab Exam	15th week	10%
6.	Final Exam	17th week	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Allan G. Bluman (2018) "Elementary Statistics, Step by Step Approach", 10th edition, McGraw-Hill. Elementary Statistics the tenth edition (2).pdf
Supportive References	John Schiller , R. Alu Srinivasan . Murray Spiegel" Schaum's Outline of Probability and Statistics" Tenth Ed. (Schaum's Outline Series).
Electronic Materials	https://onlinestatbook.com/Online_Statistics_Education.pdf
Other Learning Materials	David M. Levine & David F. Stephan (2010) .Even you can learn Statistics. Pearson Prentice Hall.

2. Required Facilities and equipment

Items	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classroom: capacity equal 40 students Computer Lab: capacity equal 25 students,

Items	Resources
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show device

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching and assessment	- Faculty Member. - Peer Reviewers.	- Exam questions correction. (Direct) - Homework correction. (Direct) - Course evaluation survey. (Indirect) - Analysis of course reports & student's results. (Indirect)
Extent of achievement of course learning outcomes	- Program administrators. - Quality Assurance experts & Reviewers.	Internal reviewing of the course contents, outcomes, reports & student's results. (Indirect)
Quality of learning resources	Program administrators.	Questionnaires. (Indirect)

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	DEPARTMENT COUNCIL
REFERENCE NO.	18
DATE	11/11/1444

COUNCIL /COMMITTEE	FACULTY COUNCIL
REFERENCE NO.	30
DATE	04/12/1444