

# KURUKSHETRA UNIVERSITY, KURUKSHETRA

## Curriculum for M.Sc. Statistics (CBCS)

### Scheme of Examination

(Effective from the Academic Session 2020-2021)

The duration of the course leading to the degree of Master of Science (M.Sc.) Statistics shall be of two academic years, comprising of four semesters. The examinations of Semester –I and Semester- III are usually held in the month of December and those of Semester-II and Semester-IV in the month of May on the dates being notified by the controller of examinations.

There will be four theory papers and one practical paper in each semester. In addition, there will also be two Open Elective Papers, one each in Semester-II & III and will be opted by the students from the list of the Open Elective Papers of the other departments of faculty of Sciences.

Every student will be required to go for Training for at-least two weeks in reputed Institute/Industry and after the completion of the training; the student will submit the Training Report. The evaluation of the Report will be done jointly by the Practical Examiners (External & Internal) in the IV<sup>th</sup> semester.

### The details of the Scheme of Examination Semester-I

Paper No.	Nomenclature	Paper type	Credits	Contact hours per week	Internal marks***	External marks	Total marks	Duration of Exam (Hours)
ST-101	Measure and Probability Theory	Core	4	4	25	75	100	Three
ST-102	Statistical Methods and Distribution Theory	Core	4	4	25	75	100	Three
ST-103	Linear Algebra and Numerical Analysis	Core	4	4	25	75	100	Three
ST-104	Industrial Statistics	Core	4	4	25	75	100	Three
ST-105	Practical (Calculator and SPSS/R based)	Core	4	8	25	75	100	Four
			Total Credits-20		Total Marks -500			

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**Semester – II**

Paper No.	Nomenclature	Paper type	Credits	Contact Hours per week	Internal marks***	External marks	Total marks	Duration of Exam (Hours)
ST-201	Applied Statistics	Core	4	4	25	75	100	Three
ST-202	Operations Research	Core	4	4	25	75	100	Three
ST-203	Inference-I	Core	4	4	25	75	100	Three
ST-204	Programming with C and R	Core	4	4	25	75	100	Three
ST-205	Practical (Computer based)	Core	4	8	25	75	100	Four
OE-	One open elective paper is to be opted by the students of Department out of the Open Elective papers offered by the departments of the Faculty of Sciences (other than the Department of Statistics & O.R)	Open Elective	2	2	15	35	50	Three
		Total Credits-22			Total Marks- 550			
OE-209	<b>Statistics -I</b> (This Open Elective paper will be offered by the Department of Statistics & O.R. to the students of other Departments of the Faculty of Sciences)		2	2	15	35	50	Three

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**Semester –III**

Paper No.	Nomenclature		Paper type	Credits	Contact Hours per week	Internal marks***	External marks	Total marks	Duration of Exam. (Hours )
ST-301	Sampling Theory		Core	4	4	25	75	100	Three
ST-302	Inference-II		Core	4	4	25	75	100	Three
ST-303 & ST-304	Opt. (i) Optimization Techniques	Any Two	Elective **	4	4	25	75	100	Three
	Opt.(ii) Stochastic Processes		Elective **	4	4	25	75	100	Three
	Opt.(iii) Programming with Python								
	Opt.(iv) Econometrics								
	Opt. (v) Bio-Statistics								
	Opt. (vi) Statistical Methods in Epidemiology								
	Opt. (vii) Real and Complex Analysis								
ST-305	Practical (Computer based)		Core	4	8	25	75	100	Four
OE-	One open elective paper is to be opted by the students of Department out of the Open Elective papers offered by the departments of the Faculty of Sciences (Other than the Department of Statistics & O.R)		Open Elective	2	2	15	35	50	Three
				Total Credits-22			Total Marks-550		
OE-309	<b>Statistics -II</b> (This Open Elective paper will be offered by the Department of Statistics & O.R. to the students of other Departments of the Faculty of Sciences)			2	2	15	35	50	Three

## M.Sc. Statistics Semester – IV

Paper No.	Nomenclature	Paper type	Credits	Contact Hours per week	Internal marks**	External marks	Total marks	Duration of Exam. (Hours )
ST-401	Multivariate Analysis	Core	4	4	25	75	100	Three
ST-402	Linear Estimation and Design of Experiments	Core	4	4	25	75	100	Three
ST-403 & ST-404	Opt. (i) Theory of Queues Opt.(ii) Reliability and Renewal Theory Opt.(iii) Machine Learning Opt. (iv) Information Theory Opt.(v) Game Theory Opt. (vi) Actuarial Statistics Opt. (vii) Official Statistics	Any Two	4	4	25	75	100	Three
		Elective **	4	4	25	75	100	Three
ST-405	Practical (Calculator and SPSS/SYSTAT based)	Core	4	8	25	75	100	Four
Total Credits-20				Total Marks-500				

Note:

\*Total Credits for Two Academic Years: 84 (42+42).

\*\* The elective papers will be offered subject to availability of teaching faculty.

\*\* The marks of internal assessment/Internal marks will be based on the following criteria

**For Theory Papers:**

(i) Class Test-I : 20 Marks

Class Test-II

(ii) Attendance : 5Marks

**For Practicals:**

(i) Seminar/Viva-Voce/Test for each practical paper : 20 Marks

(ii) Attendance : 5Marks

**For Open Elective theory papers**

(i) Class Test-I : 10 Marks

Class Test-II

(ii) Attendance : 5 Marks

Marks for attendance will be given as under:

(1) 91% on wards :5 Marks

(2) 81%to90% : 4Marks

(3) 75%to 80% : 3 Marks

(4) 70%to 74% : 2 Marks#

(5) 65%to 69% : 1 Mark#

# For students engaged in co-curricular activities of the Department /Institute only / authenticated medical grounds duly approved by the concerned Chairperson.