Syllabus for Ph.D. Course Work
Department of Applied Mathematics with Oceanology and Computer Programming
Vidyasagar University

2014

Course I: Research Methodology
Credit Hours: 16
Marks: 50 [Written: 40 (Exam Hours: 2) + One Assignment: 10]

Research: Definition, importance, meaning and characteristics. Steps in Research. Research problem: identification, selection and formulation. Data: definition, types, sources, data collection methods. Review of literature and Bibliography. Research report: types, contents, styles and steps in drafting. Editing the final draft, way of writing papers and Thesis writing. Significance of Impact factor, citation index, science citation index, IST, SCOPUS etc.

Assignment: Review of articles and Research proposal

Course II: Computer Application and Statistical Methods
Credit Hours: 16
Marks: 50 [Written: 40 (Exam Hours: 2) + One Assignment: 10]

Unit: I [Marks: 20]

Operating system such as DOS, WINDOWS, UNIX. Internet: data uploading and downloading, e-mail and e-journal. Office management: MS-Word, MS-Excel, MS-Power Point, and Latex / WINEDIT. Programming: C, C++, Software Packages: MATLAB, MATHEMATICA, MAPLE.

Unit: II [Marks: 20]

Probability distribution. Distribution Free Approach, Test for goodness for fit for a proposed distribution. Correlation of coefficient: simple linear, multiple linear, and partial. Regression; simple, multiple and stepwise. Sampling: definition, theory, types, techniques and steps.

Assignment:

Power point presentation on a research topic. Analysis of data on given statistical methods.

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Course III: Current Research Areas

Credit Hours: 16

Marks: 50 [Written: 50 (Exam Hours: 2)]

Magneto Fluid Dynamics, Flow in a Porous Medium, Operations Research, Graph Theory, Fuzzy Set Theory, Rough Set Theory, Soft Computing, Mathematical Methods, Optimization Techniques, Orography, Prey – Predator Model, Web let, integral equation, fuzzy integral equation, Numerical Analysis, Classical Mechanics, Lattice Algebra, Fixed point theory etc.

Course IV: Specific Research Topic

Credit Hours: 16

Marks: 50 [A Literature Review on the related research topic be submitted by each scholar to the associated Supervisor and after evaluation supervisor submits the Marks to HOD]

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