



MAHENDRA ARTS & SCIENCE COLLEGE
(Autonomous)

Affiliated to Periyar University, Salem.

Accredited by NAAC with 'A' Grade & Recognized u/s 2(f) and 12(B) of the UGC Act 1956
Kalippatti – 637 501, Namakkal (Dt), Tamil Nadu

3.4.1

**The Institution ensures implementation of its
stated Code of Ethics for research**

**Inclusion of research ethics in the research
methodology course work**


PRINCIPAL
MAHENDRA ARTS & SCIENCE COLLEGE
(Autonomous)
Kalippatti (PO) - 637 501, Namakkal (DT)



PERIYAR UNIVERSITY

(NAAC 'A' Grade – State University – NIRF 83 – ATAL 4)

Salem – 636 011

Tamilnadu, India

DEPARTMENT OF BIOTECHNOLOGY

REGULATIONS AND SYLLABUS

MASTER OF PHILOSOPHY IN BIOTECHNOLOGY

(Outcome Based Education in M.Phil – Biotechnology)

(Under CBCS for University Department)

2018 – 19 Onwards

PRINCIPAL

MAHENDRA ARTS & SCIENCE COLLEGE

(Autonomous)

Kalippatti (PO) - 637 501, Namakkal (DT)

M.Phil. Biotechnology Syllabus
MPBT01: Paper I - Research Methodology

Credits: 4
Hours: 4/Wk

Course objectives:

Students will understand the various principles, working mechanism, and functions of instruments and techniques like Ultra centrifuge, Gradient centrifuge, FT-IR, AAS, Microscopy, HPLC, NMR, GC-MS, MALDI-TOF, AGE, PAGE Electrophoresis, PCR techniques, Western blot. In addition the concepts of experimental design, statistical analysis and Bioinformatics application will also be studied

Unit I

Centrifugation: Basic principles, Ultra centrifuge, Density Gradient Centrifugation and Sub cellular fractionation by differential centrifugation, Spectroscopy: UV-Visible Spectrophotometer, FT-IR and AAS.

Unit II

Microscopy: Fluorescence, Confocal, Scanning and Transmission Electron microscopes, Super Resolution Microscopy, Image analysis technique for living cells, Gel filtration, Affinity chromatography, HPLC, NMR, GC-MS, MALDI-TOF and Microarray technique, Autoradiography and Liquid Scintillation Counter.

Unit III

Electrophoresis methods: PAGE, Agarose gel electrophoresis, Capillary Electrophoresis, 2D-Electrophoresis and Gel Documentation. Histochemical and Immunotechniques: Antibody generation, detection of molecules using ELISA, Western blot and Immunoprecipitation.

Unit IV

Principles and techniques of Southern and Northern hybridization: Principles and applications of PCR, RT-PCR, and qPCR. Automated DNA sequencing, Next Generation sequencing, DNA Chip Technology, preparation of DNA probes and hybridization, FISH, DNA and Protein Microarray, Flow Cytometry, Chromatin Immunoprecipitation. Fermentor-Types, design and downstream process.

Unit V

Research Ethics, Research/Experimental design, Preparation of Research report, Measures central tendency and Dispersion, Standard error, Regression and Correlation analysis; Student's t-test; Analysis of Variance; Chi-Square test; Application of computers in biostatistics; Bioinformatics; BLAST N & P, multiple sequence analysis, Gene discovery

using EST. Genbank Databases: NCBI, EMBL & DDBJ. Protein sequence Database: Swiss Prot & PDB.

Reference Books

- Keith Wilson and John Walker, 2010. Principles and Techniques of Biochemistry and Molecular Biology. 7th Edn. Cambridge University Press.
- Wayne W. Daniel, Chad L. Cross. 2013. Biostatistics: A foundation for Analysis in the Health Sciences. 10th Edn. Wiley Series in Probability and Statistics.
- Rastogi S. C., Mendiratta N. and Rastogi P. 2013. Bioinformatics Methods and Applications Genomics, Proteomics, and Drug Discovery. 3rd Edn. PHI Learning.
- Terrance G. Cooper. 1977. Tools in Biochemistry. Wiley-Interscience publication, New York.
- Joseph Sambrook & David W. Russell. 2001. Molecular Cloning – A laboratory Manual. 3rd Edn. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
- Charles N. Rely, Donalds. T. Saweyer, Robert E. Krieger Huntington. 1979. Experiments of Instrumental methods: A Laboratory Manual, New York.
- Gelvin, S.B., and Schilperoort, R.A. 2000. Plant Molecular Biology Manual, 2nd Edn. Springer Netherlands.
- Norman T.S. Bailey, 1995. Statistical Methods in Biology. 3rd Edn. Cambridge University Press, UK



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KALIPPATTI-637501



MASTER OF SCIENCE

SYLLABUS FOR M.Sc. BIOTECHNOLOGY

OUTCOME BASED EDUCATION - CHOICE BASED CREDIT SYSTEM

**FOR THE STUDENTS ADMITTED FROM
THE ACADEMIC YEAR 2019 - 2020 ONWARDS**


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MAHENDRA ARTS & SCIENCE COLLEGE

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(Autonomous)

Kalippatti (PO) - 637 501, Namakkal (DT)

SEMESTER IV

Core -XII	M.Sc., Biotechnology	2019-2021
Code: M19PBT12	RESEARCH METHODOLOGY AND RESEARCH PROPOSAL DEVELOPMENT	
Credits : 4		

Objective

To develop a research orientated approach among the students and to acquaint them with fundamentals of research methods.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	Learn the basic needs , requirement for doing research like research methodology, objective ,work plan, preparation and how to select the topic, review the previous literature.	K1
CO2	Understand types and objectives of research, Preparation of Research report	K2
CO3	Apply to review the literature, index card. data processing, data base, manuscript and statistical method for writing project.	K3
CO4	Analyze the previous literature, information and methodology to write best literature	K4
CO5	Evaluate all the literature, methods, procedure and criteria for prioritizing problems for research.	K5



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UNIT I

Introduction to research; Definitions and characteristics of research; Types of research; Main components of any research work. Topic Selection: Learning Objectives; Problem identification; Criteria for prioritizing problems for research.

UNIT II

Literature review: Uses of literature review; Source of information; Organization of information on index cards. Objectives: Learning Objectives; Definitions; Formulation of the research objectives.

UNIT III

Research methodologies: Study population; Variables; Sampling; Sample size determination; Plan for data collection; Methods of data collection; Plan for data processing and analysis; **Ethical considerations.**

UNIT IV

Work Plan; Major components and outline of the different phases in a research process; Summary of the major components of a research proposal; Fieldwork; Preparation of Research report – Thesis – dissertation – Manuscript/research article – monograph/review.

UNIT V

Measures of Mean, Median and Mode: Standard Deviation and Standard Error. Regression and Correlation coefficient analysis; Student's t-test; Analysis of Variance (ANOVA); Chi-Square test. Bioinformatics: BLAST N & P, Gene discovery using EST. Genbank Database- NCBI, EMBL & DDBJ.


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REFERENCE BOOKS:

S. No.	Title of the Book	Author	Publishing Company	Year of Publication
1.	Biostatistics: A foundation for the Analysis in the Health Sciences Experiments of	Wayne W. Daniel, Charles Norwood Reilley and Donald Turner Sawyer	Wiley Series in Probability and Statistics, 7E	1996
2.	Instrumental methods, Laboratory Manual	A	McGraw-Hill, New York	1961
3.	Instrumental Methods of Analysis	Hoburt Willard, Lynne L. Meritt J.R. John Dean	East West Press Pvt Ltd	1965
4.	Introduction to Bioinformatics: Protein Purification	to Atwood, T. K. and Parry-Smith, D. J. Ed by Robert Scopes,	Springer Verlag Publication	1982

TEXT BOOKS:

S. No.	Title of the Book	Author	Publishing Company	Year of Publication
1.	Laboratory Instrumentation	M. Prakash, C.K.Arora	Anmol Publications Pvt Ltd.,	2005
2.	Introductory Statistics	Prem S. Mann	John Wiley and Sons(ASIA) Pvt. Ltd. Fifth Edition.	2004
3.	Bioinformatics Methods and Applications Genomics, Proteomics, and Drug Discovery	S.C. Rastogi, N. Mendiratta, and P. Rastogi	PHI Learning Private Limited	2013


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Mapping with Programme Outcomes

Cos	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	M	S
CO2	S	S	M	M	M
CO3	M	S	S	S	S
CO4	S	S	S	M	M
CO5	M	S	S	S	S

S- Strong; **M-**Medium



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KALIPPATTI-637501



MASTER OF ARTS

SYLLABUS FOR M.A. ENGLISH

OUTCOME BASED EDUCATION - CHOICE BASED CREDIT SYSTEM

**FOR THE STUDENTS ADMITTED FROM
THE ACADEMIC YEAR 2019 – 2020 ONWARDS**

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MAHENDRA ARTS & SCIENCE COLLEGE

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SEMESTER-III

Core Course – XI	M.A. English	2019 - 2020
Code:M19PEN11	RESEARCH METHODOLOGY	
Credits: 5		

Preamble

To enable the students to do research by learning the basics of research methodology.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	Practice the literature survey aspects of projects and prepare the scope and goals for the proposed project.	K2
CO2	Improve the research presentation skills and with latest tools	K2
CO3	Understand the research publication ethics and tools	K4
CO4	Identify the causal relationship between variables	K3
CO5	Improve the awareness on indexing, quality evaluation, author index of publications	K3

UNIT - I -Research:

Formulation of Research Problem, Selecting a Topic, Methods of Exposition, Identification, Definition, Classification, Illustration, Comparison & Contrast Analysis

UNIT - II -Paragraph and Sentence

The Structure of the Paragraph, Coherence, Topic Sentence, Rhetoric and Sentence Structure

UNIT - III -The Mechanics of Writing

Names of persons, Titles of Sources, Quotations, Numbers, Dates and Times, Abbreviations

UNIT - IV - Documentation

Preparing the List of Works Cited

UNIT - V -Writing Research Paper

Sources, Note-making, Documentation, Bibliography, Format of Writing, Plagiarism, Research Ethics


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TEXT BOOK:

S. NO	TITLE OF THE BOOK	AUTHOR	PUBLISHER	YEAR OF PUBLICATION
1	M.L.A. Hand Book	Modern Language Assn. of America	Macmillan	8 th edition


REFERENCES:

S. NO	TITLE OF THE BOOK	AUTHOR	PUBLISHER	YEAR OF PUBLICATION
1	Thesis & Assignment Writing	Durston Anderson & Poole	Eastern Limited, New Delhi	1985
2	Theses & Project Work	C J Parsons	Unwin Brothers Ltd., Gresham Press	1973
3	Fundamentals of Research	Busnagi Rajanna	American Studies Research Centre	1968

Mapping with Programme Outcomes

Cos	PO1	PO2	PO3	PO4	PO5
C01	S	M	M	S	S
C02	S	S	S	M	S
C03	M	S	M	S	M
C04	M	M	S	S	M
C05	S	S	M	S	S

S- Strong; **M**-Medium


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KALIPPATTI - 637501.



BACHELOR OF COMMERCE (COMPUTER APPLICATION)

SYLLABUS FOR B.Com. (CA)

OUTCOME BASED EDUCATION- CHOICE BASED CREDIT SYSTEM

**FOR THE STUDENTS ADMITTED FROM
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MAHENDRA ARTS & SCIENCE COLLEGE

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Kalippatti (PO) - 637 501. Namakkal (DT)

SEMESTER - V

EC - I	B.Com. (CA)	2019 - 2020
Code: M19UCCE01	BUSINESS RESEARCH METHODS	
Credit: 4		

Objectives:

- To exposes the basic of business research to equip students with principles of quantitative research
- To acquire the knowledge about the fundamentals of research and statistical tools.

Course Outcomes:

On the successful completion of the course students will be able to

CO	Statement	Knowledge Level
CO1	Identify the basic components of research	K1
CO2	Bring out the different kinds of sampling techniques	K2
CO3	Analysis the methods of data collection	K4
CO4	Apply the testing of hypothesis	K3
CO5	Develop the techniques for writing report	K3

Unit - I:

Meaning of Research - Types of research - Research design - Components of the Research design and ethics

Unit - II:

Sample - Sampling Techniques - Methods of Sampling - Random and Non- Random sampling - Sampling errors

Unit - III:

Collection of data - Primary and Secondary Data - Tools of Collection of data - Questionnaire - Personal interview - Advantages - Disadvantages - Types - Pilot study and Pretesting

Unit - IV:

Analysis and interpretation of data - Hypothesis - Characteristics good hypothesis - Methods of testing hypothesis - T test - F test, Chi-Square test.

Unit - V:

Research report - Types of report - Steps in drafting a research report

Text Book:

S. No.	Title of the Book	Author	Publisher	Year of Publication
1.	Research Methodology Methods and Techniques	C.R. Kothari and GauravGarg	New Age international (P) ltd.,Publishers	2019

Reference Books:

S. No.	Title of the Book	Author	Publisher	Year of Publication
1.	Methodology and Techniques of Social Research	Wilkinson and Bhandarkar	Himalaya Publishing House	2008
2.	Methodology of Research in Social Sciences	Krishnaswami. O.R.	Himalaya Publishing House, Mumbai	2003
3.	Research Methodology in Social Sciences	Devendra Thakur	Deep and Deep, New Delhi	2003
4.	Research Methodology	GopalLal Jain	Mangal Deep, Jaipur	2008

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	S
CO2	M	M	M	S	M
CO3	M	M	S	S	S
CO4	S	S	S	S	S
CO5	M	S	S	S	S

S - Strong; **M** - Medium


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MASTER OF COMMERCE

SYLLABUS FOR M.COM.

OUTCOME BASED EDUCATION - CHOICE BASED CREDIT SYSTEM

FOR THE STUDENTS ADMITTED FROM

THE ACADEMIC YEAR 2019 - 20 ONWARDS

PRINCIPAL

MAHENDRA ARTS & SCIENCE COLLEGE
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SEMESTER III

Core Course - XII	M.COM.	2019 - 2020
Code: M19PCM12	RESEARCH METHODOLOGY	
Credit: 4		

Objectives

- To provides the students about the Collection of Data Primary and Secondary Data, Tools of collection of Data
- To facilitate the students enable to get the knowledge about Analysis and Interpretation of Data.

Course Outcomes

On the successful completion of the course, students will be able to

CO	Statement	Knowledge Level
CO1	Remembering the various kinds of research and components of research design	K1
CO2	Understand the concepts of sampling techniques.	K2
CO3	Applying various tools for collection of primary data	K3
CO4	Analyzing the different methods of testing of hypothesis.	K4
CO5	Understand the kinds of report writing	K2

SYLLABUS CONTENT

Unit- I

Meaning of Business Research – Types of Research – Descriptive, Exploratory, Empirical, and Historical and Case Study – Research Design – Components of the Research Design and Ethics.

Unit -II

Sample – Sampling Techniques – Random and Non Random sampling – Size of the sample.

Unit -III

Collection of Data - Primary and Secondary Data – Tools of collection of Data – Questionnaire - Personal Interview – Interview schedule – Observation, Pilot study and pre-testing.


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Unit- IV

Analysis and Interpretation of Data – Hypothesis – Characteristics of A Good Hypothesis – Formulation and testing of Hypothesis – Methods of testing Hypothesis – T -Test – F- Test, CHI square Test.

Unit V

Research Report – types of Reports - Steps in Drafting a Research Report.

TEXT BOOK:

S.No	Title of the Book	Author	Publisher	Year of Publication
1	Research Methodology	Kothari C. R	Wiley Eastern Ltd. New Delhi.	2016

REFERENCE BOOKS:-

S.No	Title of the Book	Author	Publisher	Year of Publication
1	Research Methods in commerce	Amar Chand D.	Emerald Publishers, Chennai.	2015
2	Research Methodology & Statistical Tools	Krishnaswamy & Obul Reddy	Himalaya Publishing House Pvt Ltd.	2014

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	S	M	M	S	S
CO3	S	M	M	S	S
CO4	S	M	M	S	S
CO5	S	M	M	S	S


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KALIPPATTI - 637 501.



MASTER OF SCIENCE

SYLLABUS FOR M.Sc. CHEMISTRY

OUTCOME BASED EDUCATION - CHOICE BASED CREDIT SYSTEM


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MAHENDRA ARTS & SCIENCE COLLEGE
(Autonomous)

1 Kalippatti (PO) - 637 501, Namakkal (DT)

SEMESTER IV

CORE COURSE-XI	M.Sc. Chemistry	2019-2020
M19PCH11	RESEARCH METHODOLOGY	
Credits: 4		

Objectives

On completion of this course student shall know the importance of research, methodology of writing thesis and journal articles and errors involved in chemical analysis.

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	Understand the meaning of research.	K2
CO2	Acquire knowledge about errors involved in chemical analysis.	K1
CO3	Analyze about sampling techniques.	K2
CO4	Relate ideas regarding research and thesis writing.	K4
CO5	Develop knowledge about the use of tools and softwares in research.	K3

UNIT I

Meaning of Research: The search for knowledge, purpose of research, scientific method, role of theory, characteristics of research. Types of research: fundamental or pure research, applied research, action research, historical research, experimental research, Ethical Considerations.

UNIT II

Errors Involved in Chemical Analysis: Classification, minimization of errors, determination of accuracy of results, reliability of results, rounding numbers -Significant figures - Mean standard deviation.

UNIT III

Sampling: Introduction - Definitions, theory of sampling - techniques of sampling – Statistical criteria of good sampling & required size - Stratified sampling Vs random sampling.



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UNIT IV

Nature and purpose, the components of dissertation, overview, title and title page, abstract, preface and table of contents, Introduction, results, discussion, conclusion, experimental section, references and miscellaneous components. Preparation of dissertation.

UNIT V

Writing techniques – Introduction, word processing and page layout, hardware and operating systems, word processing and page layout software, writing and formatting with computer, becoming accustomed to your system.

TEXT BOOKS

S. No	Title of the Book	Author	Publishing Company	Year
1.	Research Methodology Methods & Techniques	C.R. Kothari	New Age International Publishers	2011
2.	Research Methodology	Y.K. Singh, R. Nath	APH Publishing Corporation	2005
3.	Methods in Social Research	W.J. Goode, P.K. Hatt	McGraw-Hill, New York	1982

REFERENCE BOOKS

S. No	Title of the Book	Author	Publishing Company	Year
1.	Basic research methods for librarians	L.S. Connaway & R.R. Powell	Libraries unlimited California.	2010
2.	Research methodology in Library and information science	A. Glootenberg	Uxbridge: Koros	2013


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MASTER OF ARTS

SYLLABUS FOR M.A TAMIL

OUTCOME BASED EDUCATION - CHOICE BASED CREDIT SYSTEM

**FOR THE STUDENTS ADMITTED FROM
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Kalippatti (PO) - 637 501, Namakkal (DT)

நான்காம் பருவம்

முதன்மைப்பாடம் தாள் : 16	MA TAMIL	2019 - 2020
M19PTA16	ஆராய்ச்சி நெறிமுறைகள்	
Credit: 4		

நோக்கம்:

- ஆய்வு பற்றியும், ஆய்வு முறைகள் பற்றியும், ஆய்வாளர் பற்றியும், ஆய்வேட்டின் அமைப்புப் பற்றியும் அறியச் செய்தல்.
- களப்பணி செய்யும் விதத்தை உணர்த்துதல்.
- ஆய்வேட்டின் உள்ளடக்கத்தை அறியச் செய்தல்.

எண்	கற்றலின் விளைவுகள்	அறிவுநிலை
CO1	ஆய்வு அறிவை மாணவர்கள் மேம்படுத்த உதவுதல்.	K1
CO2	பிழைகளைக் களைந்து தமிழ் மொழியைப் பயன்படுத்தச் செய்தல்.	K3
CO3	கருதுகோளைக் கொண்டு தலைப்பின் அடிப்படையில் ஆய்வை மேற்கொள்ளும் திறனை வளர்த்தல்.	K4
CO4	தகவலாளர்களுடன் எவ்வாறு தொடர்பு கொண்டு தகவலைப் பெறுவது என்பதை அறிதல்.	K2
CO5	களப்பணியில் வினாநிரல் வினாப்பட்டியல் அமைக்கும் முறையை அறியச் செய்தல்.	K5

அலகு - 1. ஆய்வும் ஆய்வாளரும்

ஆய்வு என்றால் என்ன? ஆய்வின் இயல்புகள் - நோக்கம் - ஆய்வாளர் யார்? ஆய்வாளரின் பண்புகள் - தன்மைகள் - தகுதிகள் - ஆய்வு மதிப்பீடு - ஆய்வுப் பொருள் பற்றிய அறிவு - ஆய்வு - நுண்ணோக்கு உத்தி - ஆய்வு ஈடுபாடு - ஆய்வு நாகரீகம் - நிறை குறை கூறல் - இலக்கிய ஆய்வின் நோக்கம் - பயன்.

அலகு - 2. ஆய்வு முறைகள்

ஆய்வு முறை - விளக்கம் - அறிவியல் ஆய்வு முறைகள் - உற்று நோக்கல் முறை - ஆய்வு முறை வகைகள் - கட்டமைப்பு - ஒப்பீட்டு முறை - தருக்கமுறை ஆய்வு - விதியுணர் முறை - அளந்தறி முறை - புள்ளி விவர ஆய்வு முறை.

அலகு - 3. கருதுகோளும் உற்று நோக்கலும்

கருதுகோள் தோற்றம் - கருதுகோள் வரையறை - கருதுகோள் வாயில்கள் - கருதுகோள் வகைகள் - செப்பமற்ற கருதுகோள் - செப்பமுடைய கருதுகோள் - பொருளற்ற கருதுகோள் - கருதுகோள் நிரூபித்தல் விதி - உற்றுநோக்கல் - புலனுணர்வு பொறியாளர் கருதுகோள் - உற்று நோக்கலும் உற்று நோக்கலின் வகைகளும்.

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அலகு - 4. களஆய்வு

களஆய்வு விளக்கம் - ஆய்வுக்களம் - தரவுகள் சேகரிக்கும் முறை - களப்பணியின் நோக்கம் - களஆய்வின் அடிப்படை - தகவலாளரைத் தெரிவு செய்தல் - களச்சூழல் - தகவல் திரட்டும் முறை - களச்சிக்கல்கள் - தீர்வுகள் - களப்பணியாளர் - கள ஆய்வின் வகைகள் - நேர்காணல் விளக்கம் - இயல்பு - வகை - நேர்காணலில் ஏற்படும் இடர்ப்பாடுகள் - நேர் காணல் உத்திகள்.

வினாநிரல் - நோக்கம் - வினாநிரல் வகை - வினாநிரல் உள்ளடக்கம் - வினா வரிசைப்படுத்தல் நிரப்பும் பட்டியல் - ஆவணப்பட்டியல் - இடர்ப்பாடுகள் - செய்முறை மதிப்பீடு.

அலகு - 5. ஆய்வு வரைவு - ஆய்வுப் பகுப்பும் தொகுப்பும்

ஆய்வு - ஆய்வுத் தலைப்பைத் தேர்ந்தெடுத்தல் - ஆய்வு நெறித்திட்டம் - கருதுகோள் உருவாக்கம் - திட்டமிடல் - முதன்மை ஆதாரங்கள் - துணைமை ஆதாரங்கள் - சார்பாதாரங்கள் - குறிப்பெடுத்தல் - நூல்கள் - கலைக்களஞ்சியம் - ஆவணங்கள் - இதழ்கள் - மலர்கள் - நாட்குறிப்புகள் - அடிக்குறிப்புகள் - மேற்கோள்கள் - பின்னிணைப்புகள் - விளக்கப்படங்கள் - அட்டவணைகள் - களப்பணி - நேர்காணல் வினாநிரல் - பட்டியல்.

ஆய்வேட்டின் அமைப்பு

முகப்புப்பகுதி - தலைப்பு - சான்றிதழ் - உறுதிமொழி - நன்றியுரை - பொருளடக்கம் - சுருக்கக் குறியீட்டு விளக்கம்.

ஆய்வுரைப்பகுதி

1. முன்னுரை:- தலைப்பு விளக்கம் - ஆய்வு எல்லை - ஆய்வு ஆதாரங்கள் - முந்தைய ஆய்வுகள் - ஆய்வுக் கருதுகோள் - ஆய்வு நோக்கம்.
2. ஆய்வில் மேற்கொள்ள வேண்டிய நடை - தொடரமைப்பு - உள்தலைப்பு - அடிக்குறிப்பு முறை - மேற்கோள் முறை.
3. முடிவுரை:- ஆய்வின் பயன் - ஆய்வு முடிவு - எதிர்கால ஆய்வுக் குறிப்புகள்.
4. ஆய்வுத் துணைக் குறிப்புகள் - அகரவரிசை - சொல்லடைவு - பின்னிணைப்பு - பக்க எண் அமைவு - அடிக்குறிப்பு அமைவிடம் - படங்கள் எண் அளவு - அட்டவணை அமைவு.

பாடநூல்

1. ஆராய்ச்சி நெறிமுறைகள், பொற்கோ, ஐந்திணை பதிப்பகம், சென்னை. 2004.
2. ஆய்வியல் நெறிமுறைகள், கு.வெ.பாலசுப்பிரமணியன், உமாநூல் வெளியீட்டகம், தஞ்சாவூர், 2004.


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BACHELOR OF COMMERCE

SYLLABUS FOR B.COM.

OUTCOME BASED EDUCATION - CHOICE BASED CREDIT SYSTEM

FOR THE STUDENTS ADMITTED FROM

THE ACADEMIC YEAR 2019 - 20 ONWARDS


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SEMESTER - V

Elective Course – I Paper – 1	B.COM.	2019 - 2020
Code: M19UCME01	BUSINESS RESEARCH METHODS	
Credit: 4		

Objectives:

- To exposes that the basic of business research to equip students with principles of quantitative research
- To acquire about the fundamentals of research methods and statistical tools.

Course Outcomes:

On the successful completion of the course students will be able to

CO	Statement	Knowledge Level
CO1	Identify the basic components of research	K1
CO2	Bring out the different kinds of sampling techniques	K2
CO3	Analysis the methods of data collection	K4
CO4	Apply the testing of hypothesis	K3
CO5	Develop the techniques for writing report	K3

SYLLABUS CONTENT

Unit - I:

Meaning of Research - Types of research - Research design - Components of the Research design and **Research ethics.**

Unit - II:

Sample - Sampling Techniques - Methods of Sampling - Random and Non- Random sampling - Sampling errors.

Unit - III

Collection of data - Primary and Secondary Data - Tools of Collection of data - Questionnaire - Personal interview - Advantages - Disadvantages - Types - Pilot study and Pretesting.

Unit - IV:

Analysis and interpretation of data - Hypothesis - Characteristics good hypothesis - Methods of testing hypothesis - T test - F test, Chi-Square test.

Unit - V:

Research report - Types of report - Steps in drafting a research report


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TEXT BOOKS:

S. No.	Title of the Book	Author	Publisher	Year of Publication
1.	Research Methodology Methods and Techniques	Kothari, C.R.	Wishwa Prakashan,	2010

REFERENCE BOOKS:

S. No.	Title of the Book	Author	Publisher	Year of Publication
1.	Methodology and Techniques of Social Research	Wilkinson and Bhandarkar	Himalaya Publishing House	2008
2.	Statistical Methods	S.P.Guptha,	Sultan Chand & Sons,	2018
3.	Business Statistics	P.A. Navaneethan	Jai Publishers	2016

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	S
CO2	M	M	M	S	M
CO3	M	M	S	S	S
CO4	S	S	S	S	S
CO5	M	S	S	S	S

S - Strong; M - Medium


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