

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

Name of Faculty: Dr. Tejal Shah

Course code: IMB0404

Course name: QUANTITATIVE TECHNIQUES

Pre-requisites: H.S.C

Credit points: 4 Credits

Offered Semester: IV

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. To impart the basic science of gathering, analyzing and using data to identify and to resolve Managerial and decision making problems.
2. To develop skills in structuring and analyzing business problems using quantitative techniques.
3. To develop aptitude and statistical thinking approach to business problems

Course Outcomes (CO)

On successful completion of this course students will be able to:

- Explain and discuss the researcher's work (model)
- Elucidate basic statistical concepts and tests used in educational research
- Use statistics programs
- Demonstrate their competence and confidence in using descriptive statistics
- Demonstrate their competence and confidence in using inferential statistics in general and to the use of significance testing in particular
- Understand and master the handling of data and employ proper analyses

Course Outline

UNIT-I

Introduction , Tables and graphs
Measures of central tendency and dispersion
Permutations and combinations, Probability

UNIT-II

Discrete probability distributions (Binomial, Poisson, Hyper geometric)
Continuous probability distributions (Normal dist., Uniform, Exponential)
Sampling and sampling distributions
Estimation – point and interval estimation

UNIT-III

Testing of hypothesis for single population – testing about mean, proportion and a variance (large and small samples)

Testing of hypothesis for two populations – testing about the difference in means, proportions and variances (large and small samples)

Analysis of variance and design of experiments – completely randomized design (One-way ANOVA); factorial design (Two-way ANOVA)

Unit IV

Chi-square goodness of fit test and test of independence, Regression
Analysis, Time-Series Forecasting and Index Numbers

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)

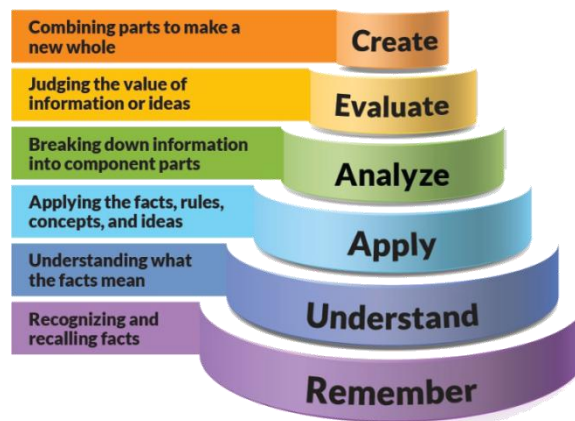


Figure 1: Blooms Taxonomy

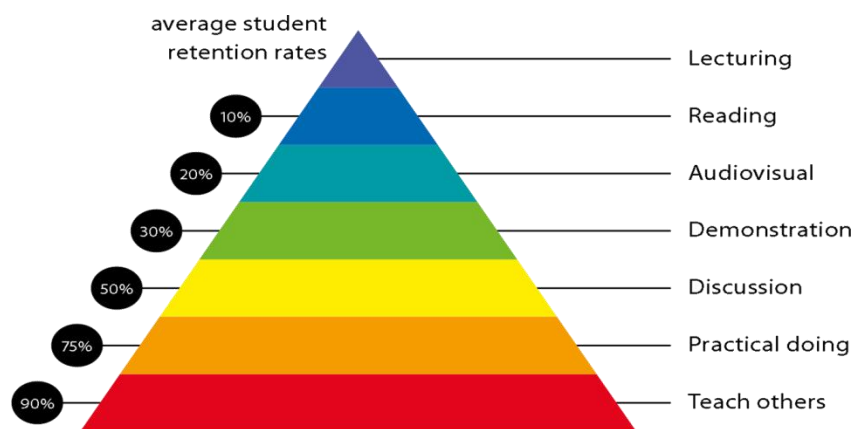


Figure 2: Knowledge retention

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 hours 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 , Tables and graphs Measures of central tendency and dispersion	CO1 & CO2	Lecture
Weeks 2	Permutations and combinations, Probability, Types of Probability, Rules of Probability	CO1 & CO2	Lecture
Week 3	Probability Distribution: Types of Distribution, Discrete probability distributions : Binomial	CO1, CO2 & CO3	Lecture
Week 4	Discrete probability distributions: Poisson, Hyper geometric	CO1, CO2 & CO3	Lecture
Week 5	Continuous probability distributions (Normal dist., Uniform, Exponential)	CO3	Lecture
Week 6	Sampling and sampling distributions, Types of Sampling, Advantages of Sampling, needs of sampling	CO3	Lecture
Week 7	Estimation – point and interval estimation	CO4	Lecture
Week 8	Testing of hypothesis for single population – testing about mean, proportion and a variance (large and small samples)	CO4	Lecture
Week 9	testing about proportion and a variance (large and small samples)	CO4	Lecture

Week 10	Testing of hypothesis for two populations – testing about the difference in means, proportions and variances (large and small samples)	CO4	Lecture
Week 11	Mid Sem		
Week 12	Analysis of variance and design of experiments – completely randomized design (One- way ANOVA); factorial design (Two-way ANOVA)	CO5	Lecture
Week 13	Chi-square goodness of fit test and test of independence	CO3, C04	Lecture
Week 14	Regression Analysis	CO3, C06	Lecture
Week 15	Time-Series Forecasting and Index Numbers	CO4, C06	Lecture