

SEMESTER - IV
RESEARCH METHODOLOGY

SUBCODE: P6BT4002

Credits: 5

Hours : 5

UNIT-I : Research: Basic and applied research – objectives of research – types of research – criteria of good research – hypothesis – parameters of research - stages in the execution of research. Design of Experiments (DoE Concepts).

UNIT II : Journal: Standard research journals – impact factor – citation index – information retrieval –databases – search engines – Google, PubMed NIC – network services – online data book library - format of journal – proof reading – sources of information – journals, reviews, short communication, books, monograph & bibliography.


UNIT III : Research report writing: Title – Keywords – Abstract – Introduction – Materials and Methods – Results – Discussion – Conclusion – Summary – Acknowledgement – References. Preparation of manuscript.

UNIT IV: Biotechnological Tools: AGE, SDS-PAGE, Gel documentation – Immunotechniques – Blotting techniques – DNA finger printing – RFLP, RAPD, AFLP, PCR.

UNIT V: Good laboratory practices for animal facility: CPCSEA guidelines for laboratory animals – Animal procurement, veterinary care – quarantining, stabilization, separation, diagnosis, treatment and control of diseases. Animal care and technical personnel. Animal husbandry. Anaesthesia and euthanasia. Laboratory animal ethics.

REFERENCES:

1. MLA hand book for writers of research paper. Joseph Gibaldi, 6th edn. Affiliated East-West press Pvt ltd, New Delhi, India
2. Research methodology by Kothari
3. Research methodology by Gurumani
4. Writing the Doctoral Dissertation – Barrons Educational Series 2nd edn, Davis, G.B. and C.A. Parker, 1997
5. Authoring a Ph.D. thesis: How to plan, draft, write and finish a doctoral dissertation, Duncary, p. 2003, Mac million Pub.
6. How to write & publish a scientific course, 5th Edn, Robert A. The Oxford Press


CONTROLLER OF EXAMINATIONS
Islamiah College (Autonomous)
New Town, Maniyambadi-535 752

CORE PAPER I	SEMESTER I	Credit	5
		Hrs./Week	6
COURSE TITLE	RESEARCH METHODOLOGY	Exam Hrs.	3
		MPH8BT01	

UNIT- I RESEARCH METHODOLOGY

Meaning of research-Objectives of research-motivation of research- Types, approaches and significance-Methods versus methodology- Research in scientific methods- research process- Criteria for good research- Problem encountered by research in India – Funding agencies.

RESEARCH ETHICS

Ethics and Research Aims - Moral Justifications of Research - Responsibilities of Researchers - Areas of research which raise ethical issues - Ethical issues in the use of information and communication technology - Code of Ethics

UNIT - II RESEARCH DESIGN

Research problem: Selecting the problem – Necessity of defining the problem – Techniques involved in defining the problem – Research designs- Needs and features of good design – Different research design – Basic principles of experimental designs.

UNIT- III DATA COLLECTION AND DOCUMENTATION

Data collection methods – Data types- Processing and presenting of data- Techniques of ordering data- Meaning of primary and secondary data- The uses of computers in research- The library and internet – uses of search engines – virtual libraries-common software for documentation and presentation.

UNIT - IV DATA AND ERROR ANALYSIS


Statistical analysis of data-Standard deviation-Correlation-comparison of sets of data- Chi square analysis of data-Characteristics of probability distribution-Binomial, Poisson and normal distribution- Principle of least square fittings- Curve fitting- Measurement of Errors – Types and source of errors- Determination and control of errors.

UNIT - V RESEARCH COMMUNICATION

Meaning of research report- logical format for writing thesis and paper – Essential of scientific report- Abstract, Introduction, Review of literature. Materials and methods and discussion- Write up steps in drafting report- Effective illustrations; Tables and figures - Reference styles; Harvard and Vancouver systems.

REFERENCE BOOKS:

1. Research methodology, Methods and techniques- C.R.Kothari - Vishwapragasam publications, 2nd edition.
2. Paul Oliver, The Studnets guaide to research ethics, Mc.Graw Hill Open University Pres, Second Edition, 2010
3. Research ; An introduction - Robert Ross - Harper and Row publications
4. Research methodology - P.Saravanel - Kitlab mahal, 6th edition.
5. A hand book of methodology of research- Rajmmal P.A.Devadas- Vidhalaya press.
6. Introduction to computers - N.Subramanian
7. Statistical methods - G.W.Snedecor and W.Chcharan - Oxford and IBH, New Delhi.
8. Research methodology methods and statistical techniques - Santhosh gupta.
9. Statistical methods - S.P.Gupta.
10. Scientific social survey and research - P.young - Asia publisher, Bombay
11. How to write and publish a scientific paper - R.A.Day, Cambridge University press.
12. Thesis and assignment writing- Anderson- Wiley Eastern Limited.


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CORE PAPER I	SEMESTER I	Credit	5
		Hrs./Week	6
COURSE TITLE	ALGEBRA AND ANALYSIS	Exam Hrs.	3
		MPH8MS01	

UNIT-I :

Research Ethics

Ethics and Research Aims - Moral Justifications of Research - Responsibilities of Researchers - Areas of research which raise ethical issues - Ethical issues in the use of information and communication technology - Code of Ethics

RINGS, IDEAL AND MODULES

Rings and ring homomorphisms - Ideals, Quotient rings - Zero divisors, Nilpotent elements, Units - Prime ideals and maximal ideals - Nilradical and Jacobson radical - Operations on ideals - Extension and contraction - Exercise - Modules and module homomorphisms - Submodules and quotient modules - Operations on submodules - Direct sum and product - Finitely generated modules - Exact sequences - Tensor product of modules - Restriction and extension of scalars - Exactness properties of the tensor product - Algebras - Tensor product of algebras - Exercises.

Chapter 1: (pp. 1 - 10)

Chapter 2: (pp. 17 - 31).

UNIT-II: RINGS, MODULES OF FRACTIONS AND PRIMARY DECOMPOSITION

Local properties - Extended and contracted ideals in rings of fractions - Exercise - Primary Decomposition - Exercise.

Chapter 3: (pp. 36 - 43)

Chapter 4: (pp. 50 - 55).

UNIT-III: CHAIN CONDITIONS, NOETHERIAN RINGS AND ARTIN RINGS

Chain conditions - Exercises - Primary Decomposition in Noetherian rings - Exercises - Artin Rings - Exercises.

Chapter 6: (pp. 74 - 78)

Chapter 7: (pp. 80 - 84)

Chapter 8: (pp. 89 - 91).

UNIT- IV : ABSTRACT INTEGRATION AND L^p SPACE

The concept of measurability – simple functions – Elementary properties of measures integration of positive functions – Integration of complex functions – The role played by sets of measure zero – Convex functions and inequality – L^p spaces.

Chapter 1: (pp. 5 – 31)

Chapter 3: (pp. 61 – 69).

UNIT – V: FOURIER TRANSFORMS AND HOLOMORPHIC FOURIER TRANSFORMS

Formal properties – The Inversion Theorem – The Plancherel Theorem – The Banach algebra L^1 – Introduction – Two Theorems of Paley and Wiener Quasi – Analytic classes – The Denjoy – Carleman theorem.

Chapter 9: (pp. 178 – 193)

Chapter 19: (pp. 371 – 383).

Content and Treatment as in:

1. INTRODUCTION TO COMMUTATIVE ALGEBRA, *M.F. Atiyah and I.G. Macdonald*, (1969), Addison – Wesley.
2. Paul Oliver, The Students guide to research ethics, Mc.Graw Hill Open University Press, Second Edition, 2010
3. REAL AND COMPLEX ANALYSIS, (Third Edition), *Walter Rudin*, (1986), McGraw Hill.

References:

1. ABSTRACT ALGEBRA, *R.S. Pierce*, Springer Verlag.
2. REAL ANALYSIS, *R.G. Bartle*, (1976), John Wiley and Sons.



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Memorandum of Understanding


Between Islamic Education Centre, New Town, Vaniyambadi and Sacred Heart College, Tirupattur, Vellore district, Tamil Nadu, to go for a memorandum of understanding with Sacred Heart College, Tirupattur, Vellore district, Tamil Nadu, who is the legal license holder of the anti-plagiarism software 'TURNITIN' to help the research students of Islamiciah College, New Town, Vaniyambadi, Vellore district, Tamil Nadu, to get the plagiarism check done at Sacred Heart College, Tirupattur, Vellore district, Tamil Nadu and produce the certificate at the time of submission of articles and M.Phil dissertation work.

NOW IT IS HEREBY AGREED AS FOLLOWS

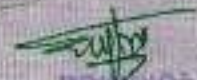
1. To pursue scholarly activity in an open, honest and responsible manner and to avoid self-publication restriction, it is hereby agreed upon by the Islamiciah College, New Town, Vaniyambadi, Vellore district, Tamil Nadu, to go for a memorandum of understanding with Sacred Heart College, Tirupattur, Vellore district, Tamil Nadu, who is the legal license holder of the anti-plagiarism software 'TURNITIN' to help the research students of Islamiciah College, New Town, Vaniyambadi, Vellore district, Tamil Nadu, to get the plagiarism check done at Sacred Heart College, Tirupattur, Vellore district, Tamil Nadu and produce the certificate at the time of submission of articles and M.Phil dissertation work.
2. It is hereby agreed that the concerned student should pay the prescribed fee towards this process at Sacred Heart College, Tirupattur, Vellore district, Tamil Nadu to get the certificate.
3. This MOU is valid for a period of three years from the date of signing of this agreement.

Agreed upon and signed


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VANIYAMBADI-2
(Principal)


13/11/19
On behalf of Sacred Heart College
(Principal)
Principal
Sacred Heart College,
Tirupattur 634 001 or 633 901




Principal
ISLAMIAH COLLEGE (AUTONOMOUS)
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Name and address

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Dr. M. V. S. S. S. S.
Associate Professor
Department of Mathematics
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Dr. K. S. S. S. S.
Associate Professor
Department of Mathematics
Islamiah College (Autonomous)
Newtown, Vaniyambadi

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Witness (with name and address in reference to On behalf of Islamiah College, (Autonomous), Newtown, Vaniyambadi)

Name and address

Signature

1. Dr. Anwarullah Khan, M.B.B.S.
Secretary and Correspondent
Islamiah College (Autonomous)
Newtown, Vaniyambadi

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SECRETARY & CORRESPONDENT
ISLAMIAH COLLEGE (AUTONOMOUS)
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2. Dr. A. L. S. S. S.
Associate Professor
Department of Biochemistry
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Dr. T. MOHAMED ILYAS, M.Com., MBA., M.Phil., Ph.D.

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| 4. Dr. Syed Tahir Hussainy | 18. Dr. M. A. Farook |
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