

Name of Institute: Indus Institute of Management Studies (IIMS)

Name of Faculty: Dr. Tejal Shah

Course code: IMB0206

Course name: STATISTICAL CONCEPTS AND PRACTICES

Pre-requisites: H.S.C

Credit points: 4 Credits

Offered Semester: II

Course Lecturer (weeks 01 – 15)

Full name: Dr. Tejal Shah

Department with siting location: Management

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Consultation times: 2.00 PM to 4.00 PM

Students will be contacted throughout the Session via Mail with important information relating to this Course.

Course Objectives

This course in business statistics focuses on applications of data analysis and statistics to business studies methods for organizing and summarizing data.

1. Students will be able to understand the importance of applying statistical analysis to solve business problems.
2. Apply statistical techniques to solve problems. Interpret and communicate the results of statistical analysis.
3. Analyze and solve basic statistical problems involving: descriptive measures of populations and samples, central tendency and variability, probability theory, correlation and simple linear regression.

Course Outcomes (CO)

Upon completion of this course, students will be able to complete the following key tasks:

1. Student will be able to understand the measurement systems variability, control processes (as in statistical process control or SPC).
2. The student should summarizing data, and to make data-driven decisions
3. Understand the need and application of Correlation Analysis.
4. Understand the need and application of Regression Analysis.
5. Perform time series analysis for forecasting.
6. Understand the concept of probability & random variables and applications of important probability models.

Course Outline

UNIT-I

Introduction to Statistics: Definition, Function & Scope of Statistics. Collection of Data. Classification, Frequency Distribution, Diagrammatic and Graphic Presentation of Data.

Measures of Central Tendency: Arithmetic Mean, Median, Mode, Geometric Mean and their merits and demerits, Weighted Arithmetic Mean.

UNIT-II

Measures of Variation: Methods of studying variation- Range, Average deviation, Standard deviation, Coefficient of Variation.

Correlation Analysis: Methods of Studying Correlation – Karl Pearson’s coefficient of correlation, Spearman’s Rank Correlation for ungrouped frequency distribution, Coefficient of determination.

UNIT-III

Regression Analysis: Equation of Regression Lines for Ungrouped frequency distribution.

Time Series Analysis: Meaning of Time Series. Analysis of Time Series. Components of Time Series. Model of Time Series. Methods of Measuring Secular Trends (T). Methods of Determination of Seasonal Fluctuations (S). Measurement of Cyclical Variations(C). Measurement of Irregular Variations.

UNIT-IV

Basic Concepts in Probability: Counting Rules, Permutations and Combinations. Venn diagram, Events, Set Operations on Events, Dependent and Independent Events, Introduction to Probability, Conditional Probability, Addition and Multiplication Rules of probability.

Method of delivery

Lectures, PPT, case studies, experiential exercises, Active Learning Techniques.

Study time

Four hours per week

CO-PO Mapping (PO: Program Outcomes)

	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	2	3	2	1	2
CO 2	3	1	3	2	2	2
CO 3	3	-	3	2	1	1
CO 4	3	2	3	2	-	3
CO 5	3	-	3	2	1	2
CO 6	3	2	-	3	2	3

Blooms Taxonomy and Knowledge retention (For reference)

(Blooms taxonomy has been given for reference)



Figure 1: Blooms Taxonomy

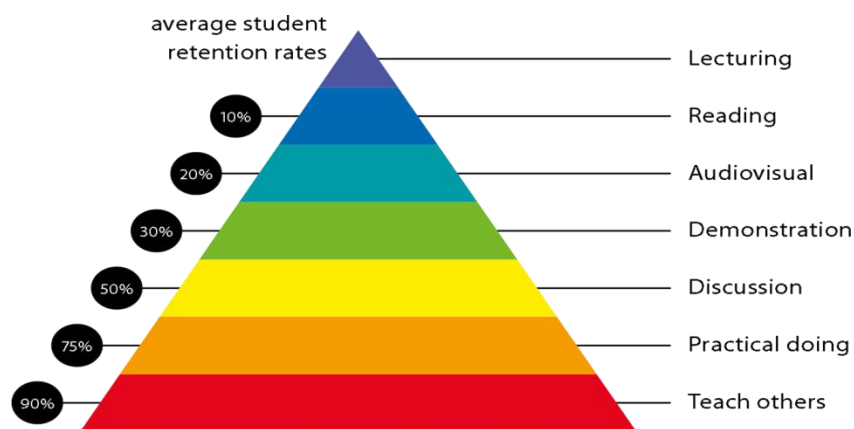


Figure 2: Knowledge retention

Graduate Qualities and Capabilities covered

(Qualities graduates harness crediting this Course)

General Graduate Qualities	Specific Department of _____ Graduate Capabilities
<p>Informed Have a sound knowledge of an area of study or profession and understand its current issues, locally and internationally. Know how to apply this knowledge. Understand how an area of study has developed and how it relates to other areas.</p>	<p>1 Professional knowledge, grounding & awareness</p>
<p>Independent learners Engage with new ideas and ways of thinking and critically analyze issues. Seek to extend knowledge through ongoing research, enquiry and reflection. Find and evaluate information, using a variety of sources and technologies. Acknowledge the work and ideas of others.</p>	<p>2 Information literacy, gathering & processing</p>
<p>Problem solvers</p>	<p>4 Problem solving skills</p>

Take on challenges and opportunities. Apply creative, logical and critical thinking skills to respond effectively. Make and implement decisions. Be flexible, thorough, innovative and aim for high standards.	
Effective communicators Articulate ideas and convey them effectively using a range of media. Work collaboratively and engage with people in different settings. Recognize how culture can shape communication.	5 Written communication
	6 Oral communication
	7 Teamwork
Responsible Understand how decisions can affect others and make ethically informed choices. Appreciate and respect diversity. Act with integrity as part of local, national, global and professional communities.	10 Sustainability, societal & environmental impact

Practical work:

1. ASSIGNMENT -1 Theory questions from unit 1
2. ASSIGNMENT -2 Sums from unit 2
3. ASSIGNMENT -3 Problem-solving
4. ASSIGNMENT -4 Practical Problems

Lecture/tutorial times

4 Lectures per week

Attendance Requirements

The University norms states that it is the responsibility of students to attend all lectures, tutorials, seminars and practical work as stipulated in the Course outline. Minimum attendance requirement as per university norms is compulsory for being eligible for mid and end semester examinations.

Details of referencing system to be used in written work

Text books

1. A Test Book of Business Statistics by Dr. Padmalochan Hazarika S.Chand Publication
2. Fundamental of Statistics by S.C. Gupta HimalayaPublication
3. Gupta and Gupta, Business Statistics. (Sultan Chand & Sons: New Delhi).

Additional Materials (Reference Books)

1. Richard I. Levin and David S. Rubin.(2009), Statistics for Management.(Pearson: NewDelhi)
Latest Edition

- 2.Hogg (2004) Introduction to Mathematical Statistics (Pearson: NewDelhi)
3.Chandan, J. (2003), Statistics for Business Economics. (VikasPublishing House)

ASSESSMENT GUIDELINES

Your final course mark will be calculated from the following:

Example:		
Assignment	5% (week 4)	Objective (1-3)
Quiz	10% (week 8)	Objective (1-4)
Assignment _II	5% (week 8)	Objective (1-4)
Mid semester	40% (due week 10)	Objectives (2-5)
Final exam (<i>closed book</i>)	40%	Objectives (1-5)

SUPPLEMENTARY ASSESSMENT

Students who receive an overall mark less than 40% in mid semester or end semester will be considered for supplementary assessment in the respective components (i.e mid semester or end semester) of semester concerned. Students must make themselves available during the supplementary examination period to take up the respective components (mid semester or end semester) and need to obtain the required minimum 40% marks to clear the concerned components.

Late Work

Late assignments will not be accepted without supporting documentation. Late submission of the reports will result in a deduction of -% of the maximum mark per calendar day

Format

All assignments must be presented in a neat, legible format with all information sources correctly referenced. **Assignment material handed in throughout the session that is not neat and legible will not be marked and will be returned to the student.**

Retention of Written Work

Written assessment work will be retained by the Course coordinator/lecturer for two weeks after marking to be collected by the students.

University and Faculty Policies

Students should make themselves aware of the University and/or Faculty Policies regarding plagiarism, special consideration, supplementary examinations and other educational issues and student matters.

Plagiarism - Plagiarism is not acceptable and may result in the imposition of severe penalties. Plagiarism is the use of another person's work, or idea, as if it is his or her own - if you have any doubts at all on what constitutes plagiarism, please consult your Course coordinator or lecturer. Plagiarism will be penalized severely.

Do not copy the work of other students.

Do not share your work with other students (except where required for a group activity or assessment).

Course schedule(subject to change)

(Mention quiz, assignment submission, breaksetcas well in the table under the Teaching Learning Activity Column)

Week #	Topic & contents	CO Addressed	Teaching Learning Activity (TLA)
Weeks 1	Introduction: definition, scope ,functions, collection of data ,classification of data, frequency distribution	CO1 & CO2	Lecture
Weeks 2	Diagrammatic and graphical presentation of data	CO1 & CO2	Lecture
Week 3	Measures of central tendency Mean, Median, Mode	CO1,CO2 &CO3	Lecture
Week 4	Measures of variation: range ,average deviation, Standard deviation ,coefficient of variation	CO1,CO2 &CO3	Lecture
Week 5	Correlation analysis: karl pearson, spearsman's rank (methods), Coefficient of determination,	CO3, C04	Lecture
Week 6	Regression analysis, Equation for regression lines, Methods of measuring secular trends	CO3, C04	Lecture
Week 7	Time series analysis: meaning and analysis, Components and model of time series	CO4, C05	Lecture
Week 8	Methods of determination of seasonal fluctuations, Measurement of cyclical variations	CO4, C05	Lecture
Week 9	Measurement of irregular variations	CO3, C05	Lecture

Week 10	Introduction to probability, Probability rules,	CO5, C06	Lecture
Week 11	Mid Sem Exam	CO4	Lecture
Week 12	permutations and its types	CO4, C06	Lecture
Week 13	combinations, Venn diagrams	CO3, C04	Lecture
Week 14	Conditional probability, Joint Probability	CO3, C06	Lecture
Week 15	additional and multiplications rules of probability	CO4, C06	Lecture