DEPARTMENT OF STATISTICS

SAURASHTRA UNIVERSITY

RAJKOT

SYLLABUS

M.Phil (Statistics)

(CBCS)

WITH EFFECT FROM JUNE - 2017

(Reaccredited "A" Grade by NAAC)

(CGPA 3.05)

Ordinance, Regulations and Examination Scheme:

Ordinance:

O. M.Phil. – 1: Post graduate degree with Statistics/Mathematics/Computer Science/ Information Technology with at least 55% marks are eligible for admission. (UGC Regulations, 2016 dated 5/5/2016)

O. M.Phil. – 2: The duration of the program will be of one full time academic year. The examination for the M.Phil program will be divided into two semesters. No candidate will be allowed to join any other course or service simultaneously.

O. M.Phil. – 3: Candidate who have passed an equivalent examination from any other university or examining body and is seeking admission to the M.Phil Program will be required to provide necessary eligibility certificate.

O. M.Phil. – 4: Candidate desirous of appearing at any semester examination of the M.Phil Program must forward their application in the prescribed from to the University through the head of the department on or before the date prescribed for the purpose under the relevant ordinances.

O. M.Phil. – 5: No candidate will be permitted to reappear at any semester examination, which he has already passed. The marks of successfully completed paper will be carrying forwarded for the award of class.

O. M.Phil. – 6: There shall be an examination at the end of each semesters to be known as first semester examination and second semester examination. At which a student shall appear in that portion of theory papers, practical and viva – voice if any, for which he/she has kept the semester in accordance with the regulations in this behalf.

A candidate whose term is not granted for what so ever reason shall be required to keep attendance for that semester or term when the relevant papers are actually taken at the department.

O. M.Phil. – 7: Medium of instruction is English.

O. M.Phil. – 8: Any candidate can go up to take admission in next semester irrespective of failure in any number of subjects.

Regulations:

R.S.M.Phil – 1. Standard Of Passing

The standard of passing the M.Phil Program examination will be as under:

(1) To pass any semester examination of the M.Phil Program, a candidate must obtain at least 40% marks in the university examination in each course.
(2) Class will be awarded based on Earned Grade Point, SGPA and CGPA as per rules of University.

R.S.M.Phil. – 2. Marks and credit hours of each course

Marks of Internal examination, university examination and credit hours will be as under:

(1) Total marks of each theory course are 100 (university examination of 70 marks + internal examination of 30 marks).
(2) Marks of each unit in the course are equal (i.e. 14 Marks). Total marks of each course are 14x5=70 for university examination.
(3) Credit hours (lectures) for each unit in the course are equal (i.e. 12 hours). Total credit hours (lectures) of each course are 12x5=60.
(4) Total marks of practical course is 100 and project-viva course is 300. No internal examination of marks in practical and project-viva courses.

R.S.M.Phil. – 3. Structure of Question Paper

Question Paper contains 5 questions (each of 14 marks).

Question – 1: Attempt seven out of ten objective type questions (not MCQ) like definition, reason, answer in one line, answer in one word etc.,

Question – 2 to Question – 5: Attempt two out of three questions.

R.S.M.Phil. – 4. Following is the syllabus of each course of M.Phil Program.

Semester – 1

Subject Code	Title of the course	Course Credits
SMT – 1001	Research Methodology	4
SMT – 1002	Operations Research	4
SMT – 1003	Practical: Data Analysis using SPSS	4
Total		**12**

Semester – 2

Subject Code	Title of the course	Course Credits
SMT – 2001	Project and Viva	12
Total		**12**

SMT – 1001 RESEARCH METHODOLOGY

1. Research Methodology Introduction, Defining the Research Problem, Research Design.
2. Sampling Design, Measures and Scaling Techniques , Method of Data Collection:
3. Processing and Analysis of Data, Sampling Fundamentals:
4. Testing of Hypotheses-I (Parametric or Standard Tests of Hypotheses), Chi-square Test, Analysis of Variance and Covariance
5. Testing of Hypotheses-II (Nonparametric or Distribution-free Tests)

Reference:

1. C.R. Kothari (2004), Research Methodology methods and techniques 2nd edition.
2. N.K. Sahu (2013), Research Methodology.
3. V.V. Khanzode (2011), Research Methodology – Techniques and Trends.
4. Y.K. Singh (2008), Fundamental of Research Methodology and Statistics.

SMT – 1002 OPERATIONS RESEARCH

1. Linear programming problem: feasible, basic feasible and optimal solution. Example of LPP. Solution of LPP using graphical method.
2. Simple method, revised simple solution, dual, dual simple method.
3. Transportation and assignment problem (both balanced and unbalanced case). Game theory: Two person games, pare and mixed strategies, finding solution in 2 x 2, 2xm, and m x n games. (Equivalent of rectangle game and linear programming.)
4. Basic characteristics of queuing system, different performance measures, steady state solution of markov queuing models: m\m\1, m\m\1 with limited waiting space, m\m\c, m\m\c with limited waiting space.
5. Inventory problems and analytical structure. Simple deterministic and stochastic models of inventory controls. Replacement problems: block and age replacement policies, dynamic programming approach for maintenance problems; replacement of terms with long life, PERT and CPM. Sequencing and scheduling problems.

Reference:

1. Taha, H.A. (1982). Operational research: an introduction; Macmillan.
2. Kantiswaroop, gupta, P.K. and Singh, M.M. (1985). Operations research, sultan chand and sons.
3. J.K. Sharma (1990). Mathematical models in operation research. Tata McGraw hill.
4. Hadely, g. (1964). Non linear and dynamic programming. Addison Wesley.

SMT – 1003 PRACTICAL: DATA ANALYSIS USING SPSS

Practical based on SMT-1001

SEMESTER – 2

Project and Viva

Project can be developed in-house or in industry. Student must submit progress report to internal guide every 15 days. Project report must be submitted before 15 days of examination.