

Programme	BSc Statistics				
Course Code	STA1MN106 (P)				
Course Title	Introductory statistics with JASP				
Type of Course	Minor				
Semester	I				
Academic Level	100 - 199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basic mathematical and computer skills. Basic knowledge of probability theory.				
Course Summary	Introduce statistical concepts with JASP software, covering data collection, questionnaire types, measurement scales, and graphical representation, while familiarizing students with installation, file manipulation, and descriptive statistics application, preparing for practical analysis in Psychology.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand data collection methods and questionnaire types and critically evaluate ethical implications of statistical methods aligning with human	U	C	Instructor-created exams / Quiz

	values.			
CO2	Identify the differences between primary data and secondary data	U	C	Practical Assignment / Observation of Practical Skills
CO3	Assess scales of measurement, reliability, and validity and analyze data to help entrepreneurial decisions using critical thinking skills..	U	C	Seminar Presentation / Group Tutorial Work/ Instructor-created exams
CO4	Design survey questions that minimize bias and encourage accurate response.	U	C	Instructor-created exams / Home Assignments/ Instructor-created exams
CO5	Formulate and represent frequency distributions graphically.	U	F	One Minute Reflection Writing assignments/ Instructor-created exams
CO6	Master JASP software for descriptive statistics.	Ap	P	Viva Voce/ Instructor-created exams
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs (45+30)	Marks
I	Organizing a Statistical Survey		10	15
	1	Statistical Survey—An Introduction	2	
	2	Planning the Survey	1	
	3	Specification of the Purpose	1	
	4	Scope of the Survey	1	
	5	Sources of Data	2	
	6	Methods of collecting primary data	2	

	7	Drafting the questionnaire	1	
	Unit 1: 2.2 Ref[1]			
	Unit 2: 2.3 Ref[1]			
	Unit 3: 2.3 Ref[1]			
	Unit 4: 2.3 Ref[1]			
	Unit 5: 2.5 Ref[1]			
	Unit 6: 3.3 Ref[1]			
	Unit 7: 3.8 Ref[1]			
II	An introduction to Research Design		9	20
	6	Introduction of Psychological measurement and variable	2	
	7	Scales of measurement	2	
	8	Assessing the reliability of measurement	3	
	9	Assessing validity of a study	2	
	Unit 6: 2.1 Ref[1]			
	Unit 7: 2.2 Ref[1]			
	Unit 8: 2.3 Ref[1]			
	Unit 9:2.6 Ref[1]			
III	Graphical Representation		15	20
	9	Graphical representation of a Frequency Distribution	2	
	10	Histogram	1	
	11	Frequency Polygon	1	
	12	Ogives	3	
	13	Smoothed frequency curve	2	
	14	Technique of Constructing Graphs	2	
	15	Graphs of Time Series or Line Graphs	2	

	16	Range Chart	1	
	17	Band Graph	1	
	Unit 9: 2.2 Ref[2] Unit 10: 2.2.1 Ref[2] Unit 11: 2.2.2 Ref[2] Unit 12: 2.11.1 Ref[2] Unit 13: 6.40 Ref[1] Unit 14: 6.24 Ref[1] Unit 15: 6.24 Ref[1] Unit 16: 6.29 Ref[1] Unit 17: 6.30 Ref[1]			
IV	An Introduction to JASP		11	15
	18	Installing JASP	1	
	19	Loading data in JASP	1	
	20	Changing data from one measurement scale to another	1	
	21	Calculating Mean, Median and Mode in JASP	4	
	22	Calculating Range, standard deviation and variance using JASP	4	
	Sections from References: Unit 18: 3.1 Ref[3] Unit 19: 3.3 Ref[3] Unit 20: 3.5 Ref[3] Unit 21: 4.1 Ref[3] Unit 22: 4.2 Ref[3]			
V	PRACTICUM		30	

Do practice problems using JASP software from any 5 units of the given list and one additional problem decided by the teacher-in-charge, related to the content of the course. Other units listed here may be used as demonstrations of the concepts taught in the course.			
1	Standard scores in JASP		
2	Saving image files		
3	Histogram		
4	Box plots		
5	Drawing multiple box plots		
6	Examples on Nominal scale		
7	Examples on ordinal scale		
8	Examples on Interval scale		
9	Examples on Ratio scale		
<p>Sections from References:</p> <p>Unit 1: 4.5 Ref[3]</p> <p>Unit 2: 5.3 Ref[3]</p> <p>Unit 3: 5.1 Ref[3]</p> <p>Unit 4:5.2 Ref[3]</p> <p>Unit 5:5.2.2 Ref[3]</p> <p>Unit 6:2.2.1Ref[3]</p> <p>Unit7:2.2.2 Ref[3]</p> <p>Unit 8:2.2.3 Ref[3]</p> <p>Unit 9:2.2.4 Ref[3]</p>			

Books and References:

1. S.P Gupta (2021), Statistical Methods 46 th Edition
2. Gupta, S.C. and Kapoor, V.K. (1997) Fundamentals of Mathematical Statistics. Sultan Chand and Sons, New Delhi
3. Navarro, D.J., Foxcroft, D.R., & Faulkenberry, T.J. (2019). Learning Statistics with JASP: A Tutorial for Psychology Students and Other Beginners. (Version).

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PSO 5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	3	-	-	-	2	1	2	-	-	-	3
CO 2	-	-	-	-	-	3	2	2	-	-	-	-
CO 3	-	2	-	3	2	-	2	2	2	-	3	-
CO 4	-	-	-	-	3	-	3	1	2	-	-	-
CO 5	3	-	-	-	-	-	2	2	-	-	-	-
CO 6	-	-	3	-	-	3	1	1	-	3	2	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments (20%)
- Final Exam (70%)

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓	✓		✓
CO 3	✓			✓
CO 4	✓	✓		✓
CO 5		✓		✓
CO 6	✓			