

Programme

P.G. Diploma in Statistics

&

Two-year Master's in Statistics

**Course /Credit Structure for One Year PG Diploma / Two Years
Master's in Statistics**

under

NEP 2020



University of Kashmir. Srinagar.

(NAAC Accredited grade A++)

Post-Graduate Department of Statistics, University of Kashmir

Introduction:

Master's in Statistics is a two years (four semesters) program under NEP 2020. The program consists of minimum of 80 credits and maximum of 96 credits. For each semester the student can opt minimum of 20 credits and maximum of 24 credits.

Aims and Objectives:

The program emphasizes both foundational and contemporary applications of statistics. It is designed to equip students with a deep understanding of statistical concepts for advanced studies, while also providing the practical skills required for careers in the corporate sector. Key features of the program include field projects, internships, research initiatives, and a balanced curriculum covering both core and applied areas of statistics.

Programme Learning Outcomes (PLO's)

On completion of this program students will have,

PLO1: *Advanced Statistical Knowledge:* Graduates will demonstrate a comprehensive understanding of advanced statistical theories, methodologies, and their real-world applications across various domains.

PLO2: *Data Analysis and Interpretation:* Graduates will be proficient in using statistical software and tools to analyse complex data sets, interpret results accurately, and make informed decisions.

PLO3: *Research and Problem-Solving Skills:* Graduates will be able to design and conduct independent statistical research, develop models, and apply quantitative methods to solve practical and theoretical problems.

PLO4: *Professional and Ethical Competence:* Graduates will exhibit effective communication skills, teamwork, and adherence to ethical standards in statistical practice, preparing them for academic, research, or industry roles.

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Course Structure for One Year PG Diploma/ Two Year Master's Programme in Statistics with Coursework & Research

PG Diploma in Statistics: Programme Code: DSTS

Two-year Master's Programme in Statistics: Programme Code: MSTS

1 st Semester									
Course	Course Code	Course Title	Course Level	Credit	Total Credit	Max. Marks			Credit Distribution
						Internal	External	Total	L: T/P
Core Courses	MSTSCST125	Sampling Techniques	400	4	12 credits	30	70	100	4:0
	MSTSCAP125	Advanced Probability Theory	400	4		30	70	100	4:0
	MSTSCPR125	Practical Statistics-I	400	4		30	70	100	0:4
Discipline Centric Electives	MSTSDRM125	Research Methodology and Scientific Documentation	500	4	Choose minimum two Courses from Discipline Centric Electives (08 credits)	30	70	100	4:0
	MSTSDMM125	Mathematical Methods for Statistics	400	4		30	70	100	4:0
	MSTSDSC125	Statistical Computing using Minitab	400	4		30	70	100	4:0
	MSTSDSL125	Statistical Learning	400	4		30	70	100	4:0

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2 nd Semester									
Course	Course Code	Course Title	Course Level	Credit	Total Credit	Max. Marks			Credit Distribution
						Internal	External	Total	L: T/P
Core Courses	MSTSCSI225	Statistical Inference	400	4	12 credits	30	70	100	4:0
	MSTSCLM225	Linear Models and Regression Analysis	400	4		30	70	100	4:0
	MSTSCPR225	Practical Statistics-II	400	4		30	70	100	0:4
Discipline Centric Electives	MSTSDOR225	Operations Research for decision Making	500	4	Choose minimum two Courses from Discipline Centric Electives (08 credits)	30	70	100	4:0
	MSTSDSR225	Statistics With R	400	4		30	70	100	4:0
	MSTSDDA225	Data Analytics using SPSS	400	4		30	70	100	4:0
	MSTSDDS225	Data Science	400	4		30	70	100	4:0

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3 rd Semester (CW+CW)									
Course	Course Code	Course Title	Course Level	Credit	Total Credit	Max. Marks			Credit Distribution
						Internal	External	Total	L: T/P
Core Courses	MSTSCDE325	Design and Analysis of Experiments	500	4	12 credits	30	70	100	4:0
	MSTSCSI325	Statistical Inference-II	500	4		30	70	100	4:0
	MSTSCPR325	Practical Statistics-III	500	4		30	70	100	0:4
Discipline Centric Electives	MSTSDAO325	Advanced Operations Research	500	4	Choose minimum two Courses from Discipline Centric Electives (08 credits)	30	70	100	4:0
						30	70		
	MSTSDIT325	Information Theory	500	4		30	70	100	4:0
						30	70		
	MSTSDBS325	Bio-Statistics	500	4		30	70	100	4:0
						30	70		
	MSTSDBI325	Bayesian Inference	500	4		30	70	100	4:0

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4 th Semester (CW+CW)									
Course	Course Code	Course Title	Course Level	Credit	Total Credit	Max. Marks			Credit Distribution
						Internal	External	Total	L: T/P
Core Courses	MSTSCMA425	Multivariate Analysis	500	4	12 credits	30	70	100	4:0
	MSTSCSP425	Survey Project	500	4		30	70	100	0:4
	MSTSCPR425	Practical Statistics-IV	500	2		14	36	50	0:2
	MSTSCOS425	Order Statistics	500	2		14	36	50	2:0
Discipline Centric Electives	MSTSDSP425	Stochastic Processes	500	4	Choose minimum two Courses from Discipline Centric Electives (08 credits)	30	70	100	4:0
	MSTSDIS425	Industrial Statistics and Reliability Theory	500	4		30	70	100	4:0
	MSTSDSA425	Survival Analysis	500	4		30	70	100	4:0
	MSTSDEC425	Econometrics	500	4		30	70	100	4:0

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Two Years PG. in STATISTICS with Coursework (CW +R)

3 rd Semester (CW+R)									
Course	Course Code	Course Title	Course Level	Credit	Total Credit	Max. Marks			Credit Distribution
						Internal	External	Total	L: T/P
Core Courses	MSTSCDE325	Design and Analysis of Experiments	500	4	12 credits	30	70	100	4:0
	MSTSCSI325	Statistical Inference-II	500	4		30	70	100	4:0
	MSTSCPR325	Practical Statistics-III	500	4		30	70	100	0:4
Discipline Centric Electives	MSTSDAO325	Advanced Operations Research	500	4	Choose minimum two Courses from Discipline Centric Electives (08 credits)	30	70	100	4:0
						30	70		
	MSTSDIT325	Information Theory	500	4		30	70	100	4:0
						30	70		
	MSTSDBS325	Bio-Statistics	500	4		30	70	100	4:0
						30	70		
	MSTSDBI325	Bayesian Inference	500	4		30	70	100	4:0

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4 th Semester (CW+R)					
Course Code	Course Title	Course Level	Credit	Total Credits	Credit Distribution
MSTSPRP425	Research Project/thesis	500	20 credits	20 credits	0/20
TOTAL MINIMUM CREDITS (AGGREGATE)				80 credits	

Two Years PG. in STATISTICS with Coursework (R +R)

3 rd and 4 th Semester (R+R)						
Semester	Course Code	Course Title	Course Level	Credit	Total Credits	Credit Distribution
3 rd Semester	MSTSPRP425	Research Project/ Thesis	500	20+20=40 credits	40 credits	0/40
4 th Semester						
TOTAL MINIMUM CREDITS (AGGREGATE)					80 credits	

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Types of Courses

Core Course means a compulsory course of a programme which aims at imparting fundamental, comprehensive and advanced knowledge of the programme

Discipline Centric Elective Course means a course of choice which allows a student to study a specialized area(s) of programme as per his/her interest.

Duration Of Theory / Practical Course

Duration of one credit theory course will be 15 hours and duration of one credit practical course will be 30 hours

Marks Distribution

Twenty eight percent of marks are allocated for Continuous Assessment Tests and seventy two percent for end term examination tests.

Scheme of Examinations for Theory Courses

Examination	Syllabus to be covered in the examination	Time allotted for the examination	(Marks Allotted)
1st Continuous Assessment Test	Unit I and Unit II	45 min	14
2nd Continuous Assessment Test	Unit III and Unit IV	45 min	14
End term Examination	Unit I , Unit II, Unit III and Unit IV	2 hours and 30 min	72
Total			100

Continuous Assessment Test

The question paper for the 1st and 2nd Continuous Assessment Tests (CAT) will consist of 14 multiple-choice questions, each carrying 1 mark. Students must answer all questions. No preparatory holidays will be granted for the Continuous Assessment Tests.

End term Examination

The question paper for end term Examination will comprise of three sections, Section-A, Section-B and section C.

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Section-A will have eight very short answer type questions (02 questions from each unit) of 02 marks each. ($8 \times 2 = 16$ marks)

Section-B will have four questions, one from each unit and each carrying 07 marks ($4 \times 7 = 28$ marks). In this Section, students are required to attempt all the four questions.

Section C will consist of four questions each carrying 14 marks and student is required to attempt only two questions. ($2 \times 14 = 28$ marks)

Scheme of Examination for Practical Courses

The Practical Examination will be conducted by a Board of Examiners comprising the Head of the Department, one or two senior professors from the relevant department, the concerned teacher and an external expert appointed by the controller of examinations from a panel recommended by the Head of the Department. The practical performance of the students will be evaluated based on a written examination followed by a viva-voce.

Scheme of Examination for Survey Project

The project work will commence at the beginning of the fourth semester under the guidance of approved supervisors selected from the department's faculty. Each student is required to prepare a project report based on real-life data (either primary or secondary) pertaining to Industry, Government, Private Organizations, or any other relevant field. The report must be submitted within the prescribed timeframe. Evaluation will be conducted jointly by an internal and an external examiner, based on both the submitted report and a viva-voce examination. The mark distribution is as follows:

- Internal Assessment: 28 Marks
- Project Report Evaluation and Viva-voce: 72 Marks

Course Learning Outcomes (CLOs) Mapping with Program Learning Outcomes (PLOs)

The Course Learning Outcomes (CLOs) are systematically aligned with the Program Learning Outcomes (PLOs) to ensure that each course effectively contributes to the overarching objectives of the postgraduate program in Statistics. This alignment promotes coherence between individual course outcomes and the program's broader academic goals. Each CLO is evaluated against the relevant PLOs to assess its contribution towards fulfilling the intended educational outcomes. This structured mapping process facilitates transparent monitoring of course effectiveness and supports

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the continuous enhancement of both course content and overall program structure. Consequently, CLO-PLO mapping plays a crucial role in academic planning and quality assurance within the department. The levels of correlation used in the mapping are defined as follows:

Number	Meaning	Description
3	High Correlation	The Course Outcome is strongly contributing to the Program Outcome. There is a direct and significant relationship.
2	Moderate Correlation	The Course Outcome is moderately contributing to the Program Outcome. There is a partial but important relationship.
1	Low Correlation	The Course Outcome is minimally contributing to the Program Outcome. The connection is weak but present.
0	No Correlation	The Course Outcome does not contribute to the Program Outcome at all.