

3.4.1 Syllabus of the research methodology course work

GEETHANJALI COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous)
Cheeryal(V), Keesara(M), MEDCHAL Dist. – 501 301, Telangana State

SCHEME OF INSTRUCTION AND EXAMINATION

M.Tech. COMPUTER SCIENCE AND ENGINEERING

Academic Regulations: AR-16

Academic Year 2016-17

PROGRAM STRUCTURE

SEMESTER - I

S.No.	Course Code	Course	No. of Periods per Week			Scheme of Examination with Maximum Marks			No. of Credits
			L	T	P	CIE	SEE	Tot	
1	16MCS101	Advanced Database Engineering	4	-	-	30	70	100	4
2	16MCS102	Advanced Data Structures and Algorithms	4	-	-	30	70	100	4
3	Elective – I		4	-	-	30	70	100	4
	16MCS103	Mobile Computing							
	16MCS104	Social Media and Web Mining							
	16MCS105	Operating System Design							
4	Elective – II		4	-	-	30	70	100	4
	16MCS106	Cloud Computing							
	16MCS107	Information Retrieval System							
	16MCS108	Embedded Systems							
5	Elective – III		4	-	-	30	70	100	4
	16MCS109	Computer Forensics							
	16MCS110	Scripting Languages							
	16MCS111	Natural Language Processing							
6	Elective – IV		4	-	-	30	70	100	4
	16MCS112	Software Architecture and Design Pattern							
	16MCS113	Pattern Recognition							
	16MCS114	Mobile Application Development							
7	16MCS1L1	Computing Laboratory-I	-	-	4	30	70	100	2
8	16MCS1S1	Seminar	-	-	4	100	-	100	2
Total			24	0	8	310	490	800	28
Total Periods Per Week			32						

SEMESTER - II

S.No.	Course Code	Course	No. of Periods per Week			Scheme of Examination with Maximum Marks			No. of Credits
			L	T	P	CIE	SEE	Tot	
1	16MCS201	Advanced Computer Networks	4	-	-	30	70	100	4
2	16MCS202	Web Service and Service Oriented Architecture	4	-	-	30	70	100	4
3	Elective – V		4	-	-	30	70	100	4
	16MCS203	Information Security							
	16MCS204	Software Testing Methodologies							
4	Elective – VI		4	-	-	30	70	100	4
	16MCS206	Research Methodologies							
	16MCS207	Software Design and Engineering							
5	Elective – VII		4	-	-	30	70	100	4
	16MCS209	High Performance Computing							
	16MCS210	Ad hoc Sensor Networks							
6	Elective – VIII		4	-	-	30	70	100	4
	16MCS212	Cryptanalysis							
	16MCS213	Robotics							
	16MCS214	Bio Informatics							
7	16MCS2L1	Computing Laboratory-II	-	-	4	30	70	100	2
8	16MEN2SS	Soft Skills			4	100	-	100	2
Total			24	0	08	310	490	800	28
Total Periods Per Week			32						


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SEMESTER - III

S.No.	Course Code	Course	No. of Periods per Week			Scheme of Examination with Maximum Marks			No. of Credits
			L	T	P	CIE	SEE	Tot	
1	16MCS3C1	Comprehensive Viva Voce	-	-	-	-	100	100	4
2	16MCS3P1	Project Phase -I	-	-	-	-	-	-	12*
Total			-	-	-	-	100	100	16

SEMESTER - IV

S.No.	Course Code	Course	No. of Periods per Week			Scheme of Examination with Maximum Marks			No. of Credits
			L	T	P	CIE	SEE	Tot	
1	16MCS4P1	Project Phase-II and Dissertation	-	-	-	100	100	200	18*
Total			-	-	-	100	100	200	18

*Credits will be awarded only at the end of Semester End Examination (SEE). Marks Memo for project shall be generated only after successful completion of the project.


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(Autonomous)
Cheeryal(V), Keesara(M), MEDCHAL Dist. – 501 301, Telangana State

16MCS206-RESEARCH METHODOLOGIES
Elective- VI

I Year. M.Tech. (CSE) – II Sem

Prerequisite(s): None

L	T	P	C
4	-	-	4

Course Objectives

1. Introduces research paper writing and publication skills.

Course Outcome

- CO1. Ability to distinguish research methods
- CO2. Ability to write and publish a technical research paper.
- CO3. Ability to review papers effectively

UNIT I

Introduction, Technical Research Paper Writing and Publication

UNIT II

Research Paper Search

UNIT III

Research Ethics, Research Methods in Computer Science and Engineering and Engineering, Research Methods for Software Engineering, Research Methods (deductive methods and proofs)

UNIT IV


Paper Publishing and Reviewing, Measured-based research methods in Computer Engineering

UNIT V

Preparation & Presentation of a scientific paper

REFERENCE BOOK(S)

1. A Computer Scientist's Guide to Writing and Publishing Technical Articles, Paul Martin, Technical Report, CS-TR-95-4, Dept of CS, Victoria University of Wellington, New Zealand, 1995.
2. Marcia Martens Pierson, Bion L. Pierson, Beginnings and Endings: Keys to Better Engineering Technical Writing, IEEE Transactions on Professional Communication (IEEE T-PC), Vol. 40, No. 4, pp 299 - 304 December 1997


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Department of CSE
PROGRAM STRUCTURE

(Applicable for the Batch admitted from the Academic Year 2018-19 onwards)

I YEAR I SEMESTER

S.No.	Group Code	Group	Subject	L	T	P	Credits
1.	18MCS101	PC 1	Advanced Data Structures	3	-	-	3
2.	18MCS102	PC 2	Mathematical Foundations of Computer Science	3	-	-	3
3.		PSE 1	Program Specific Elective 1	3	-	-	3
4.		PSE 2	Program Specific Elective 2	3	-	-	3
5.	18MCS1L1	Laboratory1	Advanced Data Structures Lab	-	-	4	2
6.		Laboratory2	Based on Program Specific Electives-1	-	-	4	2
7.	18MCS109	PW	Research Methodology & IPR	2	-	-	2
8.		Audit 1	AUDIT COURSE 1	2	-	-	-
TOTAL CREDITS				16	-	8	18

Program Specific Elective 1

1	18MCS103	Machine Learning
2	18MCS104	Cryptography & Network Security
3	18MCS105	Internet of Things

Program Specific Elective 1 Lab

1	18MCS1L2	Machine Learning Lab
2	18MCS1L3	Cryptography & Network Security Lab
3	18MCS1L4	Internet of Things Lab

Program Specific Elective 2

1	18MCS106	Software Architectures
2	18MCS107	Information Retrieval Systems
3	18MCS108	Distributed Systems

AUDIT COURSE 1

1	18MAC101	Indian Constitution
2	18MAC102	Soft Skills

I YEAR II SEMESTER

S.No.	Group Code	Group	Subject	L	T	P	Credits
1.	18MCS201	PC 3	Advanced Algorithms	3	-	-	3
2.	18MCS202	PC 4	Soft Computing	3	-	-	3
3.		PSE 3	Program Specific Elective 3	3	-	-	3
4.		PSE 4	Program Specific Elective 4	3	-	-	3
5.	18MCS2L1	Laboratory 3	Advanced Algorithms Lab	-	-	4	2
6.		Laboratory 4	Based on Program Specific Electives-3	-	-	4	2
7.	18MCS201	PW	MINI PROJECT with Seminar	-	-	4	2
8.		Audit 2	AUDIT COURSE 2	2	-	-	-
TOTAL CREDITS				14	-	12	18

Program Specific Elective 3

1	18MCS203	Digital Forensics
2	18MCS204	Data Analytics
3	18MCS205	Parallel Computing

Program Specific Elective 3 Lab

1	18MCS2L2	Digital Forensics Lab
2	18MCS2L3	Data Analytics Lab
3	18MCS2L4	Parallel Computing Lab

Program Specific Elective 4

1	18MCS206	Human Computer Interaction
2	18MCS207	Computer Vision
3	18MCS208	Distributed Databases

AUDIT COURSE 2

1	18MAC201	Professional Ethics
2	18MAC202	Disaster Management

II YEAR I SEMESTER

S. No	Group Code	Group	Subject	L	T	P	Credits
1.		PSE 5	Program Specific Elective 5	3	-	-	3
2.		OEC	Open Elective	3	-	-	3
3.	18MCS301	PW	PROJECT / DISSERTATION PHASE – I	-	-	20	10
TOTAL CREDITS				6	-	20	16

Program Specific Elective 5

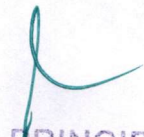
1	18MCS302	Optimization Techniques
2	18MCS303	High Performance Computing
3	18MCS304	Ad hoc and Sensor Networks

OPEN ELECTIVES

1	18MOE301	Business Analytics
2	18MOE302	Industrial Safety
3	18MOE303	Operations Research
4	18MOE304	Cost Management of Engineering Projects
5	18MOE305	Composite Materials
6	18MOE306	Energy from Waste
7	18MOE307	Power from Renewable Energy Sources

II YEAR II SEMESTER

S. No	Group Code	Group	Subject	L	T	P	Credits
1.	18MCS401	PW	PROJECT / DISSERTATION PHASE – II	-	-	32	16
TOTAL CREDITS				-	-	32	16



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**Geethanjali College of Engineering And Technology (Autonomous)
Cheeryal (V), Keesara (M), Medchal Dist., Telengana-501301**

18MCS109 – RESEARCH METHODOLOGIES and IPR

M.Tech. CSE I Year, I Semester

L	T	P/D	C
2	-	-	2

Prerequisite(s): None

Course Objectives:

Develop ability to

1. Introduce research paper writing and induce paper publication skills.
2. Introduce the concept of Analytics for Business
3. Introduce Hypothesis Testing
4. Introduce Presentation of the Research Work
5. Give the introduction to Intellectual Property Rights

Course Outcomes (COs):

At the end of the course, student would be able to

- CO 1: Ability to distinguish research methods
- CO 2: Ability to write and publish a technical research paper
- CO 3: Ability to review papers effectively
- CO 4: Assess different multiple analytical methodologies and Explore chosen algorithms for accuracy
- CO 5: IPR and Patent filing

Unit-I : Introduction

Objective of Research; Definition and Motivation; Types of Research; Research Approaches; Steps in Research Process; Criteria of Good Research; Ethics in Research.

Research Formulation and Literature Review:

Problem Definition and Formulation; Literature Review; Characteristics of Good Research Question; Literature Review Process.

Unit-II : Data Collection

Primary and Secondary Data; Primary and Secondary Data Sources; Data Collection Methods; Data Processing; Classification of Data.

Data Analysis:

Statistical Analysis; Multivariate Analysis; Correlation Analysis; Regression Analysis; Principle Component Analysis; Samplings;

Unit-III : Research Design

Need for Research Design; Features of a Good Design; Types of Research Designs; Induction and Deduction.

Hypothesis Formulation and Testing:

Hypothesis; Important Terms; Types of Research Hypothesis; Hypothesis Testing; Z-Test; t-Test; f-Test; Making a Decision; Types of Errors; ROC Graphics.

Unit-IV : Test Procedures

Parametric and Non Parametric Tests; ANOVA; Mann-Whitney Test; Kruskal-Wallis Test; Chi-Square Test; Multi-Variate Analysis

Presentation of the Research Work:

Business Report; Technical Report; Research Report; General Tips for Writing Report; Presentation of Data; Oral Presentation; Bibliography and References; Intellectual Property Rights; Open-Access Initiatives; Plagiarism.

UNIT-V: Law of Patents, Patent Searches, Ownership, Transfer

Patentability – Design Patents – Double Patenting – Patent Searching – Patent Application Process – Prosecuting the Application, Post-issuance Actions, Term and Maintenance of Patents. Ownership Rights – Sole and Joint Inventors – Inventions Made by Employees and Independent Contractors – Assignment of Patent Rights – Licensing of Patent Rights – Invention Developers and Promoters.

Patent Infringement, New Developments and International Patent Law

Direct Infringement – Inducement to Infringe – Contributory Infringement – First Sale Doctrine – Claims Interpretation – Defenses to Infringement – Remedies for Infringement – Resolving an Infringement Dispute – Patent Infringement Litigation. New Developments in Patent Law

TEXT BOOKS :

1. Research Methodology. Methods & Technique : Kothari. C.R.
2. Intellectual Property – Copyrights, Trademarks, and Patents by Richard Stim, Cengage Learning

REFERENCE BOOKS :

1. Practical Research : planning and Design(8th Edition) – Paul D. Leedy and Jeanne E. Ormrod.
2. A Hand Book of Education Research – NCTE
3. Methodology of Education Research – K.S. Sidhu.
4. Tests, Measurements and Research methods in Behavioural Sciences- A.K. Singh.
5. Statistical Methods- Y.P. Agarwal.
6. Methods of Statistical Analysis- P.S Grewal.
7. Fundamentals of Statistics – S.C. Gupta, V.K. Kapoor.
8. Intellectual Property Rights by Deborah E. Bouchoux, Cengage Learning.
9. Managing Intellectual Property – The Strategic Imperative, Second Edition by
10. Vinod V.Sople, PHI Learning Private Limited.
11. Research methodology – S.S. Vinod Chandra, S. Anand Hareendran


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GEETHANJALI COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CSE

M.Tech (COMPUTER SCIENCE AND ENGINEERING)

PROGRAM STRUCTURE

(Applicable for the Batch admitted from the Academic Year 2020-21 onwards)

FIRST YEAR SEMESTER-I

S.No	Course Code	Subject	Category	L	T	P	CIE	SEE	Total	Credits	
1.	20MCS102	Advanced Data Structures	PC 1	3	-	-	30	70	100	3	
2.	20MCS103	Mathematical Foundations of Computer Science	PC 2	3	-	-	30	70	100	3	
3.	Program Specific Elective - I			3	-	-	30	70	100	3	
	20MCS104	Machine Learning	PSE I								
	20MCS105	Cryptography & Network Security									
	20MCS106	Internet of Things									
	20MCS107	Advanced Computer Networks									
4.	Program Specific Elective - II			3	-	-	30	70	100	3	
	20MCS108	Software Architectures	PSE II								
	20MCS109	Information Retrieval Systems									
	20MCS110	Distributed Systems									
	20MCS111	Mobile Application Development									
5.	20MCS1L1	Advanced Data Structures Lab	Laboratory 1	-	-	4	30	70	100	2	
6.	Based on Program Specific Elective-I		Laboratory 2	-	-	4	30	70	100	2	
	20MCS1L2	Machine Learning Lab									
	20MCS1L3	Cryptography & Network Security Lab									
	20MCS1L4	Internet of Things Lab									
	20MCS1L5	Advanced Computer Networks Lab									
7.	20MCS101	Research Methodology & IPR	PW	2	-	-	30	70	100	2	
8.	20MAC101	Indian Constitution	Audit I	2	-	-	-	-	-	-	
	20MAC102	Soft Skills									
Total				16	0	8				18	
Total Periods Per Week				24							

FIRST YEAR SEMESTER-II

S.No	Course Code	Subject	Category	L	T	P	CIE	SEE	Total	Credits	
1.	20MCS202	Advanced Algorithms	PC3	3	-	-	30	70	100	3	
2.	20MCS203	Soft Computing	PC4	3	-	-	30	70	100	3	
3.	Program Specific Elective - III			3	-	-	30	70	100	3	
	20MCS204	Digital Forensics	PSE III								
	20MCS205	Data Analytics									
	20MCS206	Parallel Computing									
	20MCS207	Blockchain Technology									
4.	Program Specific Elective - IV			3	-	-	30	70	100	3	
	20MCS208	Human Computer Interaction	PSE IV								
	20MCS209	Computer Vision									
	20MCS210	Distributed Databases									
	20MCS211	SOA & Micro-services									
5.	20MCS2L1	Advanced Algorithms Lab	Laboratory 3	-	-	4	30	70	100	2	
6.	Based on Program Specific Elective - III			Laboratory 4	-	-	4	30	70	100	2
	20MCS2L2	Digital Forensics									
	20MCS2L3	Data Analytics									
	20MCS2L4	Parallel Computing									
	20MCS2L5	Blockchain Technology									
7.	20MCS201	MINI PROJECT with Seminar	PW	-	-	4	100	-	100	2	
8.	20MAC201	Professional Ethics	Audit II	2	-	-	-	-	-	-	
	20MAC202	Disaster Management									
Total				14	0	12				18	
Total Periods Per Week				26							



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SECOND YEAR SEMESTER-I

S.No	Course Code	Subject	Category	L	T	P	CIE	SEE	Total	Credits
1.	Program Specific Elective - V		PSE V	3	-	-	30	70	100	3
	20MCS302	Optimization Techniques								
	20MCS303	High Performance Computing								
	20MCS304	Ad hoc and Sensor Networks								
	20MCS305	Social, Web and Mobile Analytics								
2.	Open Electives		OE	3	-	-	30	70	100	3
	20MOE301	Business Analytics								
	20MOE302	Industrial Safety								
	20MOE303	Operations Research								
	20MOE304	Cost Management of Engineering Projects								
	20MOE305	Composite Materials								
	20MOE306	Energy from Waste								
	20MOE307	Power from Renewable Energy Sources								
3.	20MCS301	PROJECT/ DISSERTATION PHASE - I	PW	-	-	20	100	-	100	10
Total				6	0	20				16
Total Periods Per Week				26						

SECOND YEAR SEMESTER-II

S.No	Course Code	Subject	Category	L	T	P	CIE	SEE	Total	Credits
1.	20MCS401	PROJECT/ DISSERTATION PHASE - II	PW	-	-	32	50	50	100	16
Total				0	0	32				16
Total Periods Per Week				32						



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**GEETHANJALI COLLEGE OF ENGINEERING AND TECHNOLOGY
(AUTONOMOUS)
CHEERYAL (V), KEESARA (M), MEDCHAL DIST., TELANGANA-501301**

20MCS101 - RESEARCH METHODOLOGIES & IPR

M.Tech. CSE I Year, I Semester

L	T	P	C
2	0	0	2

Course Objectives:

1. Introduce research paper writing and induce paper publication skills.
2. Give the introduction to Intellectual Property Rights

Course Outcomes:

1. Ability to distinguish research methods
2. Ability to write and publish a technical research paper
3. Ability to review papers effectively
4. IPR and Patent filing

UNIT - I

Introduction

Objective of Research; Definition and Motivation; Types of Research; Research Approaches; Steps in Research Process; Criteria of Good Research; Ethics in Research. Research Formulation and Literature Review:

Problem Definition and Formulation; Literature Review; Characteristics of Good Research Question; Literature Review Process.

UNIT - II

Data Collection

Primary and Secondary Data; Primary and Secondary Data Sources; Data Collection Methods; Data Processing; Classification of Data.

Data Analysis

Statistical Analysis; Multivariate Analysis; Correlation Analysis; Regression Analysis; Principle Component Analysis; Samplings

UNIT - III

Research Design

Need for Research Design; Features of a Good Design; Types of Research Designs; Induction and Deduction.

Hypothesis Formulation and Testing

Hypothesis; Important Terms; Types of Research Hypothesis; Hypothesis Testing; Z-Test; t-Test; f-Test; Making a Decision; Types of Errors; ROC Graphics.

UNIT - IV

Test Procedures

Parametric and Non Parametric Tests; ANOVA; Mann-Whitney Test; Kruskal-Wallis Test; Chi-Square Test; Multi-Variate Analysis

Presentation of the Research Work

Business Report; Technical Report; Research Report; General Tips for Writing Report; Presentation of Data; Oral Presentation; Bibliography and References; Intellectual Property Rights; Open-Access Initiatives; Plagiarism.

UNIT - V**Law of Patents, Patent Searches, Ownership, Transfer Patentability Design Patents**

Double Patenting – Patent Searching – Patent Application Process – Prosecuting the Application, Post-issuance Actions, Term and Maintenance of Patents. Ownership Rights – Sole and Joint Inventors – Inventions Made by Employees and Independent Contractors – Assignment of Patent Rights – Licensing of Patent Rights – Invention Developers and Promoters.

Patent Infringement, New Developments and International Patent Law

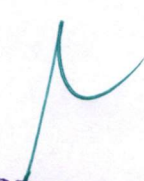
Direct Infringement - Inducement to Infringe – Contributory Infringement – First Sale Doctrine– Claims Interpretation – Defenses to Infringement – Remedies for Infringement – Resolving an Infringement Dispute – Patent Infringement Litigation. New Developments in Patent Law

Textbooks:

1. Research Methodology. Methods & Technique : Kothari. C.R.
2. Research Methodology, S.S Vinod Chandra, S AnandHareendran, Pearson
3. Intellectual Property – Copyrights, Trademarks, and Patents by Richard Stim, Cengage Learning

References:

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5. Statistical Methods- Y.P. Agarwal.
6. Methods of Statistical Ananalysis- P.S Grewal.
7. Fundamentals of Statistics – S.C. Gupta, V.K. Kapoor.
8. Intellectual Property Rights by Deborah E. Bouchoux, Cengage Learning.
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GCET (Autonomous)
MBA COURSE STRUCTURE
2016-2017
I Year-I semester

Code	Category	Course Title	Int.	Ext.	L	T/P	Credits
16MB0101	Core Course I	Management and Organizational Behavior	30	70	3		3
16MB0102	Core Course II	Business Law & Regulations	30	70	3		3
16MB0103	Core Course III	Managerial Economics	30	70	3		3
16MB0104	Core Course IV	Financial Accounting and Analysis	30	70	3		3
16MA0105	Core Course V	Statistics for Managers	30	70	3		3
16MB0106	Core course VI	Business Environment	30	70	3		3
16MA01L1	Laboratory	Statistical Data Analysis- Lab	50			4	2
16EN01L2	Seminar	Business Communication – Seminar	50	-	-	4	2
		Total Credits		-	18	8	22

I Year-II semester

Code	Category	Course Title	Int.	Ext.	L	T/P	Credits
16MB0201	Core Course I	Human Resource Management	30	70	3	-	3
16MB0202	Core Course II	Marketing Management	30	70	3	-	3
16MB0203	Core Course III	Financial Management	30	70	3	-	3
16MB0204	Core Course IV	MIS& ERP	30	70	3	-	3
16MA0205	Core Course V	Quantitative Techniques For Business Decisions	30	70	3	-	3
16MB0206	Open Elective - I	Disaster Management	30	70	3		3
16MB0207		Cross Culture Management					
16MB0208		International Business					
16MB0209		Event Management					
16MB0210	Laboratory	Annual Report Analysis - Lab	50	-	-	4	2
16MB0211	Seminar	Summer Internship - Seminar	50	-	-	4	2
		Total Credits			18	8	22

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II Year-I semester

Code	Category	Course Title	Int	Ext	L	T/P	Credits
16MB0301	Core Course I	Research Methodology	30	70	3	-	3
16MB0302	Core course II	Operations Management	30	70	3	-	3
16MB0303	Open Elective II	Mergers & Acquisitions	30	70	3	-	3
16MB0304		Business Ethics					
16MB0305		MSME Management					
16MB0306		Intellectual Property Rights					
	Core Elective I	(MKT/ /FIN/HRM/PROD/SYS)	30	70	3	-	3
	Core Elective II	(MKT/ /FIN/HRM/PROD/SYS)	30	70	3	-	3
	Core Elective III	(MKT/ /FIN/HRM/PROD/SYS)	30	70	3	-	3
16MB0322	Seminar	Personal Effectiveness – Seminar	50	-	-	4	2
16MB0323	Seminar	Business Best Practices and Success Stories of Emerging Leaders - Seminar	50	-	-	4	2
		Total Credits			18	8	2


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II Year-II semester

Code	Category	Course Title	Int.	Ext.	L	T/P	Credits
16MB0401	Core Course I	Entrepreneurship	30	70	3	-	3
16MB0402	Core Course II	Strategic Management	30	70	3	-	3
	Core Elective IV	(MKT/ /FIN/HRM/PROD/SYS)	30	70	3	-	3
	Core Elective V	(MKT/ /FIN/HRM/PROD/SYS)	30	70	3	-	3
	Core Elective VI	(MKT/ /FIN/HRM/PROD/SYS)	30	70	3	-	3
16MB0418	Seminar	Pre Submission Of Project – Seminar	50	-	-	4	2
16MB0419	-	Comprehensive Viva	-	100	-	4	2
16MB0420	-	Project	25	75	-		3
		Total Credits			15	8	22


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GEETHANJALI COLLEGE OF ENGINEERING AND TECHNOLOGY

**MBA III-SEM
16MB0301**

RESEARCH METHODOLOGY

**L/ T/P/D C
3 --- 3**

Pre-requisite: 16MA0105- STATISTICS FOR MANAGERS

16MA0205- QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

Course Aim: To understand the research methodology and basic statistical tools for analysis and Interpretation of quantitative and qualitative data.

Learning Outcome: Students will be able to apply the principles of research methodology for the research design for the various mini and major projects of the MBA programme. They will be able to analyze the data statistically.

UNIT-I:

Research Methodology: Overview of Research methodology-Research problems, Types of Research, Research process-Ethics in business research-limitations of social science research. Observation studies and research.

UNIT-II:

Design of Business research- Research design an overview : Qualitative research Vs Quantitative Research ,Types of research design, Validity of research design , Types of designs

UNIT-III:


Data Collection- Methods & Tools Primary Data, Secondary Data, designing questionnaire and Schedule of questions, Relevant cases and exercises Sampling methods: Random, Non-Random Techniques, Tabulation, interpretation and analysis of data.

UNIT-IV:

Measurement of scaling Techniques- Introduction objectives Qualitative research Vs Quantitative measures, classification /types of measures characteristics/goodness of instruments/measurement of scales. Errors in measurement. Types of scales /Techniques comparative and non-comparative scaling techniques guidelines for deciding scales.

UNIT-V:

Report writing & Bibliography- Introduction , Objectives , format of a report , classification of the sectors of the report, PowerPoint presentations of the reports, Synopsis Vs main report, Footnotes, Importance of hypotheses and objectives in report writing ,Types of reports ,Report format , cover page, preliminary pages, main body , appendices and bibliography , Importance of Excel and SPSS in report writing.


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SUGGESTED TEXT BOOKS

1. Krishna Swamy, Sivakumar, Mathirajan-Management Research Methodology, Pearson, 2014.
2. R. Pannerselvam -Research Methodology-, PHI, 2014.

REFERENCES:

1. T N Srivatsava, shailaja rego -Business research Methods-TMH, 2014.
2. Business research Methods -Donald R cooper, Pamela S Schindler.
3. William .G. Zikmund- Business Research Methods_ Thomson.
4. Business Research Methods-SL Gupta , Hitesh Gupta


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GEETHANJALI COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS)
Cheeryal (V), Keesara (M), Medchal dist-501 301, Telangana State
MBA PROGRAMME STRUCTURE
(2018-19)

I Year-I semester

Course Code	Category	Course Title	CIE Marks	SEE marks	Total number of periods per week			Credits
					L	T	P	
18MB0101	Core Course I	Management and Organizational Behavior	30	70	3	1	-	4
18MB0102	Core Course II	Business law and Environment	30	70	3	1	-	4
18MB0103	Core Course III	Managerial Economics	30	70	3	1	-	4
18MB0104	Core Course IV	Financial Accounting and Analysis	30	70	3	1	-	4
18MA0105	Core Course V	Statistics for Managers	30	70	3	1	-	4
18MB0106	Core course VI	Indian ethos and Management ethics	30	70	3	1	-	4
18EN01L1	Lab	Business Communication – Lab	30	70	-	-	4	2
		Total	210	490	18	6	4	26

I Year-II semester

Course Code	Category	Course Title	CIE Marks	SEE marks	Total number of periods per week			Credits
					L	T	P	
18MB0201	Core Course I	Human Resource Management	30	70	3	1	-	4
18MB0202	Core Course II	Marketing Management	30	70	3	1	-	4
18MB0203	Core Course III	Financial Management	30	70	3	1	-	4
18MB0204	Core Course IV	MIS& ERP	30	70	3	1	-	4
18MA0205	Core Course V	Quantitative Analysis For Business Decisions	30	70	3	1	-	4
18MB0206	Core Course VI	Entrepreneurship	30	70	3	1	-	4
18MB02L1	Lab	Business Data analytics Lab	30	70	-	-	4	2
		Total	210	490	18	6	4	26

Total number of credits for first year = 52

II Year-I semester

Course Code	Category	Course Title	CIE Marks	SEE marks	Total number of periods per week			Credits
					L	T	P	
18MB0301	Core Course I	Research Methodology and Statistical Analysis	30	70	3	1	-	4
18MB0302	Core course II	Operations Management	30	70	3	1	-	4
18MB0303	Open Elective I	Tourism Management	30	70	3	1	-	4
18MB0304		Fundamentals of Corporate social responsibility						
18MB0305		E- Business						
18MB0306		Intellectual Property Rights						
18MB0307	Core Elective I	Consumer behavior	30	70	3	1	-	4
18MB0310		Risk management						
18MB0313		Performance management						
18MB0316		Materials management						
18MB0319		Start up Management						
18MB0308	Core Elective II	Advertising and Sales Management	30	70	3	1	-	4
18MB0311		Security analysis and Portfolio management						
18MB0314		Learning and Development						
18MB0317		Total quality management						
18MB0320		MSME Management						
18MB0309	Core - Elective III	Digital Marketing	30	70	3	1	-	4
18MB0312		Financial institutions, Markets & Services						
18MB0315		Employee Relations						
18MB0318		Technology management						
18MB0321		Family Business Management						
18MB03S1	Seminar	* Summer Internship – Seminar	100	-	-	-	-	2
		Total	280	420	18	6	-	26

***Summer internship will be executed by the candidate after the end of second semester (summer). Documentation and evaluation will be done in the third semester.**

II Year-II semester

Course Code	Category	Course Title	CIE Marks	SEE marks	Total number of periods per week			Credits (C)
					L	T	P	
18MB0401	Core Course I	Strategic Management	30	70	3	1	-	4
18MB0402	Open elective II	Disaster Management	30	70	3	1	-	4
18MB0403		Cross Culture Management						
18MB0404		Management of NGOs						
18MB0405		Supply Chain Management						
18MB0406	Core Elective IV	Retailing management	30	70	3	1	-	4
18MB0409		Strategic investment and financial decisions						
18MB0412		Talent and Knowledge Management						
18MB0415		Business Process Reengineering						
18MB0418		Entrepreneurial Finance						
18MB0407	Core Elective V	Service Marketing	30	70	3	1	-	4
18MB0410		International financial management						
18MB0413		International Human Resource Management						
18MB0416		Sourcing and Procurement						
18MB0419		Entrepreneurial Marketing						
18MB0408	Core Elective VI	International marketing	30	70	3	1	-	4
18MB0411		Financial derivatives						
18MB0414		Leadership and Change Management						
18MB0417		Project Management						
18MB0420		Creativity Innovation and Entrepreneurship						
18MB04S1	Seminar	Pre Submission Of Project – Seminar	100		-	-	2	1
18MB04CV	-	Comprehensive Viva	-	100	-	1	-	1
18MB0421	-	Project	30	70	-	-	-	4
		Total	280	520	15	6	2	26

Total number of credits in the second year = 52

**Geethanjali College of Engineering And Technology (Autonomous)
Cheeryal (V), Keesara (M), Medchal Dist., Telengana-501301**

18MB0301- Research Methodology and Statistical Analysis

MBA II YR I-Sem

Prerequisite(s):

L	T	P/D	C
3	1	-	4

18MA0105 – STATISTICS FOR MANAGERS

18MA0205-QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

Course objectives: Develop ability to

1. Acquire knowledge and understand the research process
2. Acquire knowledge about multivariate analysis

Course Outcomes: At the end of the course, student will be able to

- CO1. Understand the basic research methods.
- CO2. Methods of data collection
- CO3. Understand the non parametric hypothesis testing.
- CO4. Estimate classification of multivariate analysis.
- CO5. Know the interpretation and report writing .

UNIT-I: INTRODUCTION TO RESEARCH:

Types of Research, Method Vs Methodology, Research Process, Research design, Types of design.

UNIT-II: SAMPLE DESIGN:

Census Vs Survey, characteristics of a good sample, sampling fundamentals, types of sample design, Measurement and scaling, Methods of data collection: Primary, Secondary. Tools for data collection: Questionnaire, Interview, Schedule. Tabulation, Graphical presentation of data.

UNIT-III: NON- PARAMETRIC TEST:

Processing of data through Non- Parametric Hypothesis Testing. Sign test, Mc Nemer, Wilcoxon Matched pair or Signed rank, Rank sum- Wilcoxon Mann Whitney or U test, Kruskal Wallis- H test, Runn test.

UNIT-IV: MULTIVARIATE ANALYSIS:

Classification of multivariate analysis, Factor analysis, Cluster analysis, Conjoint analysis, Discriminant analysis.

UNIT-V: REPORT WRITING:


Interpretation, significance of report writing, layout of report writing, types of reports, oral presentation, precautions for writing research reports.

TEXT BOOKS:

1. "Business Statistics Using Excel", Glyn Davis & Branko Pecar, Oxford University Press, 2012.
2. "Research Methodology Methods & Techniques", C.R. Kothari, New Age International Publishers, Fourth edition, 2018

REFERENCE BOOKS:

1. "Business Statistics-Problems and Solutions", J.K.Sharma, Pearson, 2010.
2. Business Research Methods, Zikmund, Cengage, 2012.
3. "Business Statistics", Sharma, Pearson, 2012.



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GEETHANJALI COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS)
Cheeryal (V), Keesara (M), Medchal Dist-501 301, Telangana State
MBA PROGRAMME STRUCTURE (AY 2020-21)

I Year-I semester

Course Code	Category	Course Title	CIE Marks	SEE marks	Total number of periods per week			Credits
					L	T	P	
20MB01001	Core Course I	Management and Organizational Behavior	30	70	3	1	-	4
20MB01002	Core Course II	Business Law and Environment	30	70	3	1	-	4
20MB01003	Core Course III	Managerial Economics	30	70	3	1	-	4
20MB01004	Core Course IV	Financial Accounting and Analysis	30	70	3	1	-	4
20MA01005	Core Course V	Data Analytics	30	70	3	1	-	4
20MB01006	Open Elective-1	Indian Ethos and Management Ethics	30	70	3	0	-	3
20MB01007		Cross Cultural Management						
20MB01008		Management of NGOs						
20MB01009		Disaster Management						
20EN01007	Core Course VI	Functional English	30	70	3	0	-	3
20MB01L01	Lab	Business Data Analysis Lab	30	70	-	-	4	2
		Total	240	560	21	5	4	28

I Year-II semester

Course Code	Category	Course Title	CIE Marks	SEE marks	Total number of periods per week			Credits
					L	T	P	
20MB02001	Core Course I	Human Resource Management	30	70	3	1	-	4
20MB02002	Core Course II	Marketing Management	30	70	3	1	-	4
20MB02003	Core Course III	Financial Management	30	70	3	1	-	4
20MB02004	Core Course IV	MIS & ERP	30	70	3	1	-	4
20MA02005	Core Course V	Quantitative Analysis For Business Decisions	30	70	3	1	-	4
20MB02006	Core Course VI	Entrepreneurship	30	70	3	1	-	4
20EN02L01	Lab	Business Communication –Lab	30	70	-	-	4	2
		Total	210	490	18	6	4	26

Total number of credits for first year(28+26) = 54

II Year-I semester

Course Code	Category	Course Title	CIE Marks	SEE marks	Total number of periods per week			Credits
					L	T	P	
20MB03001	Core Course I	Research Methodology and Statistical Analysis	30	70	3	1	-	4
20MB03002	Core course II	Operations Management	30	70	3	1	-	4
20MB03003	Open Elective II	Total Quality Management	30	70	3	0	-	3
20MB03004		International Business						
20MB03005		E- Business						
20MB03006		Fundamentals of Corporate Social Responsibility						
20MB03007	Core Elective I	Strategic Management Accounting	30	70	3	1	-	4
20MB03010		Performance Management						
20MB03013		Consumer Behavior						
20MB03016		Start up Management						
20MB03008	Core Elective II	Security Analysis and Portfolio Management	30	70	3	1	-	4
20MB03011		Learning and Development						
20MB03014		Advertising and Sales Management						
20MB03017		MSME Management						
20MB03009	Core Elective III	Financial Institutions, Markets & Services	30	70	3	1	-	4
20MB03012		Employee Relations						
20MB03015		Digital Marketing						
20MB03018		Family Business Management						
20MB03S01	Seminar	* Summer Internship - Seminar	100	-	-	-	-	2
		Total	280	420	18	5	-	25

***Summer internship will be executed by the candidate after the end of second semester (summer). Documentation and evaluation will be done in the third semester.**

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II Year-II semester

Course Code	Category	Course Title	CIE Marks	SEE marks	Total number of periods per week			Credits (C)
					L	T	P	
20MB04001	Core Course I	Strategic Management	30	70	3	1	-	4
20MB04002	Core Course II	Supply Chain Management	30	70	3	1	-	4
20MB04003	Core Elective IV	Strategic Investment and Financing decisions	30	70	3	1	-	4
20MB04006		Talent and Knowledge Management						
20MB04009		Retailing Management						
20MB04012		Entrepreneurial Finance						
20MB04004	Core Elective V	International Financial Management	30	70	3	1	-	4
20MB04007		International Human Resource Management						
20MB04010		Service Marketing						
20MB04013		Entrepreneurial Marketing						
20MB04005	Core Elective VI	Financial Derivatives	30	70	3	1	-	4
20MB04008		Leadership and Change Management						
20MB04011		International Marketing						
20MB04014		Creativity Innovation and Entrepreneurship						
20MB04S01	Seminar	Pre Submission Project – Seminar	100	-	-	-	2	2
20MB04015	-	Main Project Viva Voce	30	70	-	-	-	4
		Total	280	420	15	5	2	26

Total number of credits in the second year(25+26) = 51

Total Number of credits of the Program: 28+26+25+26=105

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**Geethanjali College of Engineering and Technology (Autonomous)
Cheeryal (V), Keesara (M), Medchal Dist., Telengana-501301**

20MB03001-Research Methodology and Statistical Analysis

MBA II Year I-Sem

L	T	P/D	C
3	1	-	4

Prerequisite(s):

20MB01005 – Statistics for Managers

20MA02005 - Quantitative Analysis for Business Decisions

Course objectives: Develop ability to

1. Acquire knowledge on the research process
2. Acquire knowledge on multivariate analysis

Course Outcomes: At the end of the course, student will be able to

1. Understand the basic research process.
2. Identify research problems and sources of data.
3. Organize and analyze data.
4. Use non-parametric tests for small samples.
5. Understand the types of MVA and reports.

UNIT-I: Introduction to research:

Types of Research, Research Process, Conceptualization of variables and Measurement – Types and measurement of variables – Reliability and validity in measurement of variables – Sources of error in measurement – Ethics in business Research, Scaling – Types and its techniques.

UNIT-II: Research Design:

Research Problem – Purpose of Research design, Types of Research Design – Experimental research design, Research Design for cross sectional, longitudinal studies, Research design for action research – Characteristics of the good research design. Data Collection Methods & Tools: Types of Data, Sources and Instruments for data, Guidelines for questionnaire, Sampling and its application.

UNIT-III: Tabulation:

Tabulation of Univariate, Bivariate and multivariate data, Data classification and tabulation, Diagrammatic and graphical representation of data. One dimensional, two dimensional and three dimensional diagrams and graphs. Small Sample Tests – t-Distribution-properties and applications, testing for one and two means, paired t-test. –test, Chi square.:

UNIT-IV: Non Parametric tests:

Sign test, Mc.Nemar, Wilcoxon Matched Pair or Signed rank, Rank sum – Wilcoxon Mann Whitney or U test, Kruskal Wallis – H test, Runn test.

UNIT-V: Multivariate Analysis:


Classification of MVA, Factor analysis, Cluster analysis, Conjoint analysis, Discriminant analysis. **Report Writing:** Importance of Report writing, Types of Research Reports, Report preparation and presentation, Report structure, Report formulation, Guides for effective documentation, Research Briefings. Referencing styles and citation in Business Management Research.

TEXT BOOKS:

1. Donald R Cooper, Pamela S.Schindler, Business Research Methods, Tata Mc. Graw Hill, 12e, 2019.
2. William G Zikmund, Barry J Babin, Jon C.Carr, Atanu Adhikari, Mitch.Griffin, Barry J. Babin, Business Research Methods, Cengage Learning,2012.

REFERENCE BOOKS:

1. Prahlad Mishra, Business Researchg Methods, Oxford University Press, 2015.
2. Naval Bajpai, Business Research Methods, Pearson Publications, 2e2017.
3. S.P. Gupta, Statistical Methods, Sultan Chand & Sons, 2018.


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