

RAJIV GANDHI UNIVERSITY

(A Central University)

RONO HILLS :: DOIMUKH



DEPARTMENT OF MATHEMATICS

One Semester Course Structure

Ph. D. (Course Work)

Mathematics & Computing

w.e.f. 2017-18

STRUCTURE OF THE SYLLABUS FOR Ph. D. PROGRAMME

<i>Ph. D. Programme</i>			
<i>Semester</i>	<i>Paper Code</i>	<i>Title</i>	<i>Marks Distribution</i>
<i>I-Semester (Two Papers) Compulsory</i>	<i>MATH -701</i>	<i>Research Methodology</i>	<i>Theory-60, Internal- 20, Practical-20</i>
	<i>MATH -702</i>	<i>Computer Applications</i>	<i>Theory-50, Internal- 20, Practical-30</i>



A handwritten signature in black ink, appearing to be "S. S. S.", written over a faint background of a grid or lines. Below the signature, the text "Department of Mathematics" is printed in a small, blue font.

HEAD
Department of Mathematics
Rajiv Gandhi University
Reno Hills, Doimukh (A.P.)

MATH: 701: RESEARCH METHODOLOGY

Course Outcome: *The paper equips students with the basics of the research. It equips students with concept of Formulating research aim and objectives in an appropriate manner are one of the most important aspects and give the overall direction of the research.*

Full Marks: 100

Term end: 60

Practical: 20

Internal: 20

Unit-I: **An overview of Research Methodology:** *Research concept, characteristics of Research, the choice and statement of research problem, justification and hypothesis. Literature collection-textual and digital.*

Elementary Scientific Method: *Authority in science, observation and descriptions, analysis and synthesis, Hypothesis, Deduction, Models and Mathematics, Testing of Hypothesis, Preparation of research synopsis, Significance of Research Work.*

Marks: 20

UNIT- II: **Scientific writing skills and Technical writing skills:** *Form of scientific and technical writing: Planning and Producing documents, Documents types, elements of technical documents, Graph and figure, Paragraphs, Mechanism of, citing sources and listing Reference, Reference Writings, Different types of Article and Theses writing styles.*

Marks: 20

UNIT-III: **Numerical Analysis:** *Interpolations, Differentiations and Integrations. Solving differential equations by Euler and Euler modified methods, Finite Difference Methods, Curve Fitting, Predictor-Corrector method for accuracy and stability, Statistical Inference.*

Marks: 20

UNIT-IV: *Research Project Proposal Resource Generation:*

Marks-20

1. *Write a Research Project Proposal;*

2. *Getting funds from different funding agencies.*

Internal Assessment:

Marks: 20

Text and Reference Books

1. *Nicholas J. Higham: Handbook of Writing for te Mathematical Sciences, Second Edition, SIAM Publisher (1998).*
2. *Robert K, Yin: Case Study Research: Design and Methods, Sage Publications Ltd., London (2008).*
3. *Leslie C.Prerelman: The Mayfield Technical Scientific Writing, Tata James parade & McGraw Hills (2001).*
4. *H. C. Saxena: Finite Difference and Numerical Analysis, S. Chand & Co. (2005).*

MATH: 702: COMPUTER APPLICATIONS

