Karmaveer Bhaurao Patil University, Satara

Faculty of Science and Technology

M. Sc. (Statistics)

Programme and Credit Structure as per NEP2020

Title: The degree shall be titled as **'Master of Science (Statistics)** under the Faculty of Science and Technology.

M.Sc. Sem. I & II: To be implemented from Academic Year 2024-25
M.Sc. Sem. III & IV: To be implemented from Academic Year 2025-26

Programme Outcomes for M. Sc. (Statistics)

PO. NO	Programme Outcomes After completing M.Sc. (Statistics) programme
PO-1	Understand the fundamentals and advancements of subject
PO-2	Study, plan, and conduct experiments in the labs to validate the ideas principles, and theories acquired in the classrooms
PO-3	Enhance scientific knowledge of the subject
PO-4	Define their area of focus in academia, research, and development.
PO-5	Pursue careers in various fields such as science, engineering, education, banking, business, public services, etc. or become an entrepreneur with precision, analytical thinking, innovative ideas, clarity thought, expression, and systematic approach.

PSO. NO	Programme Specific Outcomes
PSO-1	Students will be proficient in advanced statistical modelling techniques, including multivariate analysis, non-parametric methods, and Bayesian inference, to address complex research questions.
PSO-2	Students will demonstrate expertise in applying statistical methods to real-world problems in areas such as finance, healthcare, social sciences, and engineering, fostering innovation and evidence-based decision-making.
PSO-3	Students will be capable of integrating machine learning techniques with traditional statistical methods to extract insights from large and complex datasets, enhancing predictive modelling and data-driven decision-making.

PSO-4	Students will be equipped with consulting skills to collaborate effectively with stakeholders, provide statistical expertise, and contribute to interdisciplinary research teams in academia, industry, and government.
PSO-5	Students will develop leadership skills, professional ethics, and a commitment to lifelong learning, preparing them for leadership roles in academia, research organizations, and industry.

Semester, Credit Framework NSQF Level and Exit Points

Sr. No	Semester	Year	Year	Credits	Level	Exit Points &Award
1	Sem. I & II	2024-25	1 Year	44	6	**PG Diploma (Statistics)**
2	Sem. III & IV	2025-26	2 Year	44	6.5	**PG Degree (Statistics)**
			Total	**88**		**Master of Science (Statistics)**

Credit Distribution

Sr. No	Components	1 Year Master Degree Programme			2YearMaster Degree Programme		
		Courses	Credits	%	Courses	Credits	%
	Mandatory Courses	06	24	54.55	12	48	54.55
	Elective Courses	02	04	9.09	04	08	9.09
	Mandatory Practical	02	04	9.09	04	08	9.09
	Elective Practical	02	04	9.09	03	06	6.82
	Research Methodology	01	04	9.09	01	04	4.55
	Research Project	01	04	9.09	02	10	11.36
	OJT	--	--	--	01	04	4.55
	Total (Mandatory)-(A)	**09**	**32**	**72.73**	**19**	**70**	**79.55**
	Elective	04	08	18.18	07	14	15.91
	RM	01	04	9.09	01	04	4.55
	Total - (B)	**05**	**12**	**27.27**	**01**	**04**	**4.55**
	Grand Total (A+B)	**14**	**44**	**100**	**27**	**88**	**100**

Duration:

- The program shall be a full-time program.

- The duration of program shall be One Year / Two years.

- Students will have to exit option with: - First Year (44 Credits) - PG Diploma

  Second Year (88 Credits) - Master Degree

Number of Students: A batch shall consist of not more than 40 students. An additional 20% of seats will be allotted as per Karmaveer Bhaurao Patil University, Satara Norms.

Eligibility of the Students:

- Bachelor of Science in Statistics.
- Any other eligibility prescribed by UGC, Government of Maharashtra, Karmaveer Bhaurao Patil University, Satara.

Medium of Instruction: The medium of instruction shall be in English.

Eligibility of the Core Faculty:

- **Assistant Professor:** Master of Science with specialization in statistics and NET/ SET/ Ph.D.

Eligibility for Professor of Practice or Professional Trainer:

Any other eligibility as per the Guidelines and Regulations Passed by the Board of Concerned Studies, Academic Council of the College / University and Rules and Regulations of Karmaveer Bhaurao Patil University, Satara, Government of Maharashtra, and UGC norms.

Scheme of Examination & Standard of Passing :(SEE and CCE)

End Semester Exam (ESE): 60 Marks (Min 24 Marks for Passing)

Continuous Comprehensive Evaluation (CCE): 40 Marks (Min 16 Marks for Passing)

Total Marks: 100 Marks for **DSC mandatory courses**.

End Semester Exam (ESE): 30 Marks (Min 12 Marks for Passing)

Continuous Comprehensive Evaluation (CCE): 20 Marks (Min 08 Marks for Passing)

Total Marks: 50 Marks for **DSE elective courses**.

Minimum 40% Marks Required for Passing and there is a separate head of passing

as per the decision of the concerned Board of Studies or Competent Authority.

Evaluation of OJT and RP:

   i.   OJT: Total 100 Marks for 4 credits

        (Rubrics: Certificate= Max 60 marks, Report=20 Marks, viva=20 marks)

  ii.   RP: Total 100 marks for 4 credits

        (Rubrics: Dissertation=50 Marks + Presentation & Viva=50 Marks)

        RP: Total 150 marks for 6 credits

        (Rubrics: Research Training=50 Marks + Dissertation=50 Marks + Presentation & Viva=50 Marks)

M.Sc. (Statistics) Part –I				
Semester –I				
Sr. no	**Components**	**Course Code**	**Course (Subject)**	**Credits**
1	Mandatory	MST 411	Mathematical Statistics P-I	4
2	Mandatory	MST 412	Estimation Theory P-II	4
3	Mandatory	MST 413	Optimization Technique P-III	4
4	Electives	MST 414	Sampling Theory P-IV- E1 or Population Studies P-IV- E2	2
5	RM	MST 415	Research Methodology	4
6	Mandatory Practical	MSP 416	Practical –I	2
7	Electives Practical	MSP 417	Practical –II	2
Total				**22**
Semester –II				
Sr. no	**Components**	**Course Code**	**Course (Subject)**	**Credits**
1	Mandatory	MST 421	Probability Theory P-V	4
2	Mandatory	MST 422	Theory of testing of Hypothesis P-VI	4
3	Mandatory	MST 423	Regression Analysis P-VII	4
4	Electives	MST 424	Linear Model and Design of Experiment P-VIII- E1 or Computational Statistics P-VIII- E2	2
5	RP	MSP 425	Research Project	4
6	Mandatory Practical	MSP 426	Practical –III	2
7	Electives Practical	MSP 427	Practical –IV	2
Total				**22**

EXIT OPTION: PG Diploma with **44 Credits** after Three Year UG Degree.

M.Sc. (Statistics) Part -II				
Semester –III				
Sr. no.	Components	Course Code	Course (Subject)	Credits
1	Mandatory	MST 531	Asymptotic Inference P-IX	4
2	Mandatory	MST 532	Clinical Trial P-X	4
3	Mandatory	MST 533	Multivariate Analysis P-XI	4
4	Electives	MST 534	Survival Analysis P-XII- E1 or Data Mining P-XII- E2	2
5	Mandatory practical	MSP 535	Practical –V	2
6	RP	MSP 536	Research Project	6
Total				**22**
Semester –IV				
Sr.	Components	Course Code	Course (Subject)	Credits
1	Mandatory	MST 541	Time Series Analysis P-XIII	4
2	Mandatory	MST 542	Stochastic Process P-XIV	4
3	Mandatory	MST 543	Advanced Optimization Techniques P-XV	4
4	Electives	MST 544	Planning and Analysis of Industrial Experiments P-XVI- E1 or Actuarial Statistics P-XVI- E2	2
5	Mandatory Practical	MSP 545	Practical –VI	2
6	Electives practical	MSP 546	Practical –VII	2
7	OJT	MSP 547	On Job Training	4
Total				**22**

**** PG Degree with 88 credits after Three Year UG Degree.

Chairman   Secretary   Chairman
BoS in Statistics   Academic Council   Academic Council