

DSQT1004	<b>Business Statistics</b>	L	T	P	C
<b>Version 1.0</b>		3	0	0	3
<b>Pre-requisites/Exposure</b>	set theory, permutation and combination, 12 <sup>th</sup> level mathematics				
<b>Co-requisites</b>	Mathematical symbols and notations and few basic formulae.				

### Course Objectives

1. To develop the students ability to deal with numerical and quantitative issues in business
2. To enable the use of statistical, graphical and algebraic techniques wherever relevant.
3. To have a proper understanding of Statistical applications in Economics and Management.

### Course Outcomes

On completion of this course, the students will be able to:

- CO1. Explain the concept and discuss the key terminology, concepts tools and techniques used in business statistical analysis
- CO2. Apply the knowledge and evaluate the underlying assumptions of analysis tools
- CO3. Analyse and critically discuss the issues surrounding sampling and significance
- CO4. Integrate the concept and discuss critically the uses and limitations of statistical analysis

### Catalog Description

This course is designed to provide students with an understanding of the data and its relevance in business and develop an understanding of the quantitative techniques from statistics. A particular emphasis is placed on developing the ability to interpret the numerical information that forms the basis of decision-making in business. Most of the examples are drawn from a variety of business applications. This course introduces business statistics and fundamental aspects of decision-making. It examines aspects of business and marketing with regards to basic statistical analysis. Students will be provided with the theoretical concepts, tools and methods of statistics as well as the opportunity to work through example problems.

### Course Content

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#### Unit I: 07 Hours

##### Data and Presentation of Data

**Introduction:** Introduction to statistics, Meaning and scope, Limitation of Statistics, Data, Types of data, Methods of data collection, Presentation of data, Tabulation, Frequency Distribution, Graphical Representation.

#### Unit II: 14 Hours

##### Measures of Central Tendency and Dispersion

Measure of Central Tendency

Mean, Median, Quartiles, Deciles, Percentiles, Mode, Geometric mean, Harmonic mean, Merit and demerit of all the averages

### Measure of Variations

Introduction, Range, Mean Deviation, Quartile Deviation, Variance, Standard Deviation, Coefficient of variation, Skewness, kurtosis

**Unit III: 09 Hours**

### Correlation & Regression Analysis

#### Correlation Analysis

Correlation: concept, Type of correlation, Measure of correlation

#### Regression Analysis

Regression: concept, Line of regression X on Y, Line of regression Y on X, Relation between correlation and regression

**Unit IV: 06 Hours**

### Probability

Permutations & Combinations, Events, Classical definition of Probability, Additive law of probability, Multiplicative law of probability

### Text Books

1. Gupta, S.P. and Gupta, M.P.(2007) *Business Statistics*. Sultan Chand & Sons.
2. Gupta, C.B. and Gupta, V. (2004) *An Introduction to Statistical Methods*. Vikas Publishing House.

### Reference Books

1. Bharadwaj, R.S. (2008) *Business Statistics*. Excel Books.
2. Levin, R.I. and Rubin, D.S.(2008) *Statistics for Management*. Dorling Kindersley Pvt Ltd.
3. Black, K. (2012) *Applied Business Statistics*. Wiley.
4. Kapoor, V. K. (2014) *Fundamental of Mathematical Statistics*. Sultan Chand & Sons.

**Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination Examination Scheme:**

Components	Mid term	End term	Internal evaluation	Total
Weightage (%)	20	50	30	100

**Relationship between the Course Outcomes (COs) and Program Outcomes (POs)**

<b>Mapping between COs and POs</b>		
	<b>Course Outcomes (COs)</b>	<b>Mapped Programme Outcomes</b>
<b>CO1</b>	Explain the concept and discuss the key terminology, concepts tools and techniques used in business statistical analysis	<b>PO 1,2,7,8,11,12</b>
<b>CO2</b>	Apply the knowledge and evaluate the underlying assumptions of analysis tools	<b>PO 1,2,3,7,10,11</b>
<b>CO3</b>	Analyse and critically discuss the issues surrounding sampling and significance	<b>PO 1,2,5,7,12</b>
<b>CO4</b>	Integrate the concept and discuss critically the uses and limitations of statistical analysis	<b>PO 7,8,10,11</b>


**Program Outcome/ Course Outcome mapping**

<b>Course Outcomes</b>	<b>CO 1</b>	<b>CO 2</b>	<b>CO 3</b>	<b>CO 4</b>	<b>CO5</b>	<b>CO6</b>
<b>PO 1</b>	3	3	3	2	3	1
<b>PO 2</b>	2	3	3	2	1	3
<b>PO 3</b>	1	2	1	2	1	1
<b>PO 4</b>	1	1	1	3	1	1
<b>PO 5</b>	1	1	3	3	1	1
<b>PO 6</b>	1	1	1	2	1	3
<b>PO 7</b>	3	3	3	3	2	3
<b>PO 8</b>	3	1	1	3	3	3
<b>PSO 9</b>	1	1	1	1	3	2
<b>PSO 10</b>	1	2	1	3	3	3
<b>PSO 11</b>	2	3	1	3	3	3
<b>PSO 12</b>	3	1	3	1	2	2

Course Code	Course Title	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 9	PSO 10	PSO 11	PSO 12
DSQT 1004	Business Statistics	3	3	2	1	2	1	3	3	2	3	2	3
		Students will demonstrate strong conceptual knowledge of management & its functional areas.	Students will demonstrate effective oral and written communication skills in the professional context.	Students will be able to work effectively in teams and demonstrate team building capabilities.	Students will be able to evaluate the legal, social and economic environments of business.	Students will be able to describe the global environment of business.	Students will demonstrate sensitivity towards ethical and moral issues and have ability to address them in the course of business.	Students will be able to apply decision-support tools to business decision making.	Students will be able to apply knowledge of business concepts and functions in an integrated manner.	Students will demonstrate conceptual domain knowledge of the Foreign Trade.	Students will apply decision-support tools to decision making in Foreign Trade.	Students will apply conceptual knowledge of Foreign Trade in an integrated manner.	Students will demonstrate employable and deployable skills for appropriate roles in management.

**1= weakly mapped,**  
**2= moderately mapped,**  
**3= strongly mapped**

## Model Question Paper

<b>Name:</b> <b>Enrolment No:</b>			
<p style="text-align: center;"><b>Course:</b> DSQT1004 Business Statistics</p> <p><b>Programme:</b> BBA (<u>FOREIGN TRADE</u>) <span style="float: right;"><b>Semester:</b> I ODD-2017-20</span></p> <p><b>Time:</b> 03 hrs. <span style="float: right;"><b>Max. Marks:</b> 100</span></p> <p><b>Instructions:</b>  <b>Note: All sections are compulsory &amp; this question paper carries 4 sections.</b></p>			
<b>Section A (20)</b> <b>Q.1 carries 10 sections of 1 mark each and Q.2 carries 5 sections of 2 marks each for correct answer. There is no negative marking</b>			
1.	<p><b>Q.1 Fill in the blanks.</b></p> <p>a) The _____ are the lowest and highest values that can be included in the class.</p> <p>b) The span of a class, that is, the difference between the upper limit and the lower limit, is known as _____.</p> <p>c) The number of observations corresponding to the particular class is known as the _____.</p> <p>d) Mid-point of a class is ascertained as follows: Mid-point of a class=_____</p> <p>e) Struges suggested the following formula for determining the approximate number of classes k=_____</p> <p>f) _____ of table refers to the column headings and _____ of table refers to row headings.</p> <p>g) When we observe the values of a variable at different points of time the series so formed is known as _____.</p> <p>h) A _____ questionnaire attempts to hide the purpose of the study.</p> <p>i) Heights of the histogram bars will be proportional to the</p>	(1*10=10 marks)	CO1  CO2  CO2  CO4  CO4  CO2  CO1  CO1

	<p>ratios of the _____ to the width of the classes.</p> <p>j) Among the central tendency, _____ is unduly affected by the presence of extreme values.</p> <p><b>Q.2 State true and false and give reason.</b></p> <p>a) Statistics deals only with qualitative data.</p> <p>b) Statistical results are true for every individual of the data set.</p> <p>c) Number of inches of rainfall in a city during various months of the year is a discrete data.</p> <p>d) Statistics can be used to full advantage even in the absence of proper understanding of the subject to which it is applied.</p> <p>e) Order of the questions in the questionnaire is not important in collection of data.</p>	(2*5=10 marks)	CO1 CO6 CO 4 CO 2,3 CO 3,4 CO 5,6 CO2,4														
	<p><b>SECTION B (20 Marks)</b></p> <p><b>Attempt any 4 question, each question carries 5 marks only</b></p>																
2.	<p><b>Q.3</b> Explain type of classification of data with example.</p> <p><b>Q.4</b> Explain primary data and secondary data with examples.</p> <p><b>Q.5</b> What are the methods of collection of sample from population? Explain one of them with examples.</p> <p><b>Q.6</b> Explain exclusive and inclusive method of classification of data with example.</p> <p><b>Q.7</b> Write down the property of ideal measure of central tendency</p>	(5*4= 20 marks)	CO 1,2 CO 2,5 CO 4,6 CO 2,5 CO 1,2														
	<p><b>SECTION C(30 marks)</b></p> <p><b>(Attempt any 3 question, each question carries 10 marks only)</b></p>																
3.	<p><b>Q.8</b> Represent the following frequency distribution by a histogram.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td><b>Class Interval</b></td> <td>0-10</td> <td>10-15</td> <td>15-30</td> <td>30-40</td> <td>40-60</td> <td>60-80</td> </tr> <tr> <td><b>Frequency</b></td> <td>8</td> <td>10</td> <td>36</td> <td>44</td> <td>52</td> <td>20</td> </tr> </table> <p><b>Q.9</b> The daily profit of 100 shops are distributed as follows:</p>	<b>Class Interval</b>	0-10	10-15	15-30	30-40	40-60	60-80	<b>Frequency</b>	8	10	36	44	52	20	(10*3=30 Marks)	CO 2,5
<b>Class Interval</b>	0-10	10-15	15-30	30-40	40-60	60-80											
<b>Frequency</b>	8	10	36	44	52	20											

Profit	0-100	100-200	200-300	300-400	400-500	500-600			
<b>Shops</b>	12	18	27	20	17			6 CO 1,2	
Construct a frequency polygon of the above distribution									
<b>Q.10</b> Form a frequency distribution table taking a suitable class-interval for the following data giving the age of 25 employees in a government agency.									
<b>67</b>		<b>31</b>		<b>38</b>		<b>47</b>			
<b>34</b>		<b>61</b>		<b>32</b>		<b>36</b>			
<b>36</b>		<b>34</b>		<b>27</b>		<b>50</b>			
<b>48</b>		<b>43</b>		<b>61</b>		<b>46</b>			
<b>49</b>		<b>45</b>		<b>29</b>		<b>30</b>		CO 2,4	
<b>Q.11</b> Draw ogive curve for the following data pertaining to income distribution for 1500 employees.									
<b>Monthly income (in thousand Rs.)</b>	<b>18-20</b>	<b>21-23</b>	<b>24-26</b>	<b>27-29</b>	<b>30-32</b>	<b>33-35</b>	<b>36</b>		
<b>No. of employees</b>	<b>10</b>	<b>35</b>	<b>140</b>	<b>300</b>	<b>370</b>	<b>320</b>	<b>2</b>	CO 3,5,6	
<b>SECTION D (30 marks)</b> <b>Attempt all the questions &amp; provide the solution</b>									
4.	<b>1. Two brands of tyres are tested with the following results:</b>								
	<b>Life(in thousands of miles)</b>			<b>Brand X</b>					
	<b>20-25</b>			<b>8</b>					
	<b>25-30</b>			<b>15</b>					
	<b>30-35</b>			<b>12</b>					
	<b>35-40</b>			<b>18</b>					
	<b>40-45</b>			<b>13</b>					
	<b>45-50</b>			<b>9</b>					

	<p>a) Calculate average length of life of tyres of both the brands.</p>	<p><b>10 Marks</b></p>	<p>CO 2</p>
	<p>b) Calculate standard deviation of length of the life of tyres of</p>	<p><b>10 Marks</b></p>	<p>CO5</p>
	<p>c) Calculate combined standard deviation of length of the life</p>	<p><b>5 Marks</b></p>	<p>CO6</p>
	<p>d) Which brand of tyres would you use on the fleet of trucks a</p>	<p><b>5 Marks</b></p>	<p>CO3</p>