

DIRECTORATE OF DISTANCE EDUCATION GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY HISAR, HARYANA



ESTABLISHED BY STATE LEGISLATURE ACT 17 OF 1995 ('A+' GRADE NAAC ACCREDITED)

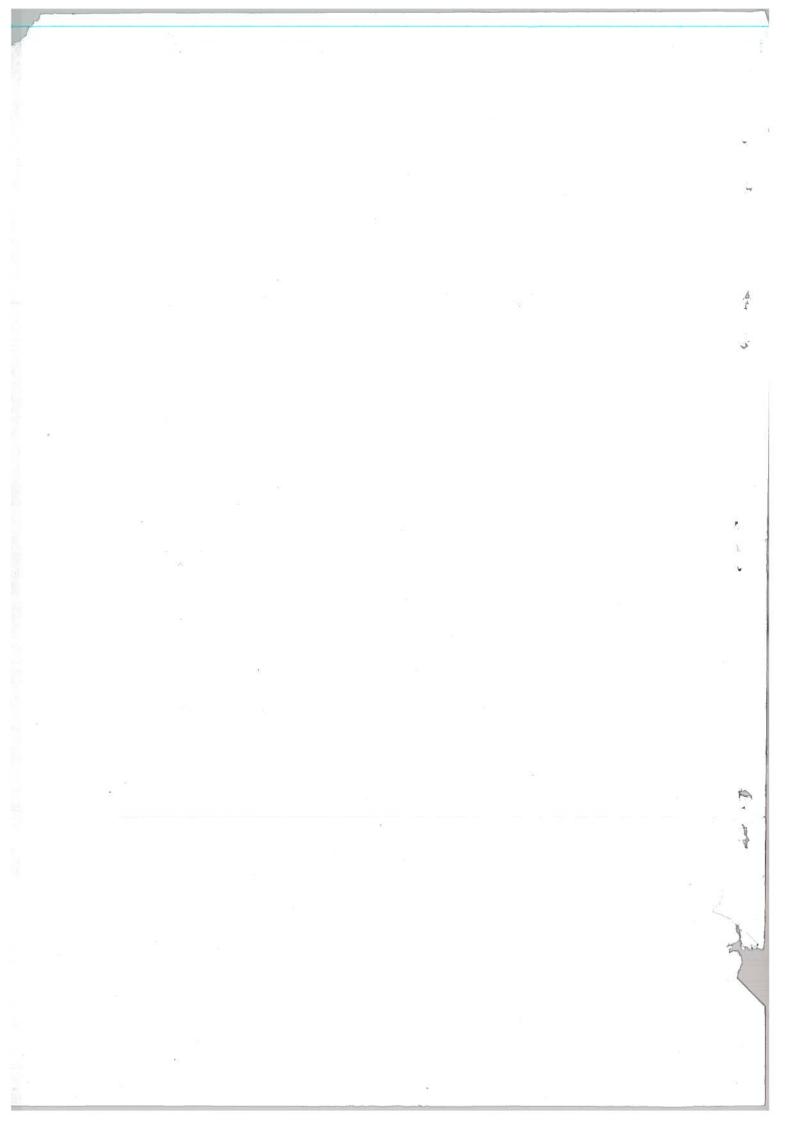
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Name of Programme:- Master of Commerce (M.Com.)

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PROGRAMME PROJECT REPORT

OF

Specialization: Finance, Human Resource Management and Marketing

TWO YEARS (FOUR SEMESTERS) PROGRAMME
Choice Based Credit System on Outcome Based Education
(Effective from Session 2022-23)



DIRECTORATE OF DISTANCE EDUCATION

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE AND TECHNOLOGY HISAR-125001, HARYANA

(YEAR-2022-23)

Discector (DE)

Prof. Shresh Kinner Mittal (115B)

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Science & Technology

PROGRAMME PROJECT REPORT (PPR) MASTER OF COMMERCE (M. COM)

A. PROGRAMME'S MISSION & OBJECTIVE

MISSION OF PROGRAMME

The Master of Commerce (M.Com) Programme has been started with a mission of the university to achieve excellence by introducing innovative job oriented courses for achieving the goal of holistic human development by promoting higher education in niche areas of commerce by establishing purposeful linkages with industry and professional bodies, and promoting quality of work life on campus.

OBJECTIVES OF PROGRAMME

- > To provide alternative mode of affordable quality education in the field of commerce.
- > To impart knowledge and necessary skills to the young graduates in emerging areas of commerce like accounting, auditing, business laws.
- > To prepare young graduates by skilling them with desired competence in commerce education and research.
- > To equip the students with commerce and related functional areas like finance, marketing, HRM and IB by enhancing their analytical skills.
- > To develop and strengthen theoretical, and applied aspects of commerce education.
- > To promote job oriented approach among young graduates.
- > To enable the learners about the latest trends in commerce education and profession.

B. RELEVANCE OF THE PROGRAMME WITH HIGHER EDUCATIONAL INSTITUTION'S (HEI'S) MISSION & GOALS

• HEI'S MISSION:

The University aspires to be a globally recognized Centre of excellence in the field of technical education and research. It strives to achieve this by introducing innovative job oriented courses, employing competent and motivated faculty, developing state-of-the-art infrastructure, striking purposeful linkages with industry and professional bodies, and promoting quality of work life on campus. The University focuses on the student community to imbue them with passion for



knowledge and creativity and to promote sustainable growth in academic resources, student placements, and holistic human development with a strong conviction for professional ethical, social and environmental issues.

HEI'S GOALS

The goals of the University as enshrined in the Act are to facilitate and promote studies and research in emerging areas of higher education with focus on new frontiers of and also to achieve excellence in these and connected fields.

PROGRAMMES OFFERED TO ACHIEVE HEI'S MISSION AND GOALS

The HEI's mission and goals are holistically inherited in the M.Com programme (Master of Commerce) of Directorate of Distance Education. Scheme and syllabus of this program is designed by Board of Studies and the same is approved by Academic Council. In 2022-23, same scheme and syllabus for distance programme in line with the Regular mode is adopted as per ODL guidelines of UGC. Latest and updated curriculum is used for this course. M.Com is most sought programme after graduation for the students who are looking forward to a carrier in modern business world such as businessmen, banker, economist, CA, auditor, statistian, taxation inspector and other allied jobs. This program delivers required theoretical and industry inputs to students that develops creative thinking to make them experts and professionals in the field.

The cost of the programs and provision for scholarship have been designed with objective of spreading mass education to meet needs of all class of learners. Personal Contact Programme (PCP) is offered by competent faculty as students' support services which ensures timely response to student's queries and, enhances overall quality standards. In all, the programme offered by Directorate of Distance Education, Guru Jambheswar University of Science and Technology ensure continuous education and meeting the needs of all class of learners.

C. NATURE OF PROSPECTIVE TARGET GROUP OF LEARNERS

Master of Commerce (M Com) is a postgraduate Master Degree which specializes in commerce, accounting, management and economics related subjects just like the Bachelor of Commerce. The program is generally focused on different disciplines like accounting, business management, corporate governance, human resource management, economics, statistics, finance, marketing or supply chain management. This courses is especially meant for college students who are presently at

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the entry level and want to expand their knowledge and career. Students who want to go for further studies or courses like in research or doctorate level can get a bonus with this course.

COMPOSITION OF THE TARGET GROUP

- ➤ The Graduate students desirous of enhancing their knowledge and qualifications for higher studies.
- > The persons who want to pursue their higher studies in business, commerce, economics.
- > The Persons who cannot pursue higher education due to any reason.
- > The Persons who are not able to pay higher fees in regular mode (Affordable Fee structure).
- > The Home makers who want to enhance their career in business and related areas.
- > The University employees with fee concession.
- > The students who are eligible for Post Matric Scholarship for SC student of Haryana as per the Government Guidelines.

D. APPROPRIATENESS OF PROGRAMME TO BE CONDUCTED IN OPEN AND DISTANCE LEARNING (ODL) MODE TO ACQUIRE SPECIFIC SKILLS AND COMPETENCE

All the courses in the programme are theoretical and problem based. So, no laboratory or experiment is needed to impart the skills and competence required for the programme. The specific skill and competencies required for a M.Com post graduate can be imparted to a great extent through SLMs prepared with the approach of self-explanatory self-contained, self-directed, self- motivating and self-evaluating. Distance Education Department is more costs effective and can take place while continuing full-time employment. Distance Education offers outcome based education, having industry centric curriculum. This enables the students to satisfy their needs and aspirations as the system provides enhanced learning opportunities.

LEARNING OUTCOMES

In its effort towards contribution of knowledge generation and dissemination the program is expected to

- > To enhance employability by upgrading their professional and managerial skills
- > To nurture creativity and entrepreneurship by gaining business acumen through case studies

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> To instill sensitivity among the students to become thought provoking leaders to face the challenges of a dynamically unstable environment.

> To sensitize them to understand ethical issues and dilemmas that businesses often face.

SPECIFIC SKILLS ACQUIRED

The students in the process of learning acquire the following skills:

- ➤ Negotiation skills: Negotiation skills are qualities that allow two or more parties to reach a compromise. These are often soft skills and include abilities such as communication, persuasion, planning, strategizing and cooperating. Understanding these skills is the first step to becoming a stronger negotiator.
- ➤ Accounting Skills: Accounting qualifications and skills include a wide range of abilities (working with numbers, paying close attention to detail, team working and more) that are required for all levels junior accountant, senior and accounting manager.
- ➤ Auditing Skills: It includes skills related with collecting and checking of accounting data, examining financial reports, diagnosing any financial risk, ensuring that company is following all rules and regulations, ability of problem solving, etc.
- > Entrepreneurial skills: It refers to the set of *cognitive*, *technical*, and *interpersonal* skills required in the practice of entrepreneurship.
- ➤ Communication skills: Communication skills are abilities you use when giving and receiving different kinds of information. Communication skills involve listening, speaking, observing and empathizing.

COMPETENCIES ACQUIRED

The various competencies acquired by students include:

- ➤ Personal Competencies How to manage Self Business.
- > Interpersonal competencies How to work with people in teams and make coordination in their activities.
- > Informational competencies- How to use and process information for the benefits of business or organization.

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➤ Action competencies- How to perform in the challenging business environment in a systematic way.

E. INSTRUCTIONAL DESIGN

Need based courses have been identified and the courses are developed. They have been fine-tuned taking into consideration industry/social requirements and also to educate rural people professionally. The course, curriculum and syllabi are designed and evaluated by a Departmental Committee. The curriculum and syllabi is then placed in the Board of Studies. The finalized curriculum and syllabi are then placed in the Academic Council for the final approval. The governing body of the distance education ensures that the distance education curriculum is at par with the regular programmes. In addition, electives have been introduced specifically for distance education programmes to suit the requirements of the dynamic changes taking place in the economy and Industry. However electives can be introduced as and when the need arises after obtaining necessary approvals from the appropriate academic bodies of the University. Approval of Board of Studies and Academic Council are obtained whenever modifications/additions are made in the existing curriculum and syllabi.

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CURRICLUM DESIGN

Scheme and Syllabus of M.Com Programme

The Master of Commerce is a two-year programme divided into four semesters. The course structure, viz, the scheme and syllabus of the M. Com Programme is given as under:

Scheme of Master of Commerce (M Com) 2022-23

	First Semester	ſ		
Course Code	Nomenclature of Paper	External	Internal	Number of Credits
MC-101	Management Process and Organizational Behaviour	70	30	5 Credits
MC-102	Business Environment	70	30	5 Credits
MC-103	Managerial Economics	70	30	5 Credits
MC-104	Financial Accounting and Reporting	70	30	5 Credits
MC-105	Business Statistics	70	30	5 Credits
MC-106	E-Commerce	70	30	5 Credits
MC-107	Seminar (On Indian Ethos, Computer Application in Business, Contemporary Issues in Cyber Security and Modern Business)* (Internal)		50	3 Credits
	Total	420	230	33 Credits

nr grade	Second Semes	ter		
Course Code	Nomenclature of Paper	External	Internal	Number of Credits
MC-201	International Business	70	30	5 Credits
MC-202	Financial Management	70	30	5 Credits
MC-203	Marketing Management	70	30	5 Credits
MC-204	Human Resource Management	70	30	5 Credits
MC-205	Management and Cost Accounting	70	30	5 Credits
MC-206	Research Methodology	70	30	5 Credits
	Total	420	180	30 Credits

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Third Semester				
Course Code	Nomenclature of Paper	External	Internal	Number of Credits
MC-301	Corporate Governance and Business Ethics	70	30	5 Credits
MC-302	Business Legislation	70	30	5 Credits
	Elective-I*	70	30	5 Credits
	Elective-II*	70	30	5 Credits
	Elective-III*	70	30	5 Credits
	Elective-IV*	70	30	5 Credits
	Open Elective-I**	70	30	5 Credits
	·Total	490	210	35 Credits

^{*} The students have 04 (Four) elective courses offered in Semester III from core specialization.

^{**} In addition to above, the students are also required to read one open elective course from list of open elective courses for 3rd semester.

	The List of Open Elective Papers for	or III Semeste	r	
Course	Nomenclature of Paper	External	Internal	Number of
Code				Credits
OE-301	Counseling Skills for Managers	70	30	5 Credits
OE-302	Fundamentals of Econometrics	70	30	5 Credits
OE-303	Personal Finance	70	30	5 Credits
OE-304	Applications of Marketing	70	30	5 Credits
OE-305	Export Import Procedures and	70	30	5 Credits
	Documentation			
OE-306	Corporate Governance and Business Ethics	70	30	5 Credits
OE-307	Indian Ethos and Values	70	30	5 Credits
OE-308	Computer Application in Business and	70	. 30	5 Credits
	Cyber Security			
OE-309	Disaster Management	70	30	5 Credits

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	Fourth Semester					
Course Code	Nomenclature of Paper	External	Internal	Number of Credits		
MC-401	Comprehensive Viva-Voce (External)	100		5 Credits		
MC-402	Research Project (Optional in lieu of one Elective paper)**	70	30	5 Credits		
	Elective-I*	70	30	5 Credits		
	Elective-II*	70	30	5 Credits		
	Elective-III*	70	30	5 Credits		
	Elective-IV*	70	30	5 Credits		
	Or					
MC-403	In-Company Project Work*** (Optional in lieu of four elective paper)			20 Credits		
	Total			25 Credits		

* The students have 04 (Four) elective courses offered in Semester IV from core specialization.

** Instructions for Research Project:

The following instructions will be followed:

- 1. Research project, which is optional, should be from major or core area of specialization of the student and shall be in lieu of one paper of his/her major or core area of specialization.
- 2. Students opting for MC-402 Research Project in the 4th semester will have to register for the project in Semester III itself by submitting a synopsis along with consent of the supervisor in the Office of DDE and to the office of Director/ Principal in case of affiliated institutes as per date mentioned in Prospectus.
- 3. Research project will be accepted for submission and evaluation when at least one research paper out of the project work has been published or accepted in a research journal or presented in any national conference/seminar. If a student fails to do so, then he/she has to give the presentation of the research project before a committee constituted by Director, (DDE) in case of DDE and Director/ Principal in case of affiliated institutes.
- 4. External examiner will evaluate the handwritten Research Project and will conduct viva-voce of 70 marks in the premises of DDE (for DDE students) and in the premises of affiliated institutes



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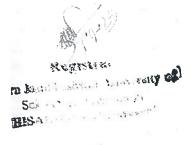
(for their respective students). However, the guide will submit the internal awards out of 30 marks separatelyon the basis of overall performance of the student in the project.

5. The panel of examiners/experts will be provided by Director, DDE. The internal examiner for assisting the external examiner for evaluation and conducting viva voce will be appointed by the Director, DDE in case of DDE and Director/ Principal in case of affiliated institutes.

*** Instructions for In-Company-Project-Work:

The following instructions will be followed:

- If any student gets placement offer, through on-campus placement drive, from any public or private sector organization during 4th semester and willingto join immediately, he or she may opt for In-Company-Project-Work for which detailed guidelines will be notified separately, from time to time, after taking necessary approval of competent authority of the University.
- 2. However, such In-Company-Project-Work will be jointly supervised by the Academic Guide (to be nominated by the Director, DDE in case of DDE and Director/ Principal in case of affiliated institutes) and Industry Guide (to be appointed by the competent authority of the concerned organization, who has offered appointment letter to the student and the organization requires to join immediately). The Academic Guide will get two hours per week credit per student maximum up to ten credits in his or her teaching workload duringthe semester.



The List of Elective Papers for Semester III and IV is as follows...

,	Finance Are	ea		
	3 rd Seme	ster		
Course	Nomenclature of Paper	External	Internal	Number of Credits
Code				& ·
MCF-311	Contemporary Issues in Accounting	70	30	5 Credits
MCF-312	Financial Restructuring and Valuation	70	30	5 Credits
MCF-313	Financial Statement Analysis	70	30	5 Credits
MCF-314	Security Analysis	70	30	5 Credits
MCF-315	Foreign Exchange Management	70	30	5 Credits
MCF-316	Risk Management and Insurance	70	30	5 Credits
	4 th Semeste	er		
Course	Nomenclature of Paper	External	Internal	Number of Credits
Code				
MCF-411	Management of banks and Financial	70	30	5 Credits
	Institutions	5		
MCF-412	Financial markets and Services	70	30	5 Credits
MCF-413	Business Taxation	70	30	5 Credits
MCF-414	Portfolio Management	70	30	5 Credits
MCF-415	Financial and Commodity Derivatives	70	30	5 Credits
MCF-416	Public Finance	70	30	5 Credits

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	Marketing Are	ea		
	3 rd Semes	ter		
Course	Nomenclature of Paper	External	Internal	Number of Credits
Code	A.			
MCM-321	Marketing of Services	70	30	5 Credits
MCM-322	Consumer Behavior	70	30	5 Credits
MCM-323	Integrated Marketing Communication	70	30	5 Credits
	Strategy			
MCM-324	Sales & Distribution Management	70	30	5 Credits
MCM-325	Logistics Management	70	30	5 Credits
MCM-326	Product and Brand Management	70	30	5 Credits
	. 4 th Semeste	er	<u> </u>	
Course	Nomenclature of Paper	External	Internal	Number of Credit
Code			72	
MCM-421	Retail Management	70	30	5 Credits
MCM-422	Rural Marketing	70	30	5 Credits
MCM-423	Industrial Marketing	70	30	5 Credits
MCM-424	Social Marketing	70	30	5 Credits
MCM-425	Digital and Social Media Marketing	70	30	5 Credits
MCM-426	Customer Relationship Management	70	30	5 Credits

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	Human Resource Manag	ement Area				
	3 rd Semest	er				
Course	Course Nomenclature of Paper External Internal I					
Code			•			
MCH-331	Human Resource Planning	70	30	5 Credits		
MCH-332	Labour Laws	70	30	5 Credits		
MCH-333	Management of Industrial Relations	70	30	5 Credits		
MCH-334	Leadership Dynamics	70	30	5 Credits		
MCH-335	Compensation Management	70	30	5 Credits		
MCH-336	Business Negotiations	70	30	5 Credits		
	4 th Semester					
Course	Nomenclature of Paper	External	Internal	Number of Credits		
Code						
MCH-431	Performance Management	70	30	5 Credits		
MCH-432	Labour Welfare and Social Security	70	30	5 Credits		
MCH-433	Managing Interpersonal and Group	70	30	5 Credits		
	Process					
MCH-434	Counseling Skills	70	30	5 Credits		
MCH-435	Organizational Change and Intervention	70	30	5 Credits		
	Strategies			8		
MCH-436	Global Human Resource Management	70	30	5 Credits		

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The Detailed Syllabus of M.Com Programme as follows...

FIRST SEMESTER

MC-101 MANAGEMENT PROCESS AND ORGANISATIONAL BEHAVIOR

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this paper is to familiarize the students with basic management concepts and behavioral processes in the organization.

Course Outcomes:

- CO1: Students will be able to recall the concepts of management process and organizational behavior.
- CO2: Students will be able to understand individual and group behavior, and understand the implications of organizational behavior on the process of management.
- **CO3**: Students will be able to employ different motivational theories and evaluate motivational strategies used in a variety of organizational settings.
- **CO4**: Students will be able to appraise the basic design elements of organizational structure and evaluate their impact on employees.
- **CO5**: Students will be able to evaluate how organizational change and culture affect working relationships within organizations.
- CO6: Students will be able to design strategies to manage individual, group and organizational behaviour.

Course Contents:

UNIT- I

Meaning, nature and scope of management; Management thoughts; Approaches to management: Scientific process, Decisions theory school, Quantitative and system school, Contingency theory of management; Managerial skills; Social responsibility of managers.

UNIT-II

Managerial Functions: Planning - concepts significance, types; Organizing - concept principles, types of organizations, authority responsibility, power, delegation, decentralization, Staffing; Directing (Leading, Motivating and Communicating); Coordinating; controlling, process and techniques.

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UNIT-III

Organizational Behaviour: concepts, determinants, challenges and opportunities of OB; contributing disciplines to the OB; Organizational culture and climate; Factors affecting OB; Understanding and managing individual behavior, Personality, Perception, Values, Attitudes and Learning.

UNIT-IV

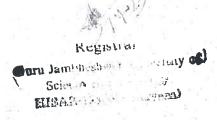
Understanding and managing group behavior: Interpersonal and group dynamics; Transactional Analysis; Applications of Emotional Intelligence in organizations. Communication: process, models of communication, issues in organizational communication. Organizational Change; to analyze the major concepts of organizational behaviour in business Organizational Development; Conflict Management and Stress Management.

Suggested Readings:

- 1. Chandan, J.S., Organizational Behaviour, Vikas Publications
- 2. Koontz, H & Wechrich, H., *Management*, Tata McGraw Hill.
- 3. Luthans, F., Organizational Behaviour, Tata McGraw Hill.
- 4. Robbins, S.P., *Management*, Prentice Hall Ins.
- 5. Robbins, S., Judge, T. & Sanghi, S., *Organizational Behaviour*, Prentice Hall of India.
- 6. Stoner, J., *Management*, Prentice Hall of India.
- 7. Davis, K., Organisational Behaviour, Tata McGraw Hill.

Important Instructions for the Course Coordinator and the Examiner:

- The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course by the Course Coordinator.
- The examiner is required to cover all course outcomes framed for a particular course in a balanced manner while setting nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. Wherever possible, the examiner may give a case study that will be equal to one question only. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.



BUSINESS ENVIRONMENT

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to analyze the micro and macro environment of business in coherent and critical manner.

Course Outcomes:

CO1: Students will be able to define and trace all the indicators of micro and macro environment affecting business organizations

- CO2: Students will be able to identify and illustrate the impact, challenges and opportunities of all environmental indicators on business organizations
- **CO3**: Students will be able to apply and demonstrate the gathered knowledge about how the various laws and other national and international policies influence the organizations in order to take proactive measures so that organizational effectiveness in maintained.
- **CO4**: Students will be able to distinguish and examine the necessary techniques and skills that help them in handling the organization's global and national issues efficiently.
- **CO5**: Students will be able to evaluate and value the importance of environment within which a business organization has to sustain itself successfully
- CO6: Students will be able to design and develop their approaches and systems in maintaining coherence both at micro and macro level

Course Contents:

UNIT-I

Indicators of Internal and External Business environment; Environmental scanning and risk assessment; Concepts of Economic systems; New Industrial Policy-1991 and Recent Financial and Economic Reforms, Recent Monetary and Fiscal Policy and their impact on Business Environment.

UNIT-II

Impact of Political, Economic, Social and Technological Environment on the Emerging Sectors of Indian Economy: Public Sector, Private Sectors, Services Sector and SME Sector; Privatization in India; Public Private Partnership; Challenges and Opportunities in the Rural sector.

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UNIT-III

Globalization Business Environment; Opportunities and challenges for MNCs in India; Foreign investment in India; Indian Foreign Trade and its Impact on Balance of Payment, Exchange rate Movements and India's Competitiveness in the world economy; World Trade Trends and Economic Integration. Contemporary Issues: Climate change, Food security, Geopolitics Sustainable Development and De-Globalization.

UNIT-IV

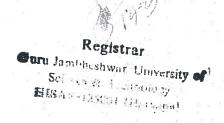
Legislations for Social Responsibilities- Consumer protection Act, 1986 and its Amendments, Competition Act, 2002 and its Amendments and Environmental Protection Act, 1986; Foreign Exchange Management Act, 1999 (FEMA) and their influences on the Business Environment.

Suggested Readings:

- 1. Faisal Ahmed and M. Absar Alam. Business Environment: Indian and Global Perspective, PHI, New Delhi.
- 2. Cherunilam, Francis, Business Environment, Himalya Publishing House.
- 3. Misra, S.K. & Puri, V.K., *Indian Economy*, Himalya Publishing House.
- 4. Aswath Thapa, K., Business Environment, Excel Books.
- 5. Bedi S.K., Business Environment, Excel Books.
- 6. Khujan Singh, Business Environment Theory and Practice, IAHRW Publications
- 7. Paul Jastin, Business Environment, Tata Mc Graw Hill.
- 8. Economic Survey, Govt. of India.

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MANAGERIAL ECONOMICS

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of this course is to acquaint the students with concepts and techniques used in the field of economics and to enable them to apply this knowledge in business decision-making. Emphasis is given to changes in the nature of business firms in the context of globalization.

Course Outcomes:

CO1: Students will be able to define the terms associated with managerial economics.

CO2: Students will be able to explain different theories of managerial economics.

CO3: Students will be able to apply the models of managerial economics in business decisions.

CO4: Students will be able to examine the demand and supply forces and their effect on pricing and output related decisions.

CO5: Students will be able to evaluate the effectiveness of various models and theories of managerial economics in demand, supply, production and costs related decision making procedures.

CO6: Students will be able to create the competitive strategies to ensure optimum utilisation of resources.

Course Contents:

UNIT-I

Theory of demand and consumer equilibrium-utility and indifference curve approach; Demand function; Elasticity of demand and its significance in managerial decision-making; Demand forecasting and its techniques.

UNIT-II

Theory of Cost: Types of cost: production cost, selling cost, R&D Cost, short run and long run cost curves, relation between cost and revenue, break-even point; Economies and diseconomies of scale and scope; Production function: Short term and long run production function, law of variable proportion and return to scale, Iso-quant curves.

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UNIT-III

Market Structure and Competition: Price and output determination under perfect competition, monopoly, monopolistic competition and oligopoly.

UNIT-IV

Modern theories of firm: Bamoul's theory of sales maximization, Managerial Theory, Behavioral Theory; National Income: Concept and Measurement.

Suggested Readings:

1. Ferguson, P. R. Rothschild, R. Ferguson G.J., Business Economics, Palgrave Macmillan.

2. Dwivedi, D.N., Managerial *Economics*, Vikas Publication.

- 3. Salvatore, Managerial Economics in Global Economy, Thomson Learning.
- 4. Thomas, C.R. & Maurice S.C., Managerial Economics, Tata McGraw Hill.

5. Koutsoyiannis, A., Modern Economics, Macmillian

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FINANCIAL ACCOUNTING AND REPORTING

Time Allowed: 3 Hours

M.M:70

Course Objective: The basic purpose of this course is to develop an insight of postulates, principles and techniques of accounting and application of financial and accounting information for planning, decision-making and control.

Course Outcomes:

CO1: Students will be able to describe various accounting concepts and principles.

CO2: Students will be able to recognize the usefulness of Financial Accounting & Reporting and its applications in the business.

CO3: Students will be able to apply the principles, postulates and techniques of accounting for planning and decision making.

CO4: Students will be able to differentiate between various types of accounting and reporting practices being followed within the organisation.

CO5: Students will be able to appraise the performance of organisations with the help of financial statements presented at the end of the year.

CO6: Students will be able to formulate advanced policy structure comprising of all accounting information required for controlling deviations in the performance.

Course Contents:

UNIT-I

Introduction to Accounting: Meaning, nature and scope, branches of accounting; Generally accepted accounting principles (GAAP); Demand and supply of financial statement information: Parties demanding financial statement information, Conflicts among parties, factors affecting demand for financial statement information.

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UNIT-II

Accounting Cycle: Business transactions and source documents, Analyzing transactions, Journalizing and posting transactions, preparing a trial balance, adjusted trial balance and preparation of financial statements of trading concerns. Final Accounts with adjustments.

UNIT-III

The conceptual framework of financial Statements: purpose of the framework, scope and coverage, Qualitative characteristics of financial statements, Concept of capital and capital maintenance. Performa financial statements of corporate entities. Significance of notes to financial statements and accounting policies. Other financial reports: Auditor's report, Directors report and corporate governance report.

UNIT-IV

Quality of earnings: Window dressing, Creative financial practices, impact of extraordinary items, Quality of disclosure in reported earnings. Financial Distress: meaning, indicators, models of distress prediction.

Suggested Readings:

- 1. Foster, George, Financial Statement Analysis, Pearson Ecducation Incl., Second Edition.
- 2. Gupta, R.L. and Radhaswamy, M., Advanced Accountancy Sultan Chand & Sons, New Delhi.
- 3. Shukla, M.C., Grewal, T.S. and Gupta, S.C., Advanced Accounts, S. Chand & Company, New Delhi.
- 4. Anthony R.N., D.F. Hawkins and K.A. Merchant, *Accounting: Text and Cases*, McGraw Hill
- 5. Jawahar Lal, Accounting Theory and Practice, Himalaya Publishing House.

Important Instructions for the Course Coordinator and the Examiner:

- The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course by the Course Coordinator.
- The examiner is required to cover all course outcomes framed for a particular course in a balanced manner while setting nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight morequestions will be set comprising two questions from each unit. Wherever possible, the examiner may give a case study that will be equal to one question only. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.



BUSINESS STATISTICS

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to make students learn about the applications

of statistical tools and techniques for decision making.

Course Outcomes:

CO1: Students will be able to recall different terms used in statistics.

CO2: Students will be able to understand the different methods used in statistics.

CO3: Students will be able to apply the knowledge of statistics in their future studies as well as in corporate sector also.

CO4: Students will be able to analyze the importance of statistics in business.

CO5: Students will be able to evaluate the proficiency of statistical methods in an industry or business.

CO6: Students will be able to assemble the different methods of statistics for the well being of business

Course Contents:

UNIT-I

Univariate analysis: central tendency, dispersion (theoretical concept); Probability: Introduction, addition theorem, multiplication theorem, conditional probability, Bayes Theorem. Theoretical probability distributions: Binomial, Poisson, Normal Distribution; their characteristics and applications.

UNIT-II

Sampling: probability and non probability sampling methods; Sampling distribution and its characteristics; Hypothesis testing: hypothesis formulation, and testing; Statistical Tests: z-test, t-test, F-test, Analysis of variance, Chi-square test, Wilcoxon Signed-Rank test, Kruskal-Wallis test.

UNIT-III

Correlation analysis: simple, partial and multiple correlations; Regression analysis: simple linear regression model, ordinary least square method. Time series analysis: components of a time series and their measurements and uses.

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UNIT-IV

Index numbers: meaning and types, methods for measuring indices, adequacy of indices; Statistical quality control: causes of variation in quality, Control Charts, Acceptance sampling.

Suggested Readings:

- 1. Gupta, S.P., Statistical Methods, Sultan Chand & Sons
- 2. Anderson, Sweeney and Williams, Statistics for Business and Economics, Cengage Learning.
- 3. Ken Black, Business Statistics, Wiley.
- 4. Levin, Richard I and David S Rubin, Statistics for Management, Prentice Hall, Delhi.
- 5. Aczeland Sounderpandian, Complete Business Statistics, Tata McGraw Hill, New Delhi.
- 6. Hooda, R.P., Statistics for Business and Economics McMillian, New Delhi.
- 7. Heinz, Kohler, Statistics for Business & Economics, Harper Collins, New York.
- 8. Lawrence B. Morse, Statistics for Business & Economics, Harper Collins, NY

Important Instructions for the Course Coordinator and the Examiner:

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- The examiner is required to cover all course outcomes framed for a particular course in a balanced manner while setting nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. Wherever possible, the examiner may give a case study that will be equal to one question only. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.



E COMMERCE

Time Allowed: 3 Hours

M.M:70

Course Objective:

This course exposes students to environment for E-commerce and developing

application skills for the same.

Course Outcomes:

CO1: Students will be able to outline the type of decisions taken at different levels of organisation.

CO2: Students will be able to explain the process of strategic decision making in an organisation.

CO3: Students will be able to apply various tools to assess business environment.

CO4: Students will be able to differentiate among various stages of strategic management starting from strategy formulation to its evaluation.

CO5: Students will be able to evaluate the strategy which best fits in achieving the organisational goals.

CO6: Students will be able to develop a framework of how an organisation actually works by developing policies and strategies.

Course Contents:

UNIT- I

Technology and Infrastructure for E-Commerce: Framework of E-commerce; Network Infrastructure for E-Commerce – Market Forces Influencing I-way, Network Access Equipment, Public Policy Issues Shaping the I-way; EDI - Applications in Business, Legal, Security and Privacy Issues of EDI; Components of EDI Standards, ASC X12 and EDIFACT.

UNIT-II

E-Commerce and Retailing: Changing Retail Industry Dynamics, Mercantile Models from the Consumer's Perspective, Management Challenges in Online Retailing.

Intranets and Customer Asset Management: Basics of Customer Asset Management, Online Sales Force, Online Customer Service and Support, Technology and Marketing Strategy.

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UNIT-III

Intranets and Manufacturing: Integrated Logistics, Agile Manufacturing, Emerging Business Requirements, Manufacturing Information Systems, Intranet-based Manufacturing, Logistics Management. E-Commerce and Online Publishing: Why Online Publishing, Online Publishing approaches, Advertising and Online Publishing. E-Commerce and Banking: Changing Dynamics in the Banking Industry, Home Banking Implementation Approaches, Management Issues in Online Banking.

UNIT-IV

Intranets and Corporate Finance: An Introduction, Financial Systems, Financial Intranets, Software Modules in Financial Information Systems, Human Resource Management Systems, Size/Structure of Financial Software Market.

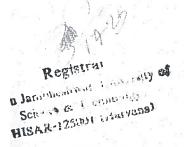
Lab: Each student is required to develop at least one application of e-commerce.

Suggested Readings:

- 1. Kalakota & Whinston, Electronic Commerce: A Manager's Guide, Pearson Education.
- 2. Greenstien & Vasarhelyi, *Electronic Commerce: Security, Risk Management and Control*, Tata McGraw Hill.
- 3. Joseph, *E-Commerce: An Indian Perspective*, Prentice Hall of India.
- 4. Turbon, et. al., Electronic Commerce: A Managerial Perspective, Pearson Education.

Important Instructions for the Course Coordinator and the Examiner:

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- The examiner is required to cover all course outcomes framed for a particular course in a balanced manner while setting nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. Wherever possible, the examiner may give a case study that will be equal to one question only. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question.No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.



MC-107 Seminar on Indian Ethos, Computer Applications in Business, Contemporary Issues in Cyber Security and Modern Business (Internal)

Time Allowed: 1 Hour

M.M.: 50

Course Objective: The objective of this course is to acquaint the students with existing issues pertaining to Indian Ethos and business. Also, inculcating in them the ability of expressing themselves to an audience with poise and self-belief.

Course Outcomes:

CO1: Students will be able to define the concept and scope of the seminar topic of their interest relating to Indian ethos or contemporary issues in business.

CO2: Students will be able to review an existing issue related to business that can help them to get ahead.

CO3: Students will be able to illustrate the possible managerial relevance and implications of the specific issue they have approached.

CO4: Students will be able to appraise the relevance of arguments prepared for the topic under consideration.

CO5: Students will be able to defend difference in opinion towards a topic.

CO6: Students will be able to develop their presentation skills.

Important Instructions for the Programme Coordinator and the Examiner:

- The list of contemporary topics will be announced in the class and at least one topic will be allotted to each student by the Programme Coordinator.
- The Evaluation Committee duly constituted by the Director/Principal will invite a seminar
 presentation from each student and the evaluation will be done on the basis of communication
 skills, contents, delivery, body-language and question-answer handling skills of the student
 on a proforma duly notified to the students in advance.

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SECOND SEMESTER

INTERNATIONAL BUSINESS

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of this course is to highlight the international environment, including relationships between business, government, economic groupings and the consumer. The course will also highlight the problems encountered and issues raised in managing overseas business.

Course Outcomes:

- CO1: Students will be able to describe the different concepts and terms used in the literature of International Business.
- CO2: Students will be able to identify the importance of tariffs, theories, modes, foreign exchange market, international organization and strategies.
- CO3: Students will be able to illustrate and interpret the macroeconomic changes that affect the international business.
- CO4: Students will be able to examine the recent practices followed across functional areas of international business.
- CO5: Students will be able to evaluate the strategic alliance, merger and acquisition, joint venture and regulation of international business.
- Students will be able to design international business strategies.

Course Contents:

UNIT-I

International Business: Importance, nature and scope; Management of international business operations - complexities and issues; IT and international business; India's involvement in International Business; Factors affecting International Business: Social and Cultural, Economic, Political, Legal and technological advancement; Globalization - Features and Components, Advantages and Disadvantages.

UNIT-II

Theories of international trade: Classical and modern theories of international trade; Modes of entry into International Business: Exporting, Licensing, Franchising, Contract Manufacturing, Trunkey projects, Foreign Direct Investments and Joint Ventures.

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UNIT-III

Multinationals (MNCs) in International Business: Issue in investment, technology transfer, pricing and regulations; International collaborations and strategic alliances. Trade barriers: tariff and non-tariff barriers, optimal tariff; Balance of payments; Exchange rate determination.

UNIT- IV

International Economic Institutions: WTO, IMF, World Bank. WTO and India; Regional Economic Integration; Theory of customs union: Partial and General Equilibrium analysis; Emerging markets: BRICS and ASEAN.

Suggested Readings:

- 1. Korth, Christopher M., International Business Environment and Management, Prentice Hall.
- 2. Ramu, S. Shiva, International Business: Governance Structure, Wheeler Publishing.
- 3. Bhalla, V.K., International Business Environment and Management, Anmol Publications.
- 4. Mithani, D.M., International Economics, Himalaya Publishing House.
- 5. Charles W.L. Hill, *International Business*, Tata MC Graw-Hill.
- 6. Czinkota, Ronkainen & Moffet, International Business, Thomson, South-Western.
- 7. Daneiels, Radebaugh and Sullivan, *International Business, Environments and Operations*, Pearson Education.
- 8. V. Sharan, International Business, concept, environment and strategy, Pearson Education

Important Instructions for the Course Coordinator and the Examiner:

- The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course by the Course Coordinator.
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FINANCIAL MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective:

The purpose of this course is to acquaint the students with the broad

framework of financial decision-making in business.

Course Outcomes:

CO1: Students will be able to outline the basic framework of financial management.

CO2: Students will be able to explain the role of financial management for financial decision making in business.

CO3: Students will be able to apply various theories of capital structure and dividend policy.

CO4: Students will be able to examine risk in capital budgeting decisions.

CO5: Students will be able to select various sources of finance with evaluation of their cost.

CO6: Students will be able to create working capital policy for organization.

Course Contents:

UNIT-I

Financial Management: meaning, objectives and scope; types of financial decisions, risk-return framework for financial decision –making; Time value of money; Capital Budgeting Decisions: nature, importance and types of investment decision; techniques of evaluating capital budgeting decisions, risk analysis in capital budgeting.

UNIT-II

Capital Structure Decisions: optimum capital structure; theories of capital structure; factors determining capital structure. Sources of long term and short term finance. Cost of Capital: concept and importance; computations of cost of various sources of finance; weighted average cost of capital.

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UNIT-III

Working Capital Management: Concept and types of working capital; operating cycle, determinants of working capital, estimation of working capital requirement; working capital policy; Management of cash, accounts receivables and inventories; financing working capital.

UNIT-IV

Dividend Policy: Dividend and its forms, theories of dividend policy and their impact on the value of a firm; types of dividend policy; Corporate Restructuring: Types of business combinations, motives of mergers and acquisitions, valuation of mergers and acquisitions.

Suggested Readings:

- 1. Van Horne, James C., Financial Management and Policy, Prentice Hall of India.
- 2. Pandey I. M., Financial Management, Vikas Publishing.
- 3. Damodaran, A, Corporate Finance: Theory and Practice, John Wiley & Sons.
- 4. Hampton, John. Financial Decision Making, Englewood Cliffs, Prentice Hall Inc.
- 5. Khan, M.Y. & Jain, P.K., Financial Management, McGraw Hill.

Important Instructions for the Course Coordinator and the Examiner:

- The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course by the Course Coordinator.
- The examiner is required to cover all course outcomes framed for a particular course in a balanced manner while setting nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. At least one question should be numerical in nature from any of the given four units. Wherever possible, the examiner may give a case study that will be equal to one question only. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.



MARKETING MANAGEMENT

Time Allowed: 3 Hours

M.M: 70

Course Objective: The purpose of this course is to develop an understanding of the underlying concepts, strategies and issues involved in the marketing of products and services.

Course Outcomes:

- CO1: Students will be able to recall and describe the fundamental concepts related to marketing.
- **CO2**: Students will be able to describe the different approaches of marketing and environment in which marketing systems operate.
- CO3: Students will be able to demonstrate an understanding of the 4Ps used by the marketers.
- **CO4**: Students will be able to examine the upcoming trends of marketing in the ever dynamic business world.
- **CO5**: Students will be able to evaluate the marketing strategies and programmes of different products in real world.
- **CO6**: Students will be able to design a marketing plan for real world market offering (product/ service).

Course Contents:

UNIT 1

Nature, scope and concept of marketing; Corporate orientations towards the marketplace; Marketing Mix; Understanding 4 A's of Marketing; Marketing Environment and Environment Scanning; Marketing Information System and Marketing Research; Understanding Consumer and Industrial Markets; Market Segmentation, Targeting and Positioning

UNIT II

Product decisions: Product concept and classification, product mix, product life cycle, new product development; Product branding, packaging and labeling decisions; Pricing decisions: Factors affecting pricing decisions, setting the price, Pricing strategies and methods.

UNIT III

Distribution channels and Logistics management: nature, types and role of intermediaries, factors influencing the channel selection, intensity of market coverage; Channel behavior and Organization:

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conflict management, vertical marketing system, horizontal marketing system, hybrid marketing system; Logistics management: objectives and major decisions areas of logistics. Promotional and communication decisions: promotion as communication, elements of promotion mix, factors influencing promotion mix, role of advertising, sales promotion, personal selling and public relations

UNIT IV

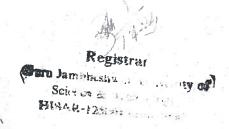
Holistic marketing: Trends in marketing practices, Internal marketing, Socially responsible marketing, Marketing implementation and control; New issues in marketing-Globalization, Consumerism, Green Marketing, Direct Marketing, Network Marketing, Event Marketing, Ethics in Marketing.

Suggested Readings:

- 1. Kotler, Philip and Keller, Kevin, Marketing Management, Prentice Hall of India
- 2. Kotler, Philip and Armstrong, G., Principles of Marketing, Prentice Hall of India
- 3. Czinkota & Kotabe, Marketing Management, Thomson Learning
- 4. Ramaswamy, V.S. & Namakumari, S., Marketing Management: Planning, Control, Macmilian
- 5. Kotler, Lane, Keller., Marketing Management, Pearson
- 6. Rajan Saxena, Marketing Management, McGraw Hill
- 7. R. Srinivas, Case Studies in Marketing- Indian Context, PHI Learning
- 8. Stanton, Fundamentals of Marketing, McGraw Hill
- 9. Sontakki, C.N. et al., Marketing Management, Kalyani Publishers
- 11. Kumar, A and Meenakshi, N, *Marketing Management*, Vikas Publishing House Pvt. Ltd.
- 12. C.K. Prahalad, The Fortune at the Bottom of Pyramid, FT Press
- 13. Matt Haig, 100 Brand Failures, Kogan Page
- 14. W. Chan Kim & Renee Mauborgne, Blue Ocean Strategies, Harvard Business Review Press

Important Instructions for the Course Coordinator and the Examiner:

- The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course by the Course Coordinator.
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MC-204

HUMAN RESOURCE MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of this course is to sensitize students to the various facets of managing people and to create an understanding of the various policies and practices of human resource management.

Course Outcomes:

CO1: Students will be able to recall the terms associated with Human Resource Management.

CO2: Students will be able to discuss various HR practices used in the business world.

CO3: Students will be able to apply various HR practices.

CO4: Students will be able to compare and contrast HR practices across companies.

CO5: Students will be able to evaluate the effectiveness of HR practices adopted in the organizations.

CO6: Students will be able to create and design the HR strategies related to coping in dynamic business environment.

Course Contents:

UNIT-I

Concepts and perspectives of Human Resource Management; Human Resources Management in a changing environment; Managerial and operative functions of HRM

UNIT-II

Recruitment, Placement and Retention Strategies: Human Resource Planning; Job Analysis; Methods of Manpower Search; Attracting, Selecting and Retaining Human Resources; Induction and Socialization.

UNIT-III

Training and Development: Manpower Training and Development; Performance Appraisal and Potential Evaluation; Career and Succession Planning; Talent Management.

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UNIT-IV

Employee Relations and Compensation Administration: Job Evaluation and Compensation Management; Incentives and Employee Benefits; Employee Welfare; Industrial Relation; Employee Separation Practices, HR Accounting and audit.

Suggested Readings:

- 1. Aswathappa, K., Human Resource and Personnel Management, Tata McGraw Hill.
- 2. Dessler, G., Human Resource Management, Pearson Education.
- 3. Venktesh, D.N. & Jyothi P., Human Resource Management, Oxford University Press.
- 4. Bohlander, G. & Snell, S., *Human Resource Management*, Cengage Learning.
- 5. Patnayak, B., Human Resource Management, PHI Learning.
- 6. Rao, V.S.P., Human Resource Management, Excel Books.
- 7. Cascio, W.Y., Managing Human Resources, Irwin-McGraw Hill.
- 8. Noe, Hollenbeck, Gerhart & Wright, *Human Resource Management*, McGraw-Hill Higher Education

Important Instructions for the Course Coordinator and the Examiner:

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MANAGEMENT AND COST ACCOUNTING

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of this course is to develop an understanding of basic management science techniques and their role in managerial decision making.

Course Outcomes:

- CO1: Students will be able to define the basic concepts in the field of Management Accounting
- **CO2**: Students will be able to recognize the contribution of Management and Cost Accounting in quality decision making.
- **CO3**: Students will be able to apply various methods and techniques of Management and cost Accounting to optimize the utilization of the resources.
- **CO4**: Students will be able to appraise the utility of different methods in finding optimal solutions of the managerial problems.
- **CO5**: Students will be able to evaluate the performance and suitability of different methods used for efficient utilization of the resources.
- **CO6**: Students will be able to formulate the budgets and interpret the results produced by the applied models.

Course Contents:

UNIT- I

Management Accounting-Nature, Functions, Objectives and Scope; Financial Accounting vs. Cost Accounting vs. Management Accounting; Role and Responsibilities of Management Accountant in a Business Organization. Cost Accounting: Meaning, cost concepts and classifications.

UNIT-II

Budgetary Control: Definition; Installation of the System; Classification of the Budgets; Behavioural aspects of Budgeting. Standard Costing and Variance Analysis: Concept; Setting of Standards; Analysis of different types of material, labour, overhead and sales variances.

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UNIT-III

Marginal Costing and Break even analysis: Cost — Volume- Profit Analysis; Different types of Break-even Points and Charts; Application of Marginal costing to managerial decision making.

UNIT-IV

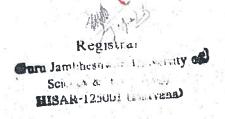
Responsibility Accounting: Concept and significance; Organisational structure and Decentralization; cost and benefits of decentralization; Responsibility Centers: Cost Centre, Revenue centre, Profit centre and Investment centre; Transfer pricing; Alternative Transfer Pricing Methods. Divisional Performance Measurement: Return on Investment; Residual Income; Economic Value Added and Return on Sales; Non – Financial Performance measures; Balanced Scorecard.

Suggested Readings:

- 1. Anthony A. Atkinson,, Robert S. Kaplan– Advanced Management Accounting Prentice Hall of India, N. Delhi.
- Charles T. Horngren, Gary L. Sundem and William O. Stratton Introduction to Management Accounting – Pearson Education, Delhi.
- 3. Bhattacharyya, Debarshi Management Accounting Pearson.
- 4. Charles T. Horngren, George Foster and Srikant M. Daller Cost Accounting: A Managerial Emphasis Prentice Hall of India, New Delhi.
- 5. M.Y.Khan, P.K.Jain Management Accounting Tata McGraw Hill.

Important Instructions for the Course Coordinator and the Examiner:

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RESEACRH METHODOLOGY

Time Allowed: 3 Hours

M.M:70

Course Objective: This course is designed to introduce the students to the fundamentals of research methods and to equip them to follow scientific methods in solving business problems.

Course Outcomes:

- **CO1**: Students will be able to relate with the basic understanding of research methodology in the changing business scenario.
- **CO2**: Students will be able to identify and classify the application of analytical techniques to face the tasks aimed at fulfilling the objective of business decision making.
- **CO3**: Students will be able to apply and demonstrate an understanding of ethical dimensions of conducting research.
- **CO4**: Students will be able to distinguish and examine the necessary experimental techniques that help in scientific decision making.
- **CO5**: Students will be able to judge and support best alternatively relating to the practices learnt through research methods.
- **CO6**: Students will be able to assemble and formulate advanced ways of taking decisions in a logical manner.

Course Contents:

UNIT-I

Introduction to Business Research. Formulation of the research problem and development of research hypotheses. Characteristics of Good Research, Ethics in Business Research. Research Process: Problem definition, Research Process, Research Design (Exploratory Research, Descriptive research and Experimental Research)

UNIT-II

Data collection, measurement and scaling: Secondary data collection methods, qualitative methods of data collection, attitude measurement and scaling, and questionnaire designing. Sampling Design: Sampling concepts, sampling techniques, sample size determination and data processing

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UNIT-III

Preliminary data analysis and interpretation: Univariate and Bivariate analysis of data, Testing of hypotheses, Analysis of variance techniques (one way and two way ANOVA), non-parametric tests (chi-square test, run test, one sample and two sample sign test, Mann- Whitney U test, Wilcoxon Signed Rank Test and Kruskal – Wallis Test).

UNIT- IV

Advance Data analysis techniques: Correlation and regression analysis, Factor Analysis, Discriminant analysis, Cluster analysis and multidimensional scaling. Report writing and presentation of results.

Suggested Readings:

- 1. Zikmund, W. G. Business Research Methods. Thomson.
- 2. Copper, D. R., Schindler P. S. & Sharma, J. K. *Business Research Methods*, McGraw Hill Education.
- 3. Burns, R. B. & Burns, R. A. Business Research Methods and Statistics using SPSS, SAGE Publications Ltd.
- 4. Bajpai, N, Business Research Methods, Pearson.
- 5. Chawla, D. & Sondhi N., Research Methodology: Concepts and Cases, Vikas Publishing House.
- 6. Panneerselvam, R, Research Methodology, Prentice Hall India.
- 7. Kothari, C.R. Research Methodology & Technique, New Age International Publishers.

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FINAL YEAR COMPULSORY PAPERS

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CORPORATE GOVERNANCE AND BUSINESS ETHICS

Time Allowed: 3 Hours

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Course Objective: The objective of this course is to sensitize the students about the various ethical and corporate governance issues in business management in the current environment.

Course Outcomes:

CO1: The students will be able to list various constituents of entrepreneurship development.

CO2: The students will be able to identify the various environmental factors affecting entrepreneurship development

CO3: The students will be able to demonstrate skills to develop business plan at individual level.

CO4: The students will be able to examine the feasibility of a business.

CO5: The students will be able to evaluate the funding alternatives available for entrepreneurs.

CO6: The students will be able to develop and implement a business plan.

Course Contents:

UNIT-I

Evolution of corporate governance; developments in India; regulatory framework of corporate governance in India; SEBI guidelines on corporate governance; reforms in the Companies Act.

UNIT-II

Corporate management vs. governance; internal constituents of the corporate governance; key managerial personnel (KMP); chairman-qualities of a chairman, powers, responsibilities and duties of a chairman; chief executive officer (CEO), role and responsibilities of the CEO.

UNIT-III

Introduction to Business Ethics: The concept, nature and growing significance of Ethics in Business, Ethical Principles in Business, Ethics in Management, Theories of Business Ethics, Ethical Issues in Business, Business Ethics in 21st Century.

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UNIT-IV

Ethics in various functional areas of Business: Ethics in Finance, Ethics in HRM, Ethics in Marketing, Ethics in Production and Operation Management.

Suggested Readings:

- 1. Mallin, Christine A., *Corporate Governance (Indian Edition)*, Oxford University Press, Delhi
- 2. Blowfield, Michael, and Alan Murray, *Corporate Responsibility*, Oxford University Press.
- 3. Francesco Perrini, Stefano, and Antonio Tencati, *Developing Corporate Social Responsibility-AEuropean Perspective*, Edward Elgar.
- 4. Sharma, J.P., *Corporate Governance, Business Ethics & CSR*, Ane Books Pvt Ltd, New Delhi.
- 5. Manuel G. Velasquez, *Business Ethics*, Pearson Prentice Hall.
- 6. Ravindranath B. & Narayana B., Business Ethics, Vrinda Publications Pvt. Ltd

Important Instructions for the Course Coordinator and the Examiner:

- The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course by the Course Coordinator.
- The examiner is required to cover all course outcomes framed for a particular course in a balanced manner while setting nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight morequestions will be set comprising two questions from each unit. Wherever possible, the examiner may give a case study that will be equal to one question only. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.

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BUSINESS LEGISLATION

Time Allowed: 3 Hours

M.M: 70

Course Objective:

The aim of the paper is to acquaint the students with the Business law and Company law in their future role as managers.

Course Outcomes:

CO1: Students will be able to define laws applicable to a business.

CO2: Students will be able to classify different laws and explain their specific purpose.

CO3: Students will be able to illustrate cases of law and interpret own manner to solve the problems of business class

CO4: Students will be able to examine company laws and compare it with previous laws before amendment of 2013

CO5: Students will be able to evaluate the existing business laws in India and analyse their importance

CO6: Students will be able to formulate guidelines according to regulatory framework of an organisation

Course Contents:

UNIT-I

The Indian Contract Act, 1872: Meaning of a Contract, Classification of Contracts, Essentials of a Valid Contract; Performance of a Contract; Discharge of a Contract; Breach of Contract; Quasi Contracts; Contract of Indemnity and Guarantee, Bailment and Pledge, Contract of Agency.

UNIT-II

The Sales of Goods Act, 1930: Meaning and essentials of a valid contract of sale, Distinction between sale and agreement to sell, Meaning of goods and their classification, Conditions and warranties, Doctrine of Caveat Emptor, Rights of an unpaid seller, Rights of buyer; Negotiable Instruments Act, 1881: Meaning and characteristics of negotiable instrument, Types of negotiable instruments and their characteristics, Holder and Holder-in-due-course, Discharge and Dishonour of negotiable instruments, Negotiation and Assignment.

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UNIT-III

The Companies Act, 2013; Meaning and Characteristics of a Company; Objects and Applications of Companies Act, 2013; Landmark provisions of new Companies Act, 2013; Classification of companies, Concept of One Person Company; Formation of a company, Memorandum and Articles of association, Prospectus, Allotment of shares and share capital, Membership in companies.

UNIT-IV

Meetings of Companies: General principles of meetings, Types of meetings; Prevention of Oppression and Mismanagement; Winding up of a Company; Consumer Protection Act: Define consumer rights, provisions regarding complaints in consumer courts, Unfair Trade Practices and Restrictive Trade Practices, Consumer Protection Council, Consumer forum.

Suggested Readings:

- 1. Gulshan, S.S. and Kapoor, G.K., *Business Law including Company Law*, New Age International Publication.
- 2. Macintyre, E., Business law, Pearson Education.
- 3. Tulsian, Business law, Tata McGraw Hill.
- 4. Majumdar A.K. and Kapoor G.K., Company Law and Practices, Taxmann Publication.
- 5. Kothari, V., Understanding Companies Act, 2013, Taxmann Publication.
- 6. Pathak, A., Contract Law in India, Oxford University Press.
- 7. Gogna, P.P.S., A Textbook of Company Law, S. Chand Publishing.
- 8. Nolakha, R.L., Company Law and Practice, Vikas Publishing House Private Limited.

Important Instructions for the Course Coordinator and the Examiner:

- The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course by the Course Coordinator.
- The examiner is required to cover all course outcomes framed for a particular course in a balanced manner while setting nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. Wherever possible, the examiner may give a case study that will be equal to one question only. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.

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COMPREHENSIVE VIVA-VOCE (External) M.M: 100

Course Objective: The objective of the course is to enable students to get a thorough understanding of what conceptual knowledge they have acquired and how they will be able to express it unambiguously in a demanding situation

Course Outcomes:

CO1: Student will be able to recall the important terms related to core and general courses of management.

CO2: Students will be able to explain their understanding about learnings from the programme.

CO3: Students will be able to demonstrate their soft and hard skills.

CO4: Students will be able to examine their own spontaneity, mannerisms and presence of mind which will help them in introspection for future such events (Job Interviews).

CO5: Students will be able to defend the knowledge about their respective field.

CO6: Students will be able to assemble their experiences gained during the programme.

Important Instructions for the Programme Coordinator and the Examiner:

- The Programme Coordinator will announce in the class in the beginning of the semester regarding the significance of the Comprehensive Viva-Voce Examination and the expectations of the Panel of Examiners from the passing out students of M.Com Programme.
- The Panel of Examiners duly constituted by the COE/Director/Principal will conduct an oral
 viva-voce examination to assess the overall programme objectives and overall course
 outcomes achieved by the students, during the programmes, on the basis of communication
 skills, course contents, analytical ability and question-answer handling skills of the student
 on a proforma duly notified to the students in advance.

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RESEARCH PROJECT (Optional in lieu of one paper)

Time Allowed: 1 Hour

M.M: 100

Course Objective: The objective of this course is to make students understand the scientific ad systematic way of solving organizational problems by making valuable choices

Course Outcomes:

- CO1: Students will be able to draw a management or business problem in a scientific manner.
- CO2: Students will be able to recognize the impediments and nuances associated with data requirements and find out the practical techniques of collecting data relevant for a research study.
- CO3: Students will be able to apply the conceptual knowledge in a practical situation and learn how to conduct a study and present it in form of a report.
- **CO4**: Student will be able to distinguish the appropriate data analysis techniques thus reporting the findings and suggestion associated with the problem at hand.
- **CO5**: Students will be able to evaluate the procedure for the scientific and systematic research in solving pragmatic problems of any organization.
- **CO6**: Student will be able to construct and formulate research problems objectively thus enabling themselves to make effective decisions.

Instructions for Research Project: The following instructions will be followed:

- 1. Research project, which is optional, should be from major or core area of specialization of the student and shall be in lieu of one paper of his/her major or core area of specialization.
- 2. Students opting for MC-402 Research Project in the 4th semester will have to register for the project in Semester III itself by submitting a synopsis along with consent of the supervisor in the Office of DDE and to the office of Director/ Principal in case of affiliated institutes by date mention in prospectus.
- 3. Research project will be accepted for submission and evaluation when at least one research paper out of the project work has been published or accepted in a research journal, or presented in any national conference/seminar. If a student fails to do so, then he/she has to give the presentation of the research project before a committee

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constituted by Director, (DDE) in case of DDE and Director/ Principal in case of affiliated institutes.

- 4. The external examiner, appointed by the COE/Director, will evaluate the Research Project and will conduct viva-voce of 70 marks in the premises of GJU and in the premises of affiliated institutes (for their respective students). However, the guide will submit the internal out of 30 marks separately.
- 5. The panel of examiners/experts will be provided by Director, DDE. The internal examiner for assisting the external examiner for evaluation and conducting viva voce will be appointed by the Director, DDE in case of DDE and Director/ Principal in case of affiliated institutes.

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IN-COMPANY-PROJECT-WORK (Optional in lieu of 4 Elective Courses)

Time Allowed: 1 Hour

M.M: 400

Course Objective: The objective of this course is to make the already placed students to understand the procedural scientific ad systematic way of solving organizational problems by making valuable choices.

Course Outcomes:

CO1: Students will be able to outline the real issues faced by the organization.

- **CO2**: Students will be able to convert their learning of research methods into a realistic research design for their topic of research.
- **CO3**: Students will be able to apply the conceptual knowledge in a practical situation and learn how to conduct a study and present it in form of a report.
- **CO4**: Students will be able to examine the impediments and nuances associated with data requirements and find out the practical techniques of collecting data relevant for a research study.
- **CO5**: Student will learn to evaluate and select the appropriate data analysis techniques thus reporting the findings and suggestion associated with the problem at hand.
- CO6: Students will be able to assemble and present the findings in a report.

Instructions for In-Company-Project-Work: The following instructions will be followed:

- If any student gets placement offer from any public or private sector organization during 4th semester and willing to join immediately, he or she may opt for In-Company-Project-Work-Report for which detailed guidelines will be notified separately, from time to time, after taking necessary approval of competent authority of the university.
- However, such In-Company-Project-Work-Report will be jointly supervised by the Academic Guide (to be nominated by the Director, DDE in case of DDE and Director/ Principal in case of affiliated institutes) and Industry Guide (to be appointed by the competent authority of the concerned Organization, who has offered appointment to our student and any pressing hard to join immediately). The Academic Guide will get two hour per week credit per students maximum up to ten credits in his or her teachingworkload.

The evaluation process will be along with detailed guidelines in this connection.

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OPEN ELECTIVES

OE - 301

COUNSELING SKILLS FOR MANAGERS

Time Allowed: 3 Hours

M.M:70

Course Objective:

To develop basic skills among students to independently handle a wide range of employee counseling and performance counseling.

Course Outcomes:

CO1: Students will be able to recall different terms used in counselling.

CO2: Students will be able to explain conceptual framework of counselling.

CO3: Students will be able to demonstrate the process of counselling.

CO4: Students will be able to differentiate between theories of counselling.

CO5: Students will be able to evaluate practical solutions to human behaviour related problems in the organization

CO6: Students will be able to develop his own model of counselling.

Course Contents:

UNIT-I

Introduction to Counseling- Emergence, Growth, Definition, Need, Goal, Role and Characteristics of Counselor and Counselee, Difference between Counseling and Psychotherapy, and General Principles of Counseling

UNIT-II

Approaches to Counseling-Psycho-analytical (Sigmund Freud Theory), Therapeutic (Alfred Adler Theory), Behaviouristic (B. F. Skinner Theory), Cognitive (Albert Ellis Model) and Humanistic Approaches (Carl Rogers Approach);

UNIT-III

Counseling Process- 5-D Model, the Phases of Counseling Process, Counseling Environment and Procedure, and the Core Conditions of Counseling; Counselor's Attitude and Skills of Counseling-Verbal and Non-verbal Communication Modalities, Listening Skills, Listening Barriers and Strategies to Overcome Listening Barriers;

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UNIT-IV

Organizational Applications of Counseling Skills- Identifying Problems and Coping Strategies with regard to Occupational Stress and Performance Management; Special Problems in Counseling-Selection of Counseling Strategies and Interventions, Changing Behavior through Counseling; Ethical and Legal Aspects of Counseling, and Current trends in Counseling.

Suggested Readings:

- 1. Cormer, L.S., and Hackney, H., *The Professional Counselor's Process Guide Helping*, Englewood Cliffs, Prentice Hall Inc.
- 2. Moursund, J., The Process of Counseling and Therapy, Englewood Cliffs, Prentice Hall Inc.
- 3. Munro, C A, Counseling: A Skills Approach, Methuen.
- 4. Reddy, Michael, Counseling at Work, British Psychological Society and Methuen.
- 5. Rao, S. Narayana, Counselling and Guidance, Tata McGraw Hill.
- 6. Gladding, S. T, Counseling- A Comprehensive Profession, Pearson.
- 7. Singh, Kavita, Counselling Skills for Managers, Prentice Hall of India.

Important Instructions for the Course Coordinator and the Examiner:

- The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course by the Course Coordinator.
- The examiner is required to cover all course outcomes framed for a particular course in a balanced manner while setting nine questions in all. The first question will be compulsory consisting of six short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. Wherever possible, the examiner may give a case study that will be equal to one question only. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.

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OE - 302

FUNDAMENTALS OF ECONOMETRICS

Time Allowed: 3 Hours

M.M:70

Course Objective:

Econometrics is concerned with quantifying economic relations, with the provision of numerical estimates of the parameters involved and testing hypotheses embodied in economic relationships. This course aims to provide a basic introduction to econometric analysis, to enable students to examine existing theories with empirical data. In doing so, it examines the difficulties inherent in confronting theory with business data in order to quantify relationships, in dealing with errors and problems in variables which can be only observed but not controlled, and the means of compensating for uncertainty in data.

Course Outcomes:

- **CO1**: Students will be able to define and memorize the various fundamental terms and concepts of econometrics.
- **CO2**: Students will be able to explain the basic assumptions, procedures and properties of various estimators.
- **CO3**: Students will be able to apply various data analysis models.
- CO4: Students will be able to compare the results obtained from various models.
- CO5: Students will be able to evaluate the results and test their statistical significance.
- **CO6**: Students will be able to develop a good quality research paper in finance and economics using the econometric methods

Course Contents:

UNIT-I

Nature, scope and methodology of econometrics; Simple Linear Regression Model: Assumptions, Procedures and properties of OLS estimator, Co-efficient of determination, Tests of significance, Maximum Likelihood Method.

UNIT-II

Multiple Linear Regression Analysis: Method of least squares, Properties of OLS estimator, Test of significance of regression co-efficient, R2 and adjusted R2. Econometric Problems: Multi co-linearity, Autocorrelation and Hetroscedasticity.

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UNIT-III

Dummy variables-Nature and uses, Regression on dummy variables, Regression on Dummy Dependent Variable-The basic idea of the Linear Probability Model (LPM), Probit and Logit Models. Dynamic Econometric Models: Koyck distributed lag model, the adaptive expectation model, and the partial adjustment model.

UNIT-IV

Simultaneous Equation Models: Structural, Reduced and final forms, Identification-Order and rank conditions, Methods for estimating the simultaneous models-Basic idea of Indirect Least Square (ILS) and Two Stage Least Square (2SLS) methods. Seemingly Unrelated Regressions (SUR), SUR versus OLS

Suggested Readings:

- 1. Greene, William H., Econometric Analysis, Macmillan.
- 2. Johnston, J., Econometric Methods, McGraw -Hill.
- 3. Gujrati, Damodor N., Basic Econometrics, McGraw-Hill.
- 4. Stock J. H. and Watson M.W. *Introduction to Econometrics*, Addison-Wesley Series in Economics
- 5. Koutsoyiannnis, A., Theory of Econometrics, Harper & Row.
- 6. Kmenta, J., Theory of Econometrics, Macmilan.
- 7. Maddala, G.S., *Introduction to Econometrics*, Macmillan.

Important Instructions for the Course Coordinator and the Examiner:

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Science & Tempolog EEPA-3356 (Marsing **OE - 303**

PERSONAL FINANCE

Time Allowed: 3 Hours

M.M:70

Course Objective:

The main objective of this course is to make students learn the various aspects of personal finance.

Course Outcomes:

CO1: Students will be able to describe the different concepts of personal finance.

CO2: Students will able to explain the risk profiling.

CO3: Students will be able to demonstrate the skills in selecting financial products.

CO4: Students will be able to examine the different financial products according to their risk profile.

CO5: Students will be able to evaluate the different financial products on the basis of their cost and benefits.

CO6: Students will be able to design the different financial products keeping in mind macro and micro variables.

Course Contents:

UNIT-I

Personal Finance: Meaning and importance. Financial planning: meaning, process and role of financial planner. Risk profiling: client data analysis, life cycle, wealth cycle. Asset allocation: Strategic, Tactical, Fixed and Flexible.

UNIT-II

Risk Management: Meaning, process and importance. Distinguish between risk assessment, risk management and risk avoidance. Assessment of requirement of Health Insurance, Life Insurance and General Insurance. Choice of products for risk coverage

UNIT-III

Investment Management: meaning and importance. Investment avenues: equity, debt, gold, real estate, mutual funds, exchange traded funds. Portfolio management: meaning, construction, evaluation and revision. Loan management: meaning, types, importance and assessment, personal, car loan, home Loan etc.

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UNIT-IV

Tax planning: basics terms of income tax, advance tax, tax deduction at source, deductions under section 80C, 80 CCC, 80 D and 80 G. Taxation of investment products. Retirement planning, Management of nomination, power of attorney and will

Suggested Readings:

- 1. Kapoor Jack R, *Personal Finance*, The McGraw-Hill companies.
- 2. Huang. Stanley S C and Randall, Maury R., *Investment Analysis and Management*. Allyn and Bacon.
- 3. Gaungully, Ashok, *Insurance Management*, New Age Publishers, New Delhi.
- 4. Ahuja, G K & Gupta Ravi, *Systematic Approach to Income Tax*, Allahabad, Bharat Law House.
- 5. Pandian, Security Analysis and Portfolio Management, Vikas Publishing House, New Delhi.

Important Instructions for the Course Coordinator and the Examiner:

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OE-304

APPLICATIONS OF MARKETING

Time Allowed: 3 Hours

M.M:70

Course Objective:

The main objective of this course is to acquaint the students with the various aspects of applications of the marketing principles in corporate world.

Course Outcomes:

CO1: Students will be able to outline with the various application areas of marketing.

CO2: Students will be able to explain the key concepts related to the application areas of marketing.

CO3: Students will be able to use the marketing concepts in interpreting marketing strategies.

CO4: Students will be able to appraise a marketing environment from different perspective.

CO5: Students will be able to judge the overall marketing mix strategy of an organization.

CO6: Students will be able to develop a basic marketing strategy for varied areas of marketing.

Course Contents:

UNIT-I

Consumer Behavior: Introduction to consumer behavior, Understanding the role of internal and external influences on consumer behavior, Consumer Decision Making Process.

Sales and Distribution: Introduction to Sales, Its Importance, objectives and functions; Sales forecasting & designing sales territories; Distribution Channels: purpose & types of distribution channels

UNIT-II

Retailing: Introduction to Retailing; Organized Vs Unorganized retailing, Types of Retail formats. Internet marketing: Relevance of Internet Marketing, Web analytics, SEO, Social Media Marketing.

UNIT-III

Marketing of Services: Introduction to Services, Characteristics of Services compared to Goods, Service Mix, Gap model of Service Quality, Service classification. Marketing Communication: Elements of Marketing Communication, Relevance of IMC, Designing a Marketing Communication Programme

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UNIT-IV

Industrial Marketing: Meaning and Concept of Industrial Marketing, Types of Industrial Customers, Classification of Industrial Products, Industrial Buying Process. Rural Marketing: Introduction to rural markets in India, Classification of products and services in rural marketing, Analysis of rural demand, Marketing Practices in rural market.

Suggested Readings:

- 1. Schiffman, L., & Wisenblit, J., Consumer Behaviour, Prentice Hall PTR.
- 2. Still, Richard R., Edward W. Cundiff, and Norman A.P. Govoni: Sales Management, Prentice Hall, New Delhi.
- 3. Christopher Lovelock, Jochen Wirtz and Jayanta Chatterjee, Services Marketing, Pearson Education
- 4. Bowersox and Others, Physical Distribution Management, Tata McGraw Hill, New Delhi.
- 5. Levy Micheal, Weitz Barton A. And Pandit Ajay, Retailing Management, Tata McGraw Hill, New Delhi
- 6. Havalder, Krishna K., Industrial Marketing, TMH, New Delhi.
- 7. George E. Belch, Michael A. Belch and Keyoor, Purani, Advertising and Promotion, McGraw Hill
- 8. Charlesworth, A., Internet Marketing: A Practical Approach, BH Publications.
- 9. Acharya S. S. and Agarwal N. L., Agricultural Marketing in India, Oxford & IBH Publishing Co.

Important Instructions for the Course Coordinator and the Examiner:

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EXPORT IMPORT PROCEDURES AND DOCUMENTATION OE-305

Time Allowed: 3 Hours

M.M:70

Course Objective: The aim of the course is to acquaint the students with the export-import

procedures and documentation

Course Outcomes:

CO1: Students will be able to describe the legal framework and procedure governing international trade.

CO2: Students will be able to explain the incorporation of various terms in drafting of an export contract and understand the importance of risk management.

CO3: Students will be able to apply the concepts learned in terms of export order, delivery and international trade pricing to actual transactions.

CO4: Students will be able to appraise the role and importance of export-import documentation and procedure framework according to commodities and countries.

CO5: Students will be able to evaluate the nuances of import and export clearance procedures.

CO6 Students will be able to develop the skills to export-import various commodities in different counties and avail benefits of various export incentives and promotional schemes given by government.

Course Contents:

UNIT I

Export Preliminaries, Documentation in international trade: Aligned Documentation System (ADS); Commercial documents, Regulatory documents, Documents related to goods, shipment, payment, inspection and legal regulated documents, Official machinery for consultation.

UNIT II

Export contract: Distinction between domestic sales contract and export sales contract, Major laws for export contracts, Elements in export contracts, Dispute settlement, Role of ICC; INCOTERMS, Containerization.

UNIT III

Export order processing; shipping and custom clearance of export and import cargo; central excise clearance; Role of clearing and forwarding agents. Types of risks in international trade, Cargo Insurance and claim Procedures

UNIT IV

Methods of payment in international trade; documentary collection of export bills, UCPDC guideline, Instruments of payments, Pre-shipment and post-shipment finance, Negotiation of documents with banks, Main Provisions of FEMA; Procedure and documentation for availing export incentives.

Suggested Readings:

- 1. C. Rama Gopal, Export Import Procedures, Documentation and Logistics, New Age International Publishers, New Delhi.
- 2. M. D. Jitendra, Export Procedures and Documentation, Rajat Publications.
- 3. Pervin Wadia, Export Markets and Foreign Trade Management, Manishka Publications.
- 4. Paras Ram, Export: What, Where and How, Anupam, Publications.
- 5. Government of India, Handbook of Import Export Procedures.
- 6. Nabhi's Exporters Manual and Documentation.
- 7. Nabhi's New Import-Export Policy Procedures

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OE-306

CORPORATE GOVERNANCE AND BUSINESS ETHICS

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of this course is to sensitize the students about the various ethical and corporate governance issues in business management in the current environment.

Course Outcomes:

CO1: Students will be able to describe the different concepts of corporate governance.

CO2: Students will able to explain the ethical dimension of doing business.

CO3: Students will be able to demonstrate the skills in implementing governance related matters

CO4: Students will be able to examine the different issues pertaining to corporate social responsibility of business.

CO5: Students will be able to evaluate the regulatory aspects of corporate governance.

CO6: Students will be able to design practical ways of inculcating ethics in various functions and operations of business.

Course Contents:

UNIT-I

Evolution of corporate governance; developments in India; regulatory framework of corporate governance in India; SEBI guidelines on corporate governance; reforms in the Companies Act

UNIT-II

Corporate management vs. governance; internal constituents of the corporate governance; key managerial personnel (KMP); chairman- qualities of a chairman, powers, responsibilities and duties of a chairman; chief executive officer (CEO), role and responsibilities of the CEO.

UNIT-III

Introduction to Business Ethics: The concept, nature and growing significance of Ethics in Business, Ethical Principles in Business, Ethics in Management, Theories of Business Ethics, Ethical Issues in Business, Business Ethics in 21st Century.

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UNIT-IV

Ethics in various functional areas of Business: Ethics in Finance, Ethics in HRM, Ethics in Marketing, Ethics in Production and Operation Management.

Suggested Readings:

- 1. Mallin, Christine A., *Corporate Governance (Indian Edition)*, Oxford University Press, Delhi.
- 2. Blowfield, Michael, and Alan Murray, *Corporate Responsibility*, Oxford University Press.
- 3. Francesco Perrini, Stefano, and Antonio Tencati, *Developing Corporate Social Responsibility-A European Perspective*, Edward Elgar.
- 4. Sharma, J.P., *Corporate Governance, Business Ethics & CSR*, Ane Books Pvt Ltd, New Delhi.
- 5. Manuel G. Velasquez, Business Ethics, Pearson Prentice Hall.
- 6. Ravindranath B. & Narayana B., Business Ethics, Vrinda Publications Pvt. Ltd

Important Instructions for the Course Coordinator and the Examiner:

- The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course by the Course Coordinator.
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OE-307

INDIAN ETHOS AND VALUES

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Time Allowed: 3Hours

M.M:70

Course Objectives: The course aims to help student appreciate the significance of Indian Ethos and Values along with its relevance and implications to managerial decision making.

Course Outcomes:

CO1: Students will be able to recall the values related to Indian ethos.

CO2: Students will able to identify how Indian ethos is associated with business organizations.

CO3: Students will be able to demonstrate the skills required to develop a holistic approach towards management of organizations

CO4: Students will be able to appraise the importance of Indian education system and philosophy behind it.

CO5: Students will be able to evaluate the human values thus generating a value-driven management.

CO6: Students will be able to develop ways to solve real-life problems related to human behaviour based on his understanding on Indian ethos and values.

Course Contents:

UNIT I

Indian Ethos: Meaning of Bharat, relevance of Indian ethos, role of Indian ethos in managerial practices; Sources of Indian Ethos in Management: Vedas, Ramayana, Bible, Quran, Kautilya's Arthashastra, Ethics v/s Ethos; Indian Management v/s Western Management

UNIT II

Modern Approach towards Indian Ethos: Introduction, Indian Management Thoughts, Holistic Approach to Management; Sadhana—In Management context, The Tatwas in Indian Ethos; Management Thoughts and Practice: Harmony with Environment, Dharma, Swadharma and Detachment, Holistic approach to Personality, Managerial Purusharth Karma yoga & enlightened leadership

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UNIT III

Learning and Education System in India: Learning concept, Gurukul System of Learning, The beginning of modern education system, Achievements of the Indian education system; Law of Karma, Law of creation, law of humility, law of growth, law of responsibility

UNIT IV

Human Values: Meaning, significance, Vedic literature and values, formation of values, Aristotle's view on value inculcation, Objectives of value-based system, Interrelation of Values and Skills, Values and the workplace, Value-based Human response management, Need of value-based holistic management, Value-driven management, Indian culture and wisdom, The ethical and spiritual values and Methods of heart and mind purification

Suggested Readings:

- 1. Agarwal, T. & Chandorkar, N., *Indian Ethos in Management*, Himalaya Publishing House
- 2. Nandgopal, R. & Sankar, R.N.A., *Indian Ethos & Values in Management,* Tata McGraw Hill Education
- 3. Ganjre, A.K., Pawar, P. & Laxman R., *Indian Ethos Modern Management Mantra*, Himalaya Publishing House
- 4. Bansal, I., *Management Concept in ancient India psycho-philosophic thought and their significance in present day organization*, Jaipur, Narayan Publication
- 5. Sharma. S., *Management in New Age: Western Windows Eastern Doors Management*, New Age International

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OE-308

COMPUTER APPLICATIONS IN BUSINESS AND CYBER SECURITY

Time Allowed: 3Hours

MM: 70

Course Objective: The Objective of this course is to familiarize the student with basic concepts of information technology, its application in business and make them conscious of cyber security laws and practice.

Course Outcomes:

- CO1: Students will be able to relate with various software related to office application.
- CO2: Students will be able to explain and identify electronic data transfer takes place and will be able to handle data base management systems.
- CO3: Students will be able to use and operate telecommunication networks which are most commonly used in organizations.
- CO4: Students will be able to question and test the various operations of the internet.
- **CO5**: Students will be able to evaluate and examine the perspectives of cyber security hence bearing ethical responsibility.
- **CO6**: Students will be able to develop solutions for real-life problems based on computer applications and cyber security.

Course Contents:

UNIT-I

Software Packages for Office Applications- Word Processing using MS Word, Spreadsheets using MS Excel, Presentations using MS PowerPoint, Creating web pages and web applications with HTML, Business functionalities using Tally software.

UNIT-II

Electronic Data Processing: An introduction; Data processing cycle; data hierarchy; data file structure; file organization, Data Base Management Systems

UNIT-III

Telecommunication and Networks: Types of Telecommunication Networks, Telecommunications Media, Network Topologies, Network Architectures-The OSI Model. The Internet, Intranet and

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Extranets: Operation of the Internet, Services provided by Internet, World Wide Web, Intranet and Extranets.

UNIT-IV

Cyber Security: Perspective of Cyber security, Application security, Information security, Network security, End-user education, Cryptography / Encryption, Security issues in wireless, Security Threats and Vulnerabilities, Ethical Responsibility - Business Ethics, Technology Ethics; Cyber Crime and Privacy Issues. Brief introduction to Information Technology Act, 2000, IT (Amendment) Act

Suggested Readings:

- 1. Ram, B., Computer Fundamentals, New AgePublications.
- 2. Rajaraman, V., Introduction to Information Technology, PHI.
- 3. Shrivastava., Fundamental of Computer & Information Systems, Wiley Dreamtech.
- 4. Chwan-Hwa (John) Wu, J. David Irwin, *Introduction to Computer Networks and Cybersecurity*, CRCPress.
- 5. Aparna Viswanathan, Cyber Law, LexisNexisButterworths

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OE-309

DISASTER MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective: The basic purpose of this course is to understand the framework for evaluating capital expenditure proposals, their planning, finance, appraisal and management in the review of the projects undertaken.

Course Outcomes:

CO1: Students will be able to explain the importance, scope and functions of Disaster Management.

CO2: Students will be able to illustrate the Life Cycle of any given disaster management project.

CO3: Students will be able to sketch estimation of Guidelines for Time, Costs and Resources required for Disaster Management by applying different methods.

CO4: Students will be able to examine the Scheduling Resources and Reducing Disaster Duration.

CO5: Students will be able to evaluate Role and Responsibilities of the Disaster Manager, Planning, Organizing, Controlling, Skills of the Disaster Manager.

CO6: Students will be able to formulate strategies for risk reduction in Disaster.

Course Contents:

UNIT-I

Introduction to Disasters: Concepts, and definitions (Disaster, Hazard, Vulnerability, Resilience, Risks) Disasters: Classification, Causes, Impacts (including social, economic, political, environmental, health, psychosocial, etc.), Differential impacts- in terms of caste, class, gender, age, location, disability, Global trends in disasters, urban disasters, pandemics, complex emergencies, Climate change

UNIT-II

Approaches to Disaster Risk reduction: Disaster cycle its analysis, Phases, Culture of safety, prevention, mitigation and preparedness community based DRR, Structural- nonstructural measures, roles and responsibilities of- community, Panchayati Raj Institutions/Urban Local Bodies (PRIs/ULBs), states, Centre, and other stake-holders.

UNIT-III

Inter-relationship between Disasters and Development: Factors affecting Vulnerabilities, differential impacts, impact of Development projects such as dams, embankments, changes in Land-use etc. Climate Change Adaptation. Relevance of indigenous knowledge, appropriate technology and local resources

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Disaster Risk Management in India Hazard and Vulnerability profile of India, Components of Disaster Relief: Water, Food, Sanitation, Shelter, Health, Waste Management Institutional arrangements (Mitigation, Response and Preparedness, DM Act and Policy, Other related policies, plans, programmes and legislation), Contemporary issues in Disaster Management including COVID-19.

Suggested Readings:

- 1. Alexander David, Introduction in 'Confronting Catastrophe', Oxford University Press
- 2. Andharia J. Vulnerability in Disaster Discourse, JTCDM, Tata Institute of Social Sciences Working Papers
- 3. Blaikie, P, Cannon T, Davis I, Wisner B. At Risk Natural Hazards, Peoples' Vulnerability and Disasters, Routledge.
- 4. Coppola P Damon, Introduction to International Disaster Management,
- 5. Carter, Nick Disaster Management: A Disaster Manager's Handbook. Asian Development Bank, Manila Philippines.
- 6. Cuny, F. Development and Disasters, Oxford University Press.
- 7. Document on World Summit on Sustainable Development.

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FINANCE AREA

THIRD SEMESTER

CONTEMPORARY ISSUES IN ACCOUNTING

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to analyze the major issues in accounting in

coherent and critical manner.

Course Outcomes:

CO1: Students will be able to describe the contemporary issues in accounting.

CO2: Students will be able to summarise the models of Inflation Accounting

CO3: Students will be able to interpret the international dimensions of accounting

CO4: Students will be able to compare new concepts of accounting

CO5: Students will be able to apprise and evaluate real-world cases in corporate social accounting and valuation.

CO6: Students will be able to formulate financial reports.

Course Contents:

UNIT-I

Human Resource Accounting: Meaning and definition of HRA, Importance and objectives of HRA, Limitations of HRA, Need of HRA for managers, Models of HRA. Social Accounting: Meaning and Definition of Social Accounting, Theories of Social accounting, Need and importance of Social Accounting, Current position of Social Accounting in India, Role of corporate Social Accounting.

UNIT-II

Inflation Accounting: Meaning and definition of Inflation Accounting, Various models of Inflation Accounting, Methods of Inflation Accounting. Brand Accounting: Overview of Brand Accounting, Importance and role of Brand accounting in corporate, various issues and challenges associated with Brand Accounting.

UNIT-III

International Dimensions of accounting and control: Multinational enterprise, Internationalization of capital markets, Internationalization of accounting profession. Operational and conceptual issue. Foreign currency translations, methods and practices.

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New Dimension of Accounting: Meaning of GAAP, Introduction to IFRS, Overview of IFRS, Comparative position of IFRS and Indian GAAP, Government influences on financial reporting. Introduction to forensic accounting, environmental accounting.

Suggested Readings:

- 1. M. David Haddock, John Price, & Michael Farina, College Accounting: A Contemporary Approach, Tata McGraw Hill.
- 2. Steven M. Bragg, *Interpretation and Application of Generally Accepted Accounting Principles 2011*, John Wiley.
- 3. Ken Marshall, Steve Arnold, IFRS Conversion: Issues, Implications, Insights, John Wiley.
- 4. Clifton, R., Brands and Branding, John Wiley.
- 5. Teng, Financial Accounting, Asian Book Pvt. Limited

Important Instructions for the Course Coordinator and the Examiner:

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FINANCIAL RESTRUCTURING AND VALUATION

Time Allowed: 3 Hours

M.M:70

Course Objective: The course aims at providing an in-depth understanding of all aspects affecting and arising out of Corporate & Financial Restructuring and Valuation, stressing upon and dealing exhaustively with key concepts, legislative aspects and procedures.

Course Outcomes:

CO1: Students will be able to define the concepts and terminologies of financial restructuring.

CO2: Students will be able to summarise the theories underlying corporate restructuring and business valuation.

CO3: Students will be able to interpret the regulatory environment governing financial restructuring and valuation.

CO4: Students will be able to compare different valuation models.

CO5: Students will be able to apprise and evaluate real-world cases in corporate restructuring and valuation.

CO6: Students will be able to formulate a plan to successfully liquidate or reorganize a business.

Course Contents:

UNIT 1

Corporate Restructuring: Meaning, Need, Scope and Modes of Restructuring; Historical Background; Emerging Trends; Planning, Formulation and Execution of Various Corporate Restructuring Strategies - Mergers, Acquisitions, Takeovers, Disinvestments and Strategic Alliances, Demerger.

UNIT II

Financial Restructuring: concept & need for Financial Restructuring, Reduction of Capital; Reorganization of Share Capital; Buy-Back of Shares - Concept and Necessity; Procedure for Buy-Back of Shares by Listed and Unlisted Companies, Legal, Economic, Taxation and Financial aspects of Mergers and Amalgamation

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Valuation: Meaning, Objective & Scope of Valuation; Principles of Valuation; Preliminary Work relating to Valuation; Valuation Standards and Valuation Analysis; Valuation Techniques; Historical Earnings Valuation; Asset Based Valuation; Market Based Valuation.

UNIT IV

Regulatory Aspects of Valuation: Legal & Regulatory aspects related to Valuation such as SEBI Regulations/ RBI Regulations; Income Tax Implications; Valuations for Different Strategies-Merger & Acquisition, Demerger, Slump Sale, Liquidation and Corporate Insolvency, Internal & External Restructuring, Valuation of Intangibles, Valuation of Securities

Suggested Readings:

- 1. Corporate Restructuring Valuation and Insolvency by The Institute of Company Secretaries of India
- 2. Ray, Mergers and Acquisition Strategy, Valuation and Integration, PHI
- 3. Ramaiya, A., Guide to Companies Act, LexisNexis Butterworths, Wadhwa, Nagpur
- 4. Sampath, K., R., Mergers / Amalgamations, Takeovers, Joint Ventures, LLPs and Corporate Restructure, Snow White Publications
- 5. Handbook on Mergers Amalgamations and takeovers by The Institute of Company Secretaries of India

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FINANCIAL STATEMENT ANALYSIS

Time Allowed: 3 Hours

M.M:70

Course Objective:

This course is designed to prepare the students to interpret and analyze the financial Statement for effective financial decisions.

Course Outcomes:

CO1: Students will be able to define the terminologies related to financial statement analysis.

CO2: Students will be able to explain key elements of making financial statement.

CO3: Students will be able to apply techniques used in financial analysis.

CO4: Students will be able to appraise financing and investing activities of corporate houses.

CO5: Students will be able to evaluate credit problems using quantitative techniques.

CO6: Students will be able to formulate policies for Accounting and Financial Analysis.

Course Contents:

UNIT-I

Overview of financial statement analysis: Types and components Business analysis, basis of analysis, financial statement analysis preview, relevance to business decisions and steps in analyzing financial statements; Financial reporting and analysis: Reporting environment, Form of the financial statements, IFRS framework for the preparation and presentation of financial statements.

UNIT-II

Accounting analysis: Analysis of financing activities; Analysis of investing activities; Analyzing investing activities and inter-corporate investments; Analysis of operating activities and income: understanding method of revenue and expenses.

UNIT-III

Financial analysis: Analysis of cash flow statements; Return on invested capital and profitability analysis; Prospective analysis: Projection process, projecting financial statements, application of prospective analysis in the residual income, valuation model and trends in value drivers; Short term liquidity analysis: working capital analysis, operating activity analysis.

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Credit analysis: Liquidity and working capital, and capital structure and solvency; Equity analysis and valuation: Earning persistence, earning based equity valuation and earning power and forecasting for valuation; Building blocks of financial statement analysis

Suggested Readings:

- 1. Wild, John J, Subramanyam, K.R. and Halsey Robert E., *Financial Statement Analysis*, Nineth edition, McGraw-Hill, New Delhi.
- 2. Bernstein, Leopold A., Financial Statement Analysis, McGraw-Hill International.
- 3. Foster, George. Financial Statement Analysis, Prentice Hall.
- 4. Penman, Stephen H. Financial Statement Analysis and Security Valuation, McGraw-Hill International
- 5. Stickney, Clyde P. and Brown, Paul R. *Financial Reporting and Statement Analysis*, The Dryden Press.
- 6. Hampton, John. J., Financial Decision Making. Prentice Hall of India Pvt. Ltd., New Delhi.
- 7. Levy. H. and Sarnat H., *Capital Investment and Financial Decision*, Englewood Cliffs, Prentice Hall Inc.
- 8. Van Horne, James C. *Financial Management and Policy*. Englewood Cliffs, Prentice hall of India.

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SECURITY ANALYSIS

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to impart knowledge to students regarding the theory and practice of Security Analysis.

Course Outcomes:

CO1: Students will be able to describe the environment and working of capital markets.

CO2: Students will be able to discuss and differentiate different financial assets and their holding motives

CO3: Students will be able to demonstrate the processes of calculating risk and return of financial

CO4: Students will be able to able to appraise the processes of doing fundamental and technical analysis

CO5: Students will be able to judge the trends in the stock markets.

CO6: Students will be able to develop a reasoned argument for security selection and investment choices

Course Contents:

UNIT-I

The Investment Environment - Meaning and objective of investment, investment vs. gambling and speculation, investment alternatives, investment process, concept of return and risk.

UNIT-II

Security Analysis – Fundamental analysis: economic analysis, industry analysis and company analysis. Technical analysis: assumptions Dow theory, chart patterns, moving averages and market indicators. Efficient market theory: weak form hypothesis, semi-strong form hypothesis and strong form hypothesis.

UNIT-III

Fixed Income Securities - Bond fundamentals: bond characteristics, pricing and yields Valuation of fixed income and variable income securities

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Indian Security Market - New issue market, secondary market: SEBI, NSE, BSE and market indices. Recent trends in Indian and international stock markets, exposure to leading business web portals like www.moneycontrol.com, www.bloomberg.com etc.

Suggested Readings:

- 1. Reilly, Frank K. And Brown, Keith C., *Investment Analysis and Portfolio Management*, South-Western Cengage Learning India Pvt. Ltd.
- 2. Bodie, Z., Kane, A. and Marcus, A., Investments, McGraw-Hill.
- 3. Fischer, Donald E. and Jordan, Ronald J., Security Analysis and Portfolio Management, Prentice Hall of India.
- 4. Sharpe, William F. et al, Investment. New Delhi, Prentice Hall of India.
- 5. Fuller, Russell J. and Farrell, James L., *Modern Investment and Security Analysis*, New York, McGraw Hill.
- 6. Alexander, Gorden J. and Bailey, Jeffery V., *Investment Analysis and Portfolio Management*, Dryden Press, Thomson Learning
- 7. Machiraju, H. R., Indian Financial System, Vikas Publishing House.

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FOREIGN EXCHANGE MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective:

To acquaint the students with the mechanism of the foreign exchange markets, measurement of the foreign exchange exposure, and hedging against exposure risk. Upon successful completion of this paper, Students should expect to learn the nature and purposes of foreign exchange management under the new financial order evolving higher degree of vulnerability in a highly borderless financial world.

Course Outcomes:

- CO1: Students will be able to state appropriate formats and technologies to financial communication.
- **CO2:** Students will be able to identify market conventions on exchange rate quotation and correctly calculate those quotations.
- **CO3:** Students will be able to apply information within the global financial environment of foreign exchange to solve problems and make informed decisions.
- **CO4:** Students will be able to appraise forward exchange rates given spot exchanges rates and rationale behind it.
- CO5: Students will be able to evaluate the problems of dealing in foreign currency and the advantages and disadvantages of overseas funding.
- **CO6:** Students will be able to develop an integrative understanding of the foreign exchange market and the relationships between interest rates, spot and forward rates and expected inflation rates.

Course Contents:

UNIT-I

Foreign Exchange Market: Function and Structure of the FOREX markets, Foreign exchange market participants, Types of transactions and Settlements Dates, Exchange rate quotations, Nominal, Real and Effective exchange rates, and Determination of Exchange rates in Spot markets. Exchange rates determinations in Forward markets. Exchange rate behavior-Cross Rates Arbitrage profit in foreign exchange markets, Swift Mechanism.

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UNIT-II

International Parity Relationships & Forecasting Foreign Exchange rate: Measuring exchange rate movements-Exchange rate equilibrium — Factors effecting foreign exchange rate- Forecasting foreign exchange rates. Interest Rate Parity, Purchasing Power Parity & International Fisher effects.

UNIT-III

Foreign Exchange exposure:-Management of Transaction exposure (Case Study: Airbus Dollar Exposure); Management of Translation exposure- Management of Economic exposure (Case study: Exporter's/Importer's Position: Hedge or Hedge Not).

UNIT-IV

Foreign exchange risk Management: Hedging against foreign exchange exposure – Forward Market-Futures Market- Options Market- Currency Swaps-Interest Rate Swap. Cross currency Swaps-Hedging through currency of invoicing- Hedging through mixed currency invoicing.

Suggested Readings:

- 1. Eun and Resnick, International Financial Management, Tata McGraw Hill.
- 2. Eiteman, Moffett and Stonehill, Multinational Business Finance, Pearson.
- 3. Jeff Madura, International Corporate Finance, Cengage Learning.
- 4. Alan C. Shapiro, Multinational Financial Management, Wiley India
- 5. Apte, P. G International Financial Management, TMH.
- 6. Maurice Levi International Finance, Routledge.
- 7. Paul Einzip, A Textbook on Foreign Exchange
- 8. Paul Roth, Mastering Foreign Exchange and Money Markets, Pitman.

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RISK MANAGEMENT AND INSURANCE

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to impart knowledge to students regarding the

techniques of measurement and control of risk.

Course Outcomes

CO1: Students will be able to define the basic concepts of Insurance and Risk management

CO2: Students will be able to understand and comprehend the regulatory environment of Insurance

CO3: Students will be able to apply the knowledge in making suitable decisions

CO4: Students will be able to appraise the role of Insurance in Risk Management.

CO5: Students will be able to evaluate different forms of insurance that are prevailing in practice

CO6: Students will be able to develop products for life, general and health insurance.

Course Contents:

UNIT-I

Introduction to risk management: The Concept of Risk, Risk v/s Uncertainty, Classification of risk; Major Personal Risks and Commercial Risks; objectives of Risk Management, steps in the Risk Management Process; Techniques of managing Risk

UNIT-II

Insurance and Risk: meaning and characteristics of Insurance, Insurable risk characteristics, Adverse selection, Types of Insurance, Benefits and costs of Insurance to Society, Enterprise Risk Management, Insurance Market Dynamics, Financial Analysis in Risk management Decision Making

UNIT-III

The evolution and growth of Life Insurance, various types of insurance; Principles of insurance; Insurance Contracts, Insurance Company Operations, leading Insurance companies in India, Role of IRDA

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Life Insurance: Types of Life Insurance, Life Insurance Contractual Provisions, Buying Life Insurance, The Liability Risk, Auto Insurance, Home Insurance, Health Insurance, Group and Pension Insurance Policies

Suggested Readings:

- 1. Emmett J. Vaughan, *Risk Management*, John Wiley & Sons, Inc.
- 2. Rejda, G.E.& McNamara, J.M., Principle of Risk Management &Insurance, Parson
- 3. A. Suryanarayana, *Risk Management Models: A Primer*, ICFAI Reader.
- 4. Marshall Johon F. & Bansal, V. K., Financial Engineering, PHI Learning.
- 5. Watsham Terry J., Futures and Options in Risk Management, Thomson Learning
- 6. Karam Pal, Bodla & Garg, M.C., *Insurance Management*, Deep & deep Publications, New Delhi

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FOURTH SEMESTER

MCF -411 MANAGEMENT OF BANKS AND FINANCIAL INSTITUTIONS

Time Allowed: 3Hours M.M:70

Course Objective: The objective of this course is to analyze the major concepts, theories and

principles of banking and financial institutions in logical and critical manner.

Course Outcomes:

CO1: Students will be able to recall the evolution and current state of Indian Financial System and banking Industry

CO2: Students will be able to describe the working and management of Commercial Banks in India

CO3: Students will be able to interpret the significance of being most tightly regulated industries in the world

CO4: Students will be able to appraise the regulatory structure within which the banking system operates

CO5: Students will be able to critically analyze the pivotal role of banking in a financial system

CO6: Students will be able to construct and analyze different challenges faced by banks and financial institutions

Course Contents:

UNIT 1

Indian Financial System: Introduction, Evolution and growth of banking system in India, Bank Market structure in India, Banking sector reforms (The Narsimham Committee and The Raghu Ram Rajan Committee), Recent Innovations and development in Indian Banking.

UNIT II

Management of Commercial Banks in India: Functions of Bank, Sources of Bank Funds, Credit Management-Cardinal principles of sound bank lending, Formulating loan policy, Factors influencing loan policy; Investment Management-Nature and significance of investment management in commercial banks, Fundamental principles of security investment by commercial bank.

UNIT III

Capital Adequacy in Indian Banks: Functions of capital funds in commercial banks, Capital adequacy —Basel III norms on capital adequacy in Indian commercial banks; Concept of ALM: Objectives, Functions, Process, Measurement and Management of Risks, Concept of NPAs.

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UNIT IV

Management of Financial Institutions: Financial Institutions, their role in economic development, challenges and opportunities; NABARD, IFCI, SIDBI, NHB— Introduction and their operational policies; Role of RBI; Insurance Industry in India, Mutual Funds, Micro Finance Institutions (MFIs); Current issues and future challenges in Management of Banks and financial Institutions.

Suggested Readings:

- 1. Srivastava, R.M. & Nigam, D., *Management of Indian Financial Institutions*, Himalaya Publishing House.
- 2. Khan, M. Y. Indian Financial System, Tata McGraw Hill.
- 3. Suresh, P. & Paul, J., Management of Banking and Financial Services, Pearson
- 4. Singh, S.P.N., Management of Banking and Financial Institutions, Centrum Press
- 5. Principles & Practices of Banking by Indian Institute of Banking and Finance, Macmillan Publications

Important Instructions for the Course Coordinator and the Examiner:

- The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course by the Course Coordinator.
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MCF-412

FINANCIAL MARKETS AND SERVICES

Time Allowed: 3 Hours

M.M:70

Course Objective:

The main objective of this course is to help students to learn the various concepts of financial markets and services and their role in the overall financial system.

Course Outcomes:

CO1: Students will be able to describe financial market operations.

CO2: Students will be able to explain the various concepts related to financial markets and services.

CO3: Students will be able to solve various investment related issues facing the investors.

CO4: Students will be able to examine how the overall financial system works and various aspects associated with it

CO5: Students will be able to evaluate the best sources feasible for fulfilling their financial requirements related to the business

CO6: Students will be able to formulate different financial plans for the organisations with the help of different services provided by the financial markets

Course Contents:

UNIT-I

Financial markets- Structure and Participants; Capital market; Money market; Primary and Secondary Market Operations; Listing of securities; functions of stock exchanges; Role of SEBI; Introduction to derivative and commodity markets.

UNIT-II

Financial Services: Meaning, Nature and Types; Factoring: Meaning, Characteristics and Types of Factoring arrangements, Factoring in India, Factoring vs. Forfeiting; Credit Rating: Meaning and Types, Benefits of Credit rating to investors and companies; Objectives and Functions of Credit Rating Agencies.

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UNIT-III

Credit Cards: Concept and Significance; Types of credit Cards, Credit Card business in India. Book Building: Concept and Mechanism of Book Building; Significance and Benefits of Book Building; Bought Out Deals: Meaning and Nature; Mechanisms of Bought out Deals.

UNIT-IV

Securitisation: Concept, Mode, Mechanism and Beneficiaries of Securitisation, Securitisation in India; Venture Capital: Meaning and Modes of Financing; Role and Functions of Merchant Bankers. Leasing: Concept, Classification, Accounting, Legal and Tax Aspects of Leasing

Suggested Readings:

- 1. Clifford, G., Financial Markets, Institutions and Financial Services, PHI.
- 2. Khan, M. Y., Management of Financial Services, McGraw-Hill.
- 3. Gordan, E and K. Natrajan, *Emerging Scenario of Financial Services*. Himalaya Publishing House
- 4. Meidan, Arthur Brennet, M., Option Pricing: Theory & Applications, Lexington Books.
- 5. Kim, Suk and Kim, Seung, *Global Corporate Finance. Text and Cases*, Miami Florida, Kotb
- 6. Khan, M., Y., Financial Institutions and Markets, McGraw Hill
- 7. Bhole, L.M., Financial Institutions and Markets, McGraw Hill

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BUSINESS TAXATION

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of the course is to acquaint the participant with the implications of tax structure and corporate tax planning in operational as well as strategic terms.

Course Outcomes:

- CO1: Students will be able to outline the meaning and scope of tax policy and basic concepts of tax in India
- **CO2:** Students will be able to explain constitutional provisions pertaining to taxes in India
- **CO3:** Students will be able to illustrate the computation of tax liability
- CO4: Students will be able to appraise the rationale, benefits and costs of various tax incentives offered by government
- CO5: Students will be able to evaluate tax implications while taking business decisions
- CO6: Students will be able to formulate tax planning for individuals or business houses

Course Contents:

UNIT-I

Basic Concepts of Income Tax; Computation of Income under Different Heads of Income, Clubbing of income, Set off and Carry forward of Losses, Deductions and Exemptions.

UNIT-II

Meaning and Scope of Tax Planning, Difference between Tax planning Tax Evasion and Tax Avoidance, Residential status and Tax incidence of a Company; Computation of Corporate Tax Liability.

UNIT-III

Tax Planning with reference to Location of Undertaking, Tax Planning regarding Dividends Policy, Tax Planning relating to specific managerial decisions, Tax planning for employees

UNIT-IV

Major defects in the structure of indirect taxes prior to GST: rationale for GST; features of GST law in India, structure of GST (SGST, CGST, UTGST and IGST); rates of GST, models of GST, GST Council

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Suggested Reading:

- 1. Singhania, V., K. & Singhania, Monica, Students' Guide to Income Tax, Taxmann
- 2. Singhania, V., K. & Singhania, Kapil, Direct Taxes Law and practice, Taxmann
- 3. Singhania, V., K. & Singhania, Monica, Corporate tax Planning and Business Tax Procedures, Taxmann
- 4. Narwal, K.,P., & Anushuya, GST in India, DBH Publishers and Distributers
- 5. Ahuja, G.& Gupta, R., Simplified Approach to Corporate Tax Planning and Management, Bharat Law House private limited
- 6. Srinivas, E. A., Handbook of Corporate Tax Planning, Tata McGraw Hill.
- 7. Iyengar, A. & C. Sampat, Law of Income Tax, Bharat House.

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PORTFOLIO MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to impart knowledge to students regarding the theory and practice of portfolio management.

Course Outcomes:

CO1: Students will be able to define the concepts and terminologies of portfolio management.

CO2: Students will be able to summarise the theories underlying portfolio management.

CO3: Students will be able to apply the concepts of portfolio management and solve relevant numerical problems.

CO4: Students will be able to examine and evaluate portfolio performance.

CO5: Students will be able to apprise and judge trends in international financial markets.

CO6: Students will be able to construct investment portfolio and defend their choices.

Course Contents:

UNIT-I

Introduction to Portfolio Management: Meaning, need, and objective of portfolio management, the process of portfolio management, determination of risk & return of a portfolio, risk analysis tools

UNIT-II

Theories of portfolio selection and management- Markowitz portfolio theory: optimal portfolio, meaning and construction of efficient frontier, investors' utility; CAPM: capital asset pricing model, risk-free and risky lending and borrowing, market portfolio; capital market theory: CML, SML and Sharpe Single Index Model; Arbitrage Pricing Theory (APT).

UNIT-III

Bond portfolio management strategies -bond characteristics, fundamentals of bond valuation, bond & equity portfolio management strategies: passive portfolio strategies & active portfolio strategies.

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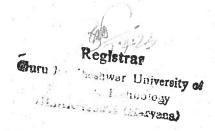
Portfolio evaluation and revision – portfolio performance evaluation, risk adjusted performance measures; meaning, need and constraints of portfolio revision; formula plans: constant-dollar-value plan, constant ratio plan, variable ratio plan, process and intricacies of trading system in Indian stock market.

Suggested Readings:

- 1. Reilly, Frank K. And Brown, Keith C., *Investment Analysis and Portfolio Management*, South-Western Cengage Learning India Pvt. Ltd.
- 2. Fischer, Donald E. and Jordan, Ronald J., Security Analysis and Portfolio Management, Prentice Hall of India.
- 3. Sharpe, William F. et al, Investment. New Delhi, Prentice Hall of India.
- 4. Fuller, Russell J. and Farrell, James L., *Modern Investment and Security Analysis*, New York, McGraw Hill.
- 5. Alexander, Gorden J. and Bailey, Jeffery V., *Investment Analysis and Portfolio Management*, Dryden Press, Thomson Learning
- 6. Machiraju, H. R., Indian Financial System, Vikas Publishing House.

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FINANCIAL AND COMMODITY DERIVATIVES

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to give an in depth knowledge of the functioning of derivative securities market.

Course Outcomes:

CO1: Students will be able to describe the concepts and terminologies of financial and commodity derivatives.

CO2: Students will be able to explain the models used for pricing/valuation of derivatives

CO3: Students will be able to interpret innovations in financial and commodity markets

CO4: Students will be able to appraise investment opportunities in derivative market.

CO5: Students will be able to evaluate derivative pricing and hedging practices.

CO6: Students will be able to formulate basic risk management and trading strategies using derivatives.

Course Contents:

UNIT-I

Financial Derivatives – Meaning, types, uses and factors driving the growth of derivatives. Forward Contracts v/s Future Contracts. Types of Traders: Futures Markets and the use of Futures for Hedging.

UNIT-II

Future Payoffs: long futures and short futures. Pricing stock futures: with dividend and without dividend. Application of futures: Hedging, speculation and arbitrage. Currency Futures: Meaning, uses and contract details. Interest Rate Futures: Meaning, uses and contract details.

UNIT-III

Stock Options: meaning, types and uses. General factors affecting stock option price Black-Scholes Option Model and Binomial model. Option based investment strategies-bullish, bearish, straddle, strangle and butterfly, Swaps: meaning& uses, currency swap & interest rate swap.



Introduction to Commodity Derivatives: meaning, uses, Cereals, metals and energy products. History and Contemporary issues of Indian derivative market

Suggested Readings:

- 1. Brennet, M., Option Pricing: Theory & Applications. Toronto, Lexington Books.
- 2. Cox, John C and Rubinstein, Mark Options Markets. Englewood Cliffs, Prentice Hall Inc.
- 3. Huang. Stanley S C and Randall, Maury R., *Investment Analysis and Management*, Allyn and Bacon.
- 4. Hull. John C. Options, Futures and Other Derivative Securities, PHI.
- 5. Sharpe. William F. et al., *Investment*, Prentice Hall of India.

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PUBLIC FINANCE

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to analyze the major concepts, theories of public finance in logical and critical manner.

Course Outcomes:

CO1: Students will be able to relate public expenditure and revenue concepts.

CO2: Students will be able to identify the issues involved in public debt management in India

CO3: Students will be able to demonstrate integrative understanding of auditing system in India

CO4: Students will be able to compare the possible burden, benefits and distribution of various types of taxes and their impact on general welfare

CO5: Students will be able to able to appraise and critically evaluate the issues in Government finances

CO6: Students will be able to develop analytical skills and judgement in major areas of public finance reforms

Course Contents:

UNIT-I

Nature and Scope of Public Finance;. Principle of maximum social advantage Public revenue-General considerations: Division of tax burden and incidence of taxes, Classification and choice of taxes and effect of taxation. Indian taxation system and its key issues

UNIT-II

Public Debt and some issues in debt management; Public expenditure- General considerations and effect of public expenditure; Public budget- budget classification, Performance and Programme budgeting system(PPBS) and Zero base budgeting; Balance budget and fiscal policy. Comments on recent central Government budget

UNIT-III

Introduction to Indian Public Financial System – Historical background, Financial Federalism under Constitution; Indian Federal finance- Recommendations of latest finance commission of India; Public debt in India-Central and states Government debt.



Government of India Finances: expenditure trends expenditure policy, control of public expenditure in India, Suggestions for reforming the budget, trends in receipts. Railway finances, public sector in India and its Financial Autonomy and Accountability of Public sector, states finances and local finances. Investment policy of public sector in India: Financial, economic and social appraisal. Financial control; Legislative and Executive Accounting and Auditing System in India, Role of Comptroller and Auditor General (CAG), Contemporary Issues in Government Finances.

Suggested Readings:

- 1. Musgrave, R.A., and P. B. Musgrave, *Public Finance in Theory and Practice*, Tata McGraw Hill.
- 2. Harvey S. Rosen, Ted Gayer, Public Finance, McGraw Hill
- 3. Tayagi, B.P., Public Finance, S. Chand & Co.
- 4. Lekhi, R.K., Public Finance, Kalyani Publishers.
- 5. Mithani, D.M., Public Finance and International Trade, Himalaya Publications.

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MARKETING AREA

THIRD SEMESTER

MCM-321

MARKETING OF SERVICES

Time Allowed: 3 Hours

M.M:70

Course Objective: The aim of this paper is to explicate the cutting edge service concepts to the students through bridging the gaps between theory and real world by incorporating practical management applications.

Course Outcomes:

CO1: Students will be able to relate service and technology.

CO2: Students will be able to classify services and recognize service challenges.

CO3: Students will be able to use marketing research as a tool to understand customers and to deploy employees for service delivery.

CO4: Students will be able to examine the reasons of service failure and implementing strategies to recover it.

CO5: Students will be able to evaluate delivery and performance of services.

CO6: Students will be able to construct service design and standards.

Course Contents:

UNIT I

Introduction to Services: Service and Technology, Goods versus Services, Service Marketing Mix, Gap model of Services, important service industries-Hospitality and Tourism, Transportation, Telecom, Banking and Insurance, Education and Entertainment, Healthcare. Service classification and challenges in Service Business.

UNIT II

Focus on the Customer: Consumer behaviour in Services, Customer Expectation of Services, and Customer perception of services Elements in an effective services marketing research programme, Building customer relationship, Relationship development strategies, Reasons of Service failure, Service recovery and strategies.

UNIT III

Aligning Service design and standards: Challenges of Services Innovation and design, new service development process Service Blueprinting, Customer-defined service standards and its types, Physical evidence and types of services cape, Strategic roles of services cape

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UNIT IV

Delivering and performing services: Employees role in service delivery, Customers role in-service delivery, Delivering services through intermediaries and electronic channels, Strategies for matching capacity and demand, Key service communication challenges, Approaches to pricing services, Financial and Economic impact of services.

Suggested Readings:

- 1. Zeithaml, V., Bitner, M.J., Gremler, D.D.&Pandit, A., Service Marketing. McGraw Hill.
- 2. Lovelock, C., Wirtz, J.&Chatterjee, J., Services Marketing. Pearson Education.
- 3. Srinivasan, Service marketing: Indian Context, PHI
- 4. Swartz, T., Iqcobucci, D., *Handbook of Service Marketing and Management*, Sage Publication

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MCM-322

CONSUMER BEHAVIOUR

Time Allowed: 3 Hours

M.M:70

Course Objective:

The basic objective of this course is to develop an understanding about the consumer decision making process and its applications in marketing function of firms.

Course Outcomes:

CO1: Students will be able to define various terms associated with the field of consumer behaviour.

- **CO2**: Students will be able to explain different components of consumer behaviour.
- **CO3**: Students will be able to interpret the impact of consumer behaviour while framing marketing strategies.
- **CO4**: Students will be able to distinguish the individual and group aspects of consumer behaviour for devising marketing strategy.
- **CO5**: Students will be able to select the most suitable consumer behaviour for understanding consumer psyche.
- **CO6:** Students will be able to design a comprehensive marketing strategy based on consumer behaviour.

Course Contents:

UNIT - I

Consumer Behaviour- Introduction to consumer behaviour; Its Roots in Various Disciplines, Interrelationship between Consumer Behaviour and Marketing Strategy, Consumer Research; Process, Research Methods & Tools, Types and its Relevance.

UNIT - II

Consumer as an Individual -Consumer Needs and Motivation; Goals, Dynamics of Motivation, Measurement of Motives, Personality and Consumer Behaviour; Nature, Theories of Personality and Self Concept, Consumer Perception and Information Processing; Dynamics of Perception, Consumer Imagery, and Perceived Risk, Learning & Consumer Involvement; Meaning, Behavioural & Cognitive Learning Theories and application to marketing, Consumer Attitude; Meaning, Attitude Formation & Change, Relationship in Behaviour & Attitude Formation, and Structural Models.

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UNIT - III

Group Dynamics and Consumer Behaviour Reference Groups; Meaning, Types, Affects, Relevance and Applications, The Family; Functions, Decision Making and Family Life Cycle, Social Class; Meaning, Types of Status, Lifestyle Profiles and Mobility in Social Classes, Measurements, Influence of Culture; Characteristics, Measurements & Core Values of Culture, Sub Cultural Aspects on Consumer' Mind Set; Meaning, Types & Understanding of Multiple Sub cultural Membership Interaction & Influence.

UNIT-IV

Consumer Decision Making Process- Personal Influence and the Opinion Leadership; Meaning and Dynamics of Opinion Leadership Process, Measurement of Opinion Leadership, Diffusion of Innovations; Process of Diffusion & Adoption, Profile of Consumer Innovator, Consumer Decision Making; Meaning of Decision, Levels of Decision Making. Consumer Behaviour Models, Current trends and ethical issues in Consumer Behavioural Studies.

Suggested Readings:

- 1. Assael, H., Consumer Behaviour and Marketing Action, Asian Books Private Limited, New Delhi.
- 2. Engel, J. F., Kollat, D.T., Roger D. Blackwell, R.D. 'Consumer Behaviour, Holt McDougal.
- 3. Hawkins, D., Mothersbaugh D., Consumer Behavior: Building Marketing Strategy, McGraw-Hill Education.
- 4. Schiffman, L. and Kanuk, L., Consumer Behavior, Prentice Hall.
- 5. Schiffman, L., & Wisenblit, J., Consumer Behaviour, Prentice Hall PTR.
- 6. Loudon, Consumer Behavior: Concepts and Applications, Tata McGraw-Hill Education Private Limited, Noida, Uttar Pradesh, India.

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MCM-323 INTEGRATED MARKETING COMMUNICATION STRATEGY

Time Allowed: 3 Hours

M.M:70

Course Objective: The aim of this paper is to acquaint the students with the concepts, techniques and developing skills regarding application of effective advertising programmes.

Course Outcomes:

- **CO1**: Students will be able to define various terms associated with the field of integrated marketing communication.
- **CO2**: Students will be able to explain the components of integrated marketing communication.
- **CO3**: Students will be able to interpret the impact of business environmental factors on the marketing communication strategy.
- **CO4**: Students will be able to distinguish the utility of various promotional tools.
- CO5: Students will be able to evaluate the effectiveness of marketing communication strategy.
- CO6: Students will be able to develop a marketing communication strategy.

Course Contents:

UNIT-I

The growth of advertising and promotion, the evolution of IMC and a contemporary perspective, Promotional Mix: a tool for IMC, Analysis of the communication process, Role of IMC in the marketing process, Developing Marketing Planning Programme, Role of Advertising and Promotion.

UNIT-II

Participants in the IMC process: The clients Role, Role of advertising agencies, Types of Ad agencies, Agency compensation, evaluating agencies; An Overview of Consumer Behavior: Consumer decision-making process, Environmental influences on consumer behavior, Alternate approaches to consumer behavior

UNIT-III

Analyzing the communication process: A basic model of Communication, cognitive response approach, elaboration likelihood model; Source message and channel factors; Objectives and budgeting for IMC programmes: Establishing objectives and budgeting for promotional programmes; DAGMAR: An approach to setting objectives, problems in setting objectives, Establishing and allocating the promotional budget; Developing the IMC programme: Creative Strategy: Planning & development, Implementation and evaluation.



Media planning and Strategy: Developing the media plan, Establishing media objectives, Developing and implementing media strategies, Evaluation and follow-up; Evaluation of media: television & Radio, Evaluation of Print Media: Support Media, Direct Marketing, Direct Selling, The internet and interactive media, sales promotion, public relation, publicity and corporate advertising. Measure the effectiveness of the promotional programme. International advertising and promotion, regulation of advertising and promotion, evaluating the social, ethical and economic Aspects of advertising and promotion

Suggested Readings:

- 1. Blakeman, R. Integrated Marketing Communication: Creative Strategy from Idea to Implementation, Rowman & Littlefield
- 2. Dutta, K., Integrated Marketing Communication, Oxford Higher Education
- 3. Belch, G. E., Belch, M. A. and Purani, K., Advertising and Promotion, McGraw Hill Education.
- 4. Batra, R., Myers, J. G. and Aaker, A.D. Advertising: Management, Pearson Education
- 5. Percy, L. and Elliot, R., *Strategic Advertising Management*, Oxford publishing
- 6. Sissors, J.Z. and Baron, R.B. Advertising Media Planning, McGraw Hill.
- 7. Jethwaney, J. and Jain, S., Advertising Management, Oxford publishing

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SALES AND DISTRIBUTION MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective: To provide an understanding of the concepts, attitudes, techniques and approaches required for effective decision making in the areas of Sales and

Distribution Management.

Course Outcomes:

CO1: Students will be able to define the concepts of sales management and distribution.

CO2: Students will be able to explain the role, functions, and methods of selling and distribution process.

CO3: Students will be able to apply the concepts to solve practical sales and distribution problems.

CO4: Students will be able to compare different methods used for sales and distribution related decisions.

CO5: Students will be able to appraise their sales management skills.

CO6: Students will be able to develop the strategies that help in taking strategic decisions.

Course Contents:

UNIT-I

Sales Management: Role of Sales Management in Marketing, Nature and Responsibilities of Sales Management, Modern Roles and Required Skills for Sales Managers. Theories of Selling. Sales Planning: Importance, approaches and process of sales planning; Sales forecasting; Sales budgeting. Sales Organization: Purpose, principles and process of setting up a sales organization; Sales organizational structures; Field sales organization; Determining size of sales force.

UNIT-II

Territory Management: Need, procedure for setting up sales territories; Time management; Routing. Sales Quotas: Purpose, types of quotas, administration of sales quotas. Managing the Sales-force: Recruitment, selection, training, compensation, motivating and leading the sales-force; Sales meetings and contests

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UNIT-III

Control Process: Analysis of sales, costs and profitability; Management of sales expenses; Evaluating sales force performance; Ethical issues in sales management.

UNIT-IV

Distribution Channels: Role of Distribution Channels, Number of Channels, Factors Affecting Choice of Distribution Channel, Channel Behavior and Organization, Channel Design Decision; Channel Management Decisions; Distribution Intensity; Partnering Channel Relationship.

Suggested Readings:

- 1. Still, Cundiff, Govoni, Sales Management: Decisions, Strategies & Case,- Prentice Hall, India.
- 2. Anderson R, *Professional Sales Management*, Englewood Cliff, New Jersey, Prentice Hall, India
- 3. Spiro, Rosann L., Gregory A. Rich, and William J. Stanton, *Management of a Sales Force*, McGraw-Hill Irwin, Boston.
- 4. Dalrymple, Douglas J., and William L., Sales Management: Concepts and Cases, New York, NY: John Wiley and Sons.
- 5. Panda, T. K., Sahadev, S., Sales And Distribution Management, Oxford Publishing, India
- 6. Hughes, G. David, Daryl McKee, Charles H. Singler, Sales Management: A Career Path Approach, Cincinnati, OH: South-Western College Publishing
- 7. Peppers, D. & Rogers, M., 'The short way to long-term relationships'. Sales and Marketing Management

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LOGISTICS MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of this course is to enable students understand the importance and dynamics of a firm's physical distribution functions and management of its supply chain.

Course Outcomes:

CO1: Students will be able to recall the terms used in logistics.

CO2: Students will be able to describe the importance of logistics.

CO3: Students will be able to apply the concepts of logistics for marketing.

CO4: Students will be able to appraise the components related to logistics.

CO5: Students will be able to evaluate the dynamics of physical distribution functions.

CO6: Students will be able to create an efficient logistics system for an organization.

Course Contents:

UNIT-I

Introduction to Logistics Management: Nature, Role, Scope and Evolution of Logistics Management, Operational Objectives of Logistics; Concept of Supply Chain Management; Marketing and it's Interface with Logistics; Total Cost Analysis and Trade off; Concept of Customer Service: Components of Customer Service, Customer Service Cost, Customer Service Measurement; Major Components/Decisions of Logistics Management; Integrated Logistics System; Distribution related issues and Challenges for Logistics.

UNIT-II

Transportation Decisions: Role of Transportation in Logistics, Elements of Transportation Cost, Selection of Transportation Mode, Multi-Decision Areas of Transportation: Containerization, Transportation Network and Tariffs; Third Party Logistics; Inventory Management: Role of Inventory Management in Logistics, Elements of Inventory Costs, Decision Areas of Inventory Management, Techniques of Inventory Control, Economic Order Quantity Under Conditions of Certainty and Uncertainty.

UNIT-III

Modern Concept of Warehousing: Role and Types of Warehouses; Warehouse Functions, Planning Warehousing Operations, Site Selection, Warehouse Layout, Operational Mechanism and Automation in Warehousing; Information and Order Processing: Role of Information System

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in Logistics Management; Order Processing: Nature and Concept, Functions of Order Processing; Elements of Ordering cost.

UNIT-IV

Packaging: Role of Packaging in Logistics, New Emerging Packaging Alternatives, Packaging operations, Factors affecting packaging decisions; Material Handling: Objectives of Material Handling, Material Handling considerations; Equipments for Material Handling, Factors affecting Material Handling decisions. Distribution Control and Performance Evaluation: Integration of Logistics with Distribution System, IT-enabled Distribution and Logistics Management, Distribution Control and Performance Measurement.

Suggested Readings:

- 1. Bowersox and Others: Physical Distribution Management, Tata McGraw Hill, New Delhi.
- 2. Stern, Louis W. Adel, I.E.L. Ansary, Annee T. Coughlan: *Marketing Channels*, Prentice Hall, New Delhi.
- 3. Ballu, Ronald H, Business Logistics Management, Englewood Cliffs, New York, Prentice Hall Inc.
- 4. Martin, Christopher and Gordon Wills: Marketing Logistics and Distribution Management
- 5. Khanna, K.K. *Physical Distribution Management*, Himalaya Publishing House, New Delhi.
- 6. Lambert, D. et. al., Strategic Logistics Management, Tata McGraw Hill, New Delhi.
- 7. Chopra, S and Meindl, P, Supply Chain Management- Strategy, Planning and Operation, Pearson Education.
- 8. Simchi-Levi, D et al., Designing and Managing the Supply Chain, The McGraw Hill Companies
- 9. Sharma, S, Supply Chain Management-Concepts, Practices and Implementation, Oxford University Press.

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PRODUCT AND BRAND MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to impart in depth knowledge to the students regarding the theory and practices of brand management.

Course Outcomes:

CO1: Students will be able to define basic branding concepts and outline major branding issues.

CO2: Students will be able to identify branding challenges and opportunities.

CO3: Students will be able to apply marketing programme to build brand equity.

CO4: Students will be able to examine and implement different branding programmes.

CO5: Students will be able to evaluate brand performance and evaluating brand extension opportunities.

CO6: Students will be able to design and implement different branding strategies.

Course Contents:

UNIT-I

Branding terminology, basic branding concepts- brand awareness, brand personality, brand image, brand identity, brand loyalty, brand equity, major branding decisions: selecting a brand name, brand extension decision, family versus individual brand names, multiple branding, private versus national branding, importance of branding

UNIT II

Branding challenges and opportunities, concept of brand equity, sources and benefits of brand equity, customer based Brand equity, designing marketing programme to built brand equity, measurement of brand equity, Strategic brand management process, concept of Brand positioning and repositioning, Identifying and establishing brand positioning and values.

UNIT III

Planning and implementing brand marketing programmes, designing marketing programmes, measuring and interpreting brand performance, Legal aspects of Branding, Copyright, Trademarks and IPR, designing and implementing branding strategies; Brand building and communication, E-Branding, handling brand name changes.

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UNIT IV

New products and brand extension, evaluating brand extension opportunities, reinforcing brands, revitalising brands, managing brands over geographic boundaries and market segments, rationale for going international, global marketing programmes- advantage and disadvantage, standardisation versus customisation, global brand strategy. Branding in rural marketing, branding in specific sectors: retail, industrial, service brands

Suggested Readings:

- 1. Kavin lane Keller, Strategic Brand Management, Pearson Education.
- 2. David A Aaker, Managing Brand Equity, New York, Free Press.
- 3. Don Cowley, Understanding brands, Kogan page
- 4. J.N. Kapferer, Strategic Brand Management, Free Press.

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FOURTH SEMESTER

RETAIL MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of this course is to familiarize the students with the basic concepts of retailing and understanding retail business so as to make them ready for future roles as managers

Course Outcomes:

- **CO1**: Students will be able to define the different terms used in the retail sector.
- **CO2**: Students will be able to identify the current retail structure in India.
- **CO3**: Students will be able to demonstrate the insights of retailing and related key activities.
- **CO4**: Students will be able to appraise the importance of retailing and its role in the success of modern businesses.
- **CO5**: Students will be able to evaluate the current marketing scenario and identify retail opportunities thereof.
- **CO6:** Students will be able to develop a retail plan for opening up a retail store.

Course Contents:

UNIT-I

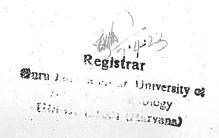
Introduction to Retail- Evolution of Retail, Organised Vs Unorganised retailing, Retail Mix, theories of retail development, Types of Retailers; Careers in Retailing; Understanding Consumers.

UNIT-II

Retail Locations- Planned and Unplanned, Retail Site Location- Site Characteristics, Trade Area Characteristics, Location and Site Evaluation; Store Layout and Design; Space Management; Visual Merchandising; Atmospherics

UNIT-III

Managing Merchandise - Merchandise Planning, Process, Forecasting Sales, Developing Assortment Plans, National Brands and Private Labels; Retail Pricing- Setting Retail Prices, Price Adjustments, Pricing Strategies; Retail Communication Mix.



UNIT-IV

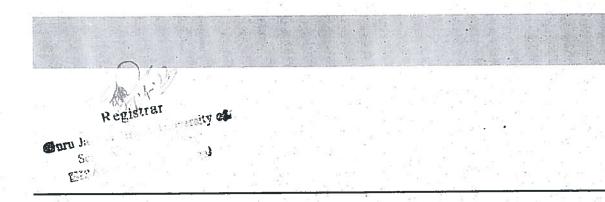
Information and Supply Chain Management- Information Flows, Logistics, Distribution Centre. Contemporary issues in Retail-Significance of retail as an industry, Retail scenario at International and National Level, Technology in Retailing, Multi-channel Retailing, E-Retailing: Future of eretailing, Challenges for traditional retail and e-retail, FDI in Retail.

Suggested Readings:

- 1. Pradhan, S., Retailing Management Textand Cases, Mc Graw Hill Education, New Delhi
- 2. Levy, Micheal, Weitz, Barton, A. and Pandit, Ajay, *Retailing Management,* Tata McGraw Hill, New Delhi
- 3. Berman, Barry and Evans, Joel, R., *Retail Management*, A Strategic Approach; PHI/Pearson Education; New Delhi
- 4. Newman, Andrew, J. & Cullen, Peter, *Retailing: Environment & Operations*, Vikas Publishing House; New Delhi.
- 5. Gilber, David, Retail Marketing Management, Pearson Education, New Delhi.

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RURAL MARKETING

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to analyze the major concepts of rural and agricultural marketing in coherent and critical manner.

Course Outcomes:

- **CO1**: Students will be able to recite problems in rural marketing and changing focus of corporate towards rural market.
- CO2: Students will be able to recognize need of agricultural marketing in economic development and constraints of agricultural marketing.
- **CO3**: Students will be able to solve the problems of cooperative sector in India.
- **CO4**: Students will be able to appraise role of supply chain in agricultural marketing.
- **CO5**: Students will be able to evaluate role of government and financial institution in growth of rural and agricultural marketing.
- CO6: Students will be able to develop model for rural and agricultural marketing.

Course Contents:

UNIT-I

Features, Significance, Scope and Limitations of rural markets in India; Environmental factors affecting rural markets; Changing focus of corporate towards rural markets; Demographic and psychographic profile of rural consumer; Classification of products and services in Rural marketing, rural demand and problems in rural marketing,

UNIT-II

Agriculture Marketing –Definition, Scope, Concept and Objectives; Differences in Agricultural and Consumer Marketing; Constraints in Agricultural marketing; Role of Agriculture in Economic Development of India; Role of Government in Agricultural Development; Agribusiness; Export potential for farm products -Supporting Services.

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UNIT-III

Cooperative Marketing –Concept, History, Functions – Reasons for slow progress of cooperative sector, Advantages & Limitations of Organized retailing in Agri Inputs and Outputs, Trends in Agri Marketing. Supply Chain Management in Agri Business i.e. Cold Chains, Organized procurement & warehousing.

UNIT-IV

Marketing Mix for rural products; Role of financial institutions in rural marketing. Rural marketing strategies: Different models and case studies of corporate vis Tata Kisan Seva Kendra, Commodity market functioning etc. Innovative distribution Channels like ITC E-Choupal, Godrej Adhar, HUL Shakti.

Suggested Readings:

- 1. Acharya S. S. and Agarwal N. L., *Agricultural Marketing in India*, Oxford & IBH Publishing Co.
- 2. Dr. Subhash Bhave, Agribusiness Management in India Text & Cases.
- 3. Arora, R C., Integrated Rural Development, Scharnd.
- 4. Desao. Vassal. Rural Development, Himalaya Publishing House
- 5. Mishar, S. N., Politics and Society in Rural India, Inter India.
- 6. Porter, Michael, E. Competitive Strategy, Free Press.
- 7. T.P Gopalaswamy, Rural marketing-Environment, problems and strategies

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INDUSTRIAL MARKETING

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of this course is to lay a foundation for an understanding of the complex dimensions of Industrial Marketing.

Course Outcomes:

- CO1: Students will be able to describe terms, concepts, and nature of industrial marketing.
- CO2: Students will be able to compare industrial marketing with consumer marketing.
- **CO3**: Students will be able to interpret the role of each stakeholder in industrial marketing value chain.
- CO4: Students will be able to appraise competitor marketing strategy.
- CO5: Students will be able to evaluate marketing mix strategy for industrial products.
- CO6: Students will be able to develop an effective marketing strategy for industrial products.

Course Contents:

UNIT-I

Industrial Marketing: concept, nature and scope of industrial marketing; Difference between industrial and consumer marketing; Economics of industrial demand; Understanding industrial markets and environment: Types of industrial customers, Classification of industrial products, Marketing implications for different customers and different product types, Purchase practices of industrial customers, Environmental analysis in industrial marketing.

UNIT-II

Organisational Buying and Buyer behavior: Buyer motives, Phases in industrial buying decision process, Types of buying situations, Interpersonal Dynamics of industrial buying behavior, Buyer-Seller relationship, Models of industrial buying behavior, Industrial Marketing Research process; Industrial market segmentation, target marketing and positioning.

UNIT-III

Product Strategy: Meaning and Concept of an industrial product, Determinants of product mix, Industrial Product Life Cycle and strategies, New product development process; Marketing strategies for product related services and pure services; Industrial pricing decisions: Factors influencing pricing decisions, Pricing strategies, Pricing methods.



UNIT-IV

Industrial distribution channels and marketing logistics: Distinctive nature of industrial distribution channels, Factors affecting the nature of industrial channels, Role of intermediaries, Types of industrial intermediaries, Channel design decisions, Role of logistics and customer services in industrial marketing, Major components/Major decision areas of logistics, Total cost approach; Industrial marketing communication: Role of personal selling and direct marketing in industrial marketing, Personal selling process, Importance of advertising, and sales promotion in industrial marketing, Sales force management, Strategic planning, Implementing and Controlling in industrial marketing.

Suggested Readings:

- 1. Reeder, Robert R. *Industrial Marketing: Analysis, Planning and Control.* Englewood Cliffs. New Jersey, Prentice Hall Inc.
- 2. Havalder, Krishna K., Industrial Marketing, TMH, New Delhi
- 3. Havalder, Krishna K: Text and Cases, TMH, New Delhi
- 4. Brennan, R, Canning, L & McDowell, R, Business to Business Marketing, Sage Publications Ltd.
- 5. Hill, Richard, Industrial Marketing, Homewood Illionis, Richard D. Irwin.
- 6. Webster, F.E. Industrial Marketing Strategy, New York, John Wiley.
- 7. Ghosh, P.K, Industrial Marketing, Oxford University Press.
- 8. Mukerjee, Industrial marketing, Excel Books India

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SOCIAL MARKETING

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of the course is to familiarize the students to design social campaigns with a view to bring change in the behavior of the public in the fields of public health and environment.

Course Outcomes:

CO1: Students will be able to describe the meaning and nature of social marketing.

CO2: Students will be able to recognize the range of stakeholders involved in social marketing programmes and their role as target markets

CO3: Students will be able to interpret the marketing mix strategies in social marketing.

CO4: Students will be able to appraise social marketing problems and suggest ways of solving.

CO5: Students will be able to evaluate the social marketing plan.

CO6: Students will be able to develop a social marketing plan for achieving behavioral change.

Course Contents:

UNIT-I

Social Marketing: Concept, Scope, Comparison with Commercial Marketing, Approaches to influence public Behavior; Social Marketing Planning Process; Elements of Campaign.

UNIT-II

Social Marketing Environment: Campaign Focus and purpose, Mapping the Internal and External Environments; Establishing Target Audiences: Target Marketing.

UNIT-III

Setting Campaign Objectives and Goals: Behavior Objective, Knowledge Objective, Belief Objective; Social Marketing Strategies: Product in social marketing, Price of a social marketing product.

UNIT-IV

Promotional Strategies: Types of Media Channels, Choosing Media Vehicles, Timings and Factors Influencing media strategies; Plan Evaluation and Monitoring: Outcome measures, Process Measures; Establishing Budgets and finding Funding Sources.

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Suggested Readings:

- 1. Philip, Kotler, Ned Roberto, Nancy Lee, *Social Marketing: Improving the quality of life,* Sage Publication.
- 2. Nancy, R., Lee, Philip, Kotler, *Social Marketing; Influencing Behavior for Good*, Sage, R., Kraig, Lefebvre, *Social Marketing and Social Change*, Wiley.
- 3. Hong, Cheng, Philip Kotler, Nancy R. Lee, *Social Marketing for Public Health: Global Trend and Success Stories*, Jones and Bartlett Publishers, LLC

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DIGITAL AND SOCIAL MEDIA MARKETING

Time Allowed: 3 Hours

M.M:70

Course Objective: The aim of this paper is to acquaint the students with the concepts, techniques and developing skills regarding application of effective digital and social media marketing.

Course Outcomes:

- **CO1**: Students will be able to define various terms used in the field of digital and social media marketing.
- **CO2**: Students will be able to explain the procedures used in planning and implementation of digital and social media marketing.
- CO3: Students will be able to illustrate existing digital and social media marketing strategies.
- **CO4**: Students will be able to distinguish the utility of various social media platforms for promoting a brand.
- **CO5**: Students will be able to select the most suitable social media platform to market a brand.
- CO6: Students will be able to design a social media marketing strategy for a brand.

Course Contents:

UNIT I

Introduction to digital marketing, advantages of digital medium over other media, Impact of internet on consumer buying behaviour. Domain names; Website hosting; Lead generation; Ethical and Legal Issues in the field of digital marketing.

UNIT II

Search Engine Optimisation (SEO): Introduction to SEO; understanding search engines; basics of keyword research; On-page and off-page Search Engine Optimisation.

UNIT III

Search Engine Marketing (SEM): Introduction to SEM; Google Ad words; keywords; bidding and budget; quality score; creating and optimising campaign. Google Analytics; Content marketing; Affiliate marketing; Email marketing; Mobile marketing

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UNIT IV

Social media marketing: meaning; approach to social media; types of social media websites; blogging; social media engagement; social media ROI; using social media for branding and promotion. Marketing on Facebook, LinkedIn, Youtube, Instagram, Pinterest

Suggested Readings:

- 1. Parkin Godfrey, Digital Marketing: Strategies for Online Success, New Holland Publishers.
- 2. Charlesworth A., Internet Marketing: A Practical Approach, BH Publications.
- 3. Chaffey Dave, *Internet Marketing: Strategy, Implementation and Practice*, Pearson Education.
- 4. Trengove Alex, Malczyk Anna and Beneke Justin, *Internet Marketing*, GetSmarter under the Creative Commons BY-NC 3.0.

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CUSTOMER RELATIONSHIP MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective: The aim of this course is to acquaint the students with concepts, techniques and give experience in the application of concepts for developing effective Customer Relationship programme.

Course Outcomes:

- **CO1**: Students will be able to describe the customer equity.
- CO2: Students will be able to identify the benefits of value creation for retaining customers.
- CO3: Students will be able to interpret the role of appropriate business process and technology management capabilities in managing customer relationship.
- CO4: Students will be able to compare different processes.
- CO5: Students will be able to evaluate CRM implementation Strategies.
- **CO6:** Students will be able to design the strategies framework for the CRM integration in the existing function of the organisation.

Course Contents:

UNIT-I

Prerequisites to CRM: Changing face of Indian market, Customer ownership and customer values, Customer life cycle (CLC) and Customer lifetime value (CLV), Customer relationship. Relationship Marketing- From traditional marketing approach to relationship marketing organizational pervasive approach, Service level agreements (SLA)

UNIT- II

Understanding CRM, Technology and CRM, Levels of CRM, Loyalty Management, Loyalty programmes, reasons of failure of loyalty programmes. Service quality and service capacity planning: service capacity planning process; Customer driven quality and Quality Management System (QMS)

UNIT-III

Planning and implementation of CRM, CRM and Sales Force Automation (SFA): Objectives, Strategic advantage of SFA, Key factor for successful SFA. eCRM: Benefits, Data handling, eCRM

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systems/applications in market, specifications of eCRM solutions, Scope and Significance of a CRM project, CRM implementation process.

UNIT-IV

Making CRM a success: Success factors for CRM, Business Process Reengineering (BPR) for CRM implementation, Data Quality Management (DQM). Securing Customer Data: Information security management system, Ethical issues in CRM, IT solutions of CRM and its Integration, Future of CRM.

Suggested Readings:

- 1. Makkar, U. & Makkar, H. K., Customer Relationship Management, McGraw Hill Education.
- 2. Dyche, Jill., The CRM Handbook-A Business Guide to CRM, Pearson Education Asia.
- 3. Anton, J., Petouhoff, N.L. & Kalia, S., Customer Relationship Management, Pearson.
- 4. Kumar, V. & Reinartz, W., Customer Relationship Management: Concept, Strategy, and Tools, Springer, 2nd Ed.
- 5. Brown, A. Stanly, Customer Relationship Management, John Wiley.
- 6. Gosney, John W. and Thomas P. Boehm, *Customer Relationship Management Essentials*, Prentice Hall.
- 7. Seth, Jagdish N., Customer Relationship Management, Tata McGraw Hill Publishing Co.

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HUMAN RESOURCE MANAGEMENT AREA

THIRD SEMESTER

MCH-331

HUMAN RESOURCE PLANNING

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of this paper is to develop a conceptual as well as a practical understanding of the students regarding human resource planning in organizations

Course Outcomes:

CO1: Students will be able to recall different terms used in Human Resource Planning.

CO2: Students will be able to explain conceptual framework of HRP.

CO3: Students will be able to demonstrate the process of HRP.

CO4: Students will be able to compare job related techniques.

CO5: Students will be able to evaluate practical solutions of problems related to manpower planning in the organization.

CO6: Students will be able to develop their own model of HR planning suitable to the organization.

Course Contents:

UNIT-I

Human Resource Planning: Concept, Objectives, Benefits, Problems; Strategic Human Resource Planning; Job Analysis

UNIT-II

Human Resource Planning Process and Action Plans: Human Resource Demand Forecasting: Assessment and Techniques; Human Resource Supply Forecasting: Assessment and Techniques; Action plans for Recruitment and Selection, Separation, Retention, Training and Redeployment

UNIT-III

Productivity Management and Human Resource Planning: Work Study, Method Study, Work Measurement, Job Design, Work Scheduling.

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UNIT-IV

Human Resource Planning in Changing Context: Human Resource Information System; Human Resource Accounting and Audit; Structure of Labor Force and Demographic Changes: Problems and Challenges.

Suggested Readings:

- 1. Sekhri, A., Human Resource Planning & Audit, Himalya Publishing House
- 2. Bhattacharyya D.K., *Human Resource Planning*, Excel Books India.
- 1. Dessler, G., Human Resource Management, Prentice Hall of India
- 2. Rao, V.S.P., Human Resource Management, Excel Books
- 3. Ashwathappa, K., Text & Cases in Human Resources Management, Tata McGraw Hill
- 4. D'Cenzo, David A. andRobbins, S. P., *Human Resource Management*, John Wiley
- 5. Gomez-Mejia, Luis R., D. B. Balkin, and. Cardy, R. L*Managing Human Resources*, Prentice Hall
- 6. Rothwell, W. J., & Kazanas, H. C., *Planning and Managing Human Resources*, Jaico Publishing House
- 7. Stevenson, W., Operations Management, McGraw Hill

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MCH-332

LABOUR LAWS

Time Allowed: 3 Hours

M.M:70

Course Objective:

The course aims to provide an understanding, application and interpretation of the various labor laws and their implications for industrial relations and labor issues.

Course Outcomes:

CO1: Students will be able to list the labor laws and related terminology.

CO2: Students will be able to explain the importance of various labor legislations.

CO3: Students will be able to apply the knowledge of labor laws in their working organizations.

CO4: Students will be able to appraise the implementation of various labor laws.

CO5: Students will be able to evaluate the practical implementation of various labor laws.

CO6: Students will be able to develop various case laws pertaining to labor issues for corporate sector.

Course Contents:

UNIT-I

Introduction, Emergence, Need and Objectives of Labour Laws; Principles of Modern Labour Laws; Classification of Labour Laws; ILO, Indian Constitution and Labour Legislations.

UNIT-II

Regulative Labour Laws: Trade Union Act; Industrial Dispute Act; Factory Act.

UNIT-III

Wage-Related Labour Laws: Payment of Wages Act; Minimum Wages Act; Payment of Bonus Act; Payment of Gratuity Act.

UNIT-IV

Social Security Labour Laws: Workmen's Compensation Act; Employees' State Insurance Act; Employees Provident Fund and Miscellaneous Provisons Act.



Suggested Readings:

- 1. Singh, B.D., Labour Laws for Managers, Excel Books
- 2. Malik, P L., Handbook of Industrial Law, Eastern Books.
- 3. Kapoor, N.D., Mercantile Law, Sultan Chand and Sons.
- 4. Taxmannn's Labour Laws, Taxmann Publishing Pvt. Ltd.
- 5. Srivastava, S. C., *Industrial Relations and Labour Law*, Vikas Publishing House.
- 6. Latest Bare Act of each Act.

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MCH-333

MANAGEMENT OF INDUSTRIAL RELATIONS

Time Allowed: 3 Hours

M.M:70

Course Objective: Organizational efficiency and performance are intricately interlinked with industrial relations. This course attempts to appreciate the conceptual and practical aspects of industrial relations at the macro and micro levels.

Course Outcomes:

CO1: Students will be able to describe the basic concepts of Industrial Relations.

CO2: Students will be able to explain the importance of organized trade unions.

CO3: Students will be able to apply the process of collective bargaining between managers and workers.

CO4: Students will be able to appraise the process of resolving industrial disputes in industrial o organizations.

CO5: Students will be able to evaluate and compare the industrial relations scenario of different countries.

CO6: Students will be able construct cases of industrial disputes/ relations of corporate sector.

Course Contents:

UNIT-I

Industrial Relations: Concept, evolution, significance, perspectives and organization; Anatomy of industrial relations; Industrial relations and the State; Trade Unions: Concept, significance, types, approaches and objectives, Problems of trade unions in India and recommendations of National Commission on labor for strengthening of trade unions.

UNIT-II

Collective Bargaining: concept, importance and process of bargaining; Participative Management: Forms of worker's participation in management; Tripartite and bipartite bodies; Standing order and Grievance procedure; Code of Discipline.

UNIT-III

Industrial Disputes: Conciliation and Board of conciliation; Arbitration: types and evaluation; Adjudication: Three tier System, Model principles for reference of dispute to adjudication.

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UNIT-IV

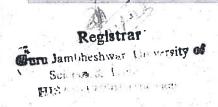
Modern and international Scenario of Industrial relations: Industrial Relations and Technological Change; Industrial Relations and HRD; ILO and Industrial Relations; Legal Framework of Industrial Relations; Industrial Relations systems in India, UK, USA and Japan.

Suggested Readings:

- 1. Mamoria & Manoria, Dynamics of Industrial Relations; Himalaya Publishing House.
- 2. Niland, J.R.., The Future of Industrial Relations, Sage.
- 3. Davar; R.S., *Personnel Management and Industrial Relations*; Vikas Publishing House Pvt Ltd
- 4. Manappa, A., *Industrial Relations*; Tata McGraw Hill Publishing Company Ltd.
- 5. Dwivedi; R.S., *Managing Human Resources and Industrial Relations*. Galgotia Publishing Company.
- 6. Srivatava; S.C., *Industrial Relations and Labour Laws*, Vikas Publishing House Pvt Ltd.
- 7. Venkata Ratnam, C.S., *Industrial Relations*, Oxford University Press.
- 8. Sen, R. Industrial Relations in India; Macmillan India Ltd.

Important Instructions for the Course Coordinator and the Examiner:

- The list of cases and specific references including recent articles will be announced in the class at the time of launching of the course by the Course Coordinator.
- The examiner is required to cover all course outcomes framed for a particular course in a balanced manner while setting nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. Wherever possible, the examiner may give a case study that will be equal to one question only. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.



MCH-334

LEADERSHIP DYNAMICS

Time Allowed: 3 Hours

M.M:70

Course Objective:

The purpose of this course is to enhance the leadership skills of students and to develop insight into interpersonal dynamics through sensitivity training and experience based methods of learning.

Course Outcomes:

CO1: Students will be able to recall different terms used in leadership dynamics.

CO2: Students will be able to explain conceptual framework of leadership dynamics.

CO3: Students will be able to apply various leadership theories in practical life.

CO4: Students will be able to compare the leadership styles practised by famous personalities.

CO5: Students will be able to evaluate various contemporary issues in leadership.

CO6: Students will be able to develop their own particular style of leadership.

Course Contents:

UNIT-I

Leadership Dynamics: Concept, Leadership and Management, Leadership and Power, Successful Leadership versus Effective Leadership.

UNIT-II

Leadership Approaches: Trait Approach, Skills Approach, Behavioral Approach, Situational Approach, Contingency Approach, Path Goal Approach.

UNIT-III

Leadership Styles: Autocratic, Democratic, Participative, Supportive, Free-rein; Comparative Analysis of Leadership Styles, Building Effective Leadership Styles, Leadership Styles of Famous Personalities in general perspective and in managerial perspective.

UNIT-IV

Contemporary Issues in Leadership: Charismatic Leadership, Women Leadership, Multicultural Leadership, Team Leadership, Ethics in Leadership, Servant Leadership, Transactional and Transformational leadership.

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Suggesting Readings:

1. Northouse, G. P., Leadership: Theory and Practice, Sage Publications.

2. Yukl, G., Leadership in Organizations, Pearson.

3. Hersey, P., Blanchard, K.H. and Johnson, D.E., *Management of Organisational Behaviour*, PHI.

4. Daft, L. R., The Leadership Experience, Cengage Learning.

5. Haldar, U. K., Leadership and Team Building, Oxford University Press.

6. Tripathi, D. K., Team Building and Leadership, Himalaya Publishing House.

Important Instructions for the Course Coordinator and the Examiner:

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MCH-335

COMPENSATION MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective: The course is designed to promote understanding of issues related to the compensation or rewarding human resources in the corporate sector, public services and other forms of organizations and to impart skills in designing, analyzing and restructuring reward management systems, policies and

Course Outcomes:

CO1: Students will be able to recall different terms used for compensation management.

CO2: Students will be able to explain various compensation management techniques.

strategies.

CO3: Students will be able to demonstrate the process of fixing compensation for various employees of organisations.

CO4: Students will be able to compare compensation practices of various companies.

CO5: Students will be able to evaluate compensation practices of multinational companies.

CO6: Students will be able to develop compensation plans for managers of middle scale organisations.

Course Contents:

UNIT-I

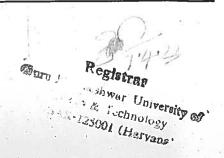
Compensation Management- Concept, objectives, nature, types, compensation responsibilities, compensation philosophies & approaches.

UNIT-II

Bases for pay- traditional bases, incentive pay and person-focused pay; Pay for Performance, Competency Based Pay, Team rewards; Designing Compensation System- internal alignment (job analysis and job evaluation), external competitiveness and individual contribution.

UNIT-III

Employee Benefits- legally required benefits, discretionary benefits and key issues in employee benefits; Compensating Executives, Laws relating to Compensation.



UNIT-IV

Contemporary Strategic Compensation Challenges- compensation practices of multinational corporations and working of different institutions related to reward system like wage boards, pay commissions.

Suggested Readings:

- 1. Martocchio, Joseph J, *Strategic Compensation: A Human Resource Management Approach*, Pearson Education.
- 2. Milkovich and Newman, Compensation, Tata McGraw-Hill.
- 3. Armstrong, Michel and Murlis, Helen, *Reward Management: A Handbook of Salary Administration*, Kogan Page.
- 4. Bhattacharya, M.S.& Sengupta, N., Compensation Management, Excel Books

Important Instructions for the Course Coordinator and the Examiner:

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MCH-336

BUSINESS NEGOTIATIONS

Time Allowed: 3 Hours

M.M:70

Course Objective:

To develop a set of conceptual frameworks that will help students to better analyze negotiations in general and master the business negotiation skills.

Course Outcomes:

CO1: Students will be able to describe the fundamentals of business negotiation.

CO2: Students will be able to explain the power of business negotiation in resolving differences across personalities, gender and culture.

CO3: Students will be able to apply the process of business negotiation in resolving organisational conflicts.

CO4: Students will be able to compare negotiation strategies in resolving organisational conflicts.

CO5: Students will be able to appraise the negotiation strategies for resolving differences at individual and organisational levels.

CO6: Students will be able to develop innovative negotiation strategies for resolving conflicts.

Course Contents:

UNIT-I

Negotiation Fundamentals: the Nature of Negotiations and conflicts; Distributive and Integrative Negotiation; Negotiation Strategy and Planning: Unilateral vs. Bilateral Strategies, Planning Process, Negotiation Sub Processes: Perception, Cognition, Emotions, and Communication.

UNIT-II

Negotiation Power: Influence Process, Negotiation Contexts: Relationships in Negotiation; Forms of relationships; Key elements in managing relationships, Agents, Constituents and Audiences: Coalitions, Standards for coalition decision making, Multiple Parties and Teams

UNIT-III

Individual Differences I: Personality and Negotiations, Individual Differences II: Gender and Negotiations, Negotiation across Cultures: International and Cross Cultural Negotiations, Culture and negotiation, Managerial and research perspective on cross cultural negotiation.

UNIT-IV

Resolving Differences: Managing Negotiation Impasses; Nature of impasses, resolving impasses; Negotiation Mismatches: Managing the shadow negotiation and social contract, Ury's Breakthrough Approach; Managing difficult negotiation: Third Party Approaches; Ethics in Negotiation.



Suggested Readings:

- 1. Lewicki Roy J., Saunders David M. & Barry Bruce, Negotiations, Tata McGraw Hill.
- 2. Brett, J.M., Negotiating Globally, Francisco, Josseys-Bass.

Important Instructions for the Course Coordinator and the Examiner:

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FOURTH SEMESTER

MCH- 431

PERFORMANCE MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of this course is to acquaint the students regarding the concept, importance, process and implementation of performance management system in an organizations.

Course Outcomes:

CO1: Students will be able to recall different terms used in performance management.

CO2: Students will be able to identify various performance management practices.

CO3: Students will be able to interpret various performance management techniques.

CO4: Students will be able to compare performance management practices of different companies.

CO5: Students will be able to evaluate the implementation of various performance management practices.

CO6: Students will be able to develop a performance management model for corporate sector.

Course Contents:

UNIT-I

Foundations of Performance Management: Concept, Objectives, Significance of Performance Management, Performance Management Process, Performance Management and Strategic Planning, Performance Management and Performance Appraisal.

UNIT-II

Implementation of Performance Management System: Defining Performance and Choosing Measuring Approach, Models for assessing performance: balanced Scorecard, EFQM Model; Outcome Metrics: Economic Value added (EVA) & other economic measures; Measuring Results and Behavior, Common Problems in Employee Assessment, Gathering Performance Information, Implementing a Performance Management System.

UNIT-III

Performance Management and Employee Development: Personal Developmental Plans, 360 Degree Feedback Systems, Performance Management Skills, Contribution of Human Resource Management Practices to Employee Performance.

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UNIT-IV

Reward Systems and Legal Issues: Traditional and Pay for Performance plans; Impact of leadership on organizational performance, Managing team performance, ethics in performance Management; Performance management practices in Indian organizations.

Suggested Readings:

- 1. Aguinis, H., Performance Management, Prentice Hall
- 2. Bagchi, S. N., Performance Management, Cengage Learning
- 3. Bhattacharyya, D, Performance Management System & Strategies, Pearson Education
- 4. Bacal, R., Performance Management, McGrawHill
- 5. Dessler, G., Human Resource Management, Pearson Education
- 6. Armstrong, M., Performance Management Key strategies and Practical Guidelines, Kogan Page

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MCH-432 LABOUR WELFARE AND SOCIAL SECURITY

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to acquaint the students with the significance and processes of Labor Welfare activities and Social Security measure adopted by the organizations.

Course Outcomes:

CO1: Students will be able to recall different terms used in labour welfare and social security.

CO2: Students will be able to describe the labour inspection system in factories.

CO3: Students will be able to illustrate various social welfare facilities.

CO4: Students will be able to compare various welfare facilities provided by employers in factories.

CO5: Students will be able to evaluate the various social security measures provided to employees in factories.

CO6: Students will be able to develop labour welfare and social security measures for the employees of middle scale organisations.

Course Contents:

UNIT-I

Labor Welfare Activities: Concept and Significance, Origin of Labor Welfare activities, Theories of Labor Welfare; Statutory Welfare Provision in Factory Act; Labor Welfare Funds; Labor Inspection System.

UNIT-II

Critical Estimate of Welfare Work by Employers, Local Bodies and Trade Unions; Welfare of Unorganized Labor; ILO and Labor Welfare

UNIT-III

Some Special Welfare Activities: Grain Shop Facilities, Educational Facilities, Medical and Reorientation, Workers education scheme; Industrial safety; Industrial housing; Industrial health; Industrial hygiene.

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UNIT-IV

Social Security: Concept and Importance; Employees' Compensation in India; Sickness Insurance in India; Unemployment Insurance in India; Old Age and Invalidity Security; Social Security Measures in the selected Countries (England, Japan & U.S.A.).

Suggested Readings:

- 1. Dale Yoder, Personal Management and Industrial Relations, Tata McGraw Hill.
- 2. Monappa, Arun, *Industrial Relations*, Tata McGraw Hill.
- 3. Sharma, A.M., *Aspects of Labour Welfare and Social Security*, Himalaya Publishing House
- 4. Sivarethinamohan, R., *Industrial Relation and Labour Welfare*, PHI Learning Private Ltd.

Important Instructions for the Course Coordinator and the Examiner:

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- The examiner is required to cover all course outcomes framed for a particular course in a balanced manner while setting nine questions in all. The first question will be compulsory consisting of six short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. Wherever possible, the examiner may give a case study that will be equal to one question only. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.

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MCH-433

MANAGING INTERPERSONAL AND GROUP PROCESSES

Time Allowed: 3 Hours

M.M:70

Course Objective: The purpose of this course is to advance understanding regarding interpersonal and group processes and help the students to examine and develop process facilitation skills mainly through laboratory and other experience based methods of learning.

Course Outcomes:

CO1: Students will be able to define different concepts of Interpersonal and group processes.

CO2: Students will be able to explain interpersonal behaviour.

CO3: Students will be able to demonstrate the role of transactional analyses in interpersonal behaviour.

CO4: Students will be able to compare various group decision making techniques.

CO5: Students will be able to evaluate the role of negotiations in group conflicts.

CO6: Students will be able to construct their own interpersonal behaviour model.

Course Contents:

UNIT-I

Group dynamics: types of groups, group properties, roles, norms, status and size, stages of group development and change; Group cohesiveness: factors contributing to group cohesiveness, Influence processes- power and politics in groups.

UNIT-II

Interpersonal communication: Uncertainty reduction theory, Social exchange theory, Cognitive dissonance theory; Interpersonal awareness and feedback process- Transactional Analysis; Interpersonal trust; Competition and cooperation.

UNIT-III

Group decision making: The Vroom Yetton Model, Techniques of group decision making, Advantages and disadvantages of group decision making; Group synergy; Team building.

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UNIT-IV

Inter-group relation and conflict: nature and types of conflicts, causes of conflicts and remedial measures of group conflicts, Role of Negotiation in group conflicts; distributive and integrative negotiation, third party negotiation; Fundamental interpersonal relations orientation (FIRO-B).

Suggested Readings:

1. Chandan, J S, Organizational Behaviour, Vikas Publication.

2. Kolb, D., *Organizational Behaviour: Practical Readings for Management*, Englewood Cliffs, Prentice Hall Inc.

3. Mainiero, L A & Tromley C L., Developing Managerial Skills in OB, Prentice Hall of India,

4. Moore, M.D., Inside Organizations: Understanding the Human Dimensions, Sage.

Important Instructions for the Course Coordinator and the Examiner:

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MCH-434

COUNSELING SKILLS

Time Allowed: 3 Hours

M.M:70

Course Objective:

To develop basic skills among students to independently handle a wide range of employee counseling and performance counseling.

Course Outcomes:

CO1: Students will be able to recall different terms used in counselling.

CO2: Students will be able to explain conceptual framework of counselling.

CO3: Students will be able to demonstrate the process of counselling.

CO4: Students will be able to differentiate between theories of counselling.

CO5: Students will be able to evaluate practical solutions to human behaviour related problems in the organization.

CO6: Students will be able to develop their own model of counselling.

Course Contents:

UNIT-I

Introduction to Counseling-Emergence, Growth, Definition, Need, Goal, Role and Characteristics of Counselor and Counselee, Difference between Counseling and Psychotherapy, and General Principles of Counseling

UNIT-II

Approaches to Counseling-Psycho-analytical (Sigmund Freud Theory), Therapeutic (Alfred Adler Theory), Behaviouristic (B. F. Skinner Theory), Cognitive (Albert Ellis Model) and Humanistic Approaches (Carl Rogers Approach);

UNIT-III

Counseling Process- 5-D Model, the Phases of Counseling Process, Counseling Environment and Procedure, and the Core Conditions of Counseling; Counselor's Attitude and Skills of Counseling-Verbal and Non-verbal Communication Modalities, Listening Skills, Listening Barriers and Strategies to Overcome Listening Barriers;

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UNIT-IV

Organizational Applications of Counseling Skills- Identifying Problems and Coping Strategies with regard to Occupational Stress and Performance Management; Special Problems in Counseling-Selection of Counseling Strategies and Interventions, Changing Behavior through Counseling; Ethical and Legal Aspects of Counseling, and Current trends in Counseling

Suggested Readings:

- 1. Cormer, L.S., and Hackney, H., *The Professional Counselor's Process Guide Helping*, Englewood Cliffs, Prentice Hall Inc.
- 2. Moursund, J., *The Process of Counseling and Therapy*, Englewood Cliffs, Prentice Hall Inc.
- 3. Munro, C A, Counseling: A Skills Approach, Methuen.
- 4. Reddy, Michael, Counseling at Work, British Psychological Society and Methuen.
- 5. Rao, S. Narayana, *Counselling and Guidance*, Tata McGraw Hill.
- 6. Gladding, S. T, Counseling- A Comprehensive Profession, Pearson.
- 7. Singh, Kavita, Counselling Skills for Managers, Prentice Hall of India.

Important Instructions for the Course Coordinator and the Examiner:

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Time Allowed: 3 Hours

M.M:70

Course Objective: The objective of this paper is to make the students learn about the organizational change and prepare them as change facilitators using the

knowledge and techniques of behavioral science.

Course Outcomes:

CO1: Students will be able to recall different concepts of organisation change and intervention strategies.

CO2: Students will be able to explain the process of organisation changes.

CO3: Students will be able to demonstrate the various intervention strategies.

CO4: Students will be able to appraise the process of organisation changes.

CO5: Students will be able to evaluate the role of change agents.

CO6: Students will be able to develop their own consultancy model for corporate sector.

Course Contents:

UNIT-I

Organizational Change: The domain of change, concept, Change Agents, Strategic management of change; Managerial approaches for implementing change; Models of Organizational Change, Kurt Lewin's Models of Change, Huse's 7 stages model of change

UNIT-II

Change Management: Understanding the Change Process, Facilitating Change, Dealing with Individual and Group Resistances, Intervention Strategies and Develop Learning Organization. Organizational Diagnosis- Meaning & Importance, Weisbord's model of Organizational Diagnosis and Methods of obtaining diagnostic information

UNIT-III

Organizational Development: An overview, Steps in OD process, General OD Competencies, OD Skills, Values, Assumption and Beliefs in OD; Designing OD Interventions- Interpersonal, Team, Intergroup, Structural and Comprehensive Interventions; Evaluation of Organizational Development Interventions

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UNIT-IV

Organizational Culture & Change; Corporate Culture, Types of Culture, Importance, Nature, Formal & Informal Components of Organizational Culture, Designing for Cultural Change; Organizational Culture & Leadership; Emerging Trends in Organizational Culture; Ethics of OD Professionals and Future of OD.

Suggested Readings:

- 1. French, W. H. and Bell, Organization Development, Prentice Hall of India.
- 2. French, W. H., *Organization Development Theory, Practice and Research*, Prentice Hall of India.
- 3. Singh, K., Organization Change and Development, Excel Books
- 4. Huse, F. E. and Cummings, T. G., Organization Development and Change, West.
- 5. De Nitish, Alternative Designs of Human Organizations, Sage.
- Harvey, D.F. and Brown, D.R., An Experiential Approach to Organization Development, Prentice Hall

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MCH-436 GLOBAL HUMAN RESOURCE MANAGEMENT

Time Allowed: 3 Hours

M.M:70

Course Objective:

The objective of this course is to develop a diagnostic and conceptual understanding of the cultural and related behavioral variables in the Human Resource Management of global organizations.

Course Outcomes:

CO1: Students will be able to describe the concept of global human resource management.

CO2: Students will be able to discuss the human and cultural variables in global organisations.

CO3: Students will be able to interpret the various dimensions of Hofstede's study.

CO4: Students will be able to compare various studies related to culture.

CO5: Students will be able to evaluate various HRM practices prevailing in various global organisations.

CO6: Students will be able to formulate negotiation process in cross cultural context.

Course Contents:

UNIT-I

Human and Cultural Variables in Global Organizations: Culture and values, Cross Cultural Differences and Managerial Implications

UNIT-II

Cultures in Organizations and Hofstede's Study – Cultural dimensions and their HR and managerial implications

UNIT-III

Evolution of Global Organizations: Cross Cultural Leadership, Motivation and Decision Making, Cross Cultural Communication and Negotiation.

UNIT-IV

Human Resource Management in Global Organizations: Selection, Source criteria for International Assignment, Compensation and Appraisal System.

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Suggested Readings:

- 1. Adler, N.J., International Dimensions of Organizational Behaviour, Kent Publications.
- 2. Bartiett, C. and Ghoshal, S., *Transnational Management: Text, Cases and Readings in Cross Border Management*, Irwin.
- 3. Dowling, P.J., International Dimensions of Human Resource Management, Wadsworth.
- 4. Hofstede, G., Cultures Consequence: International Differences in Work Related Values, Sage.
- 5. Marcis, D. & Puffer, S.M., *Management International: Cases, Exercises and Readings*, West Publishing.
- 6. Mead, R., International Management: Cross Cultural Dimensions, Blackwell.
- 7. Ronen, S., Comparative and Multinational Management, John Wiley.

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DURATION OF PROGRAMME

The duration of the M.Com Programme is two years and the maximum duration is four years.

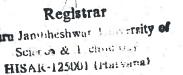
- 1. A student who for whatever reasons is not able to complete the programme within the normal period or the minimum duration prescribed for the programming shall be allowed two years period beyond the normal period to clear the backlog to be qualified for the degree. The general formula, therefore, will be as follows:
 - a) Time span = N+2 years for the completion of programme. Where N stands for the normal or minimum duration prescribed for completion of the programme.
 - b) In exceptional circumstances a further extension of one more year may be granted. The exceptional circumstances are spelt out clearly by the relevant statutory body of the University.
 - c) During the extended period, the student shall be considered as a private candidate and also not be eligible for ranking.
- Ordinarily, no student will be given time beyond the extended period of two years. However, in exceptional circumstances and on the basis of the merits of each case, University may allow a student one more year for completion of the programme.
- 3. Further, the mercy chance, if any will be given within maximum allowed period of the programme as per UGC guidelines. In normal circumstances, only two chances will be given to pass re -appear examination.

FACULTY AND SUPPORT STAFF

FACULTY

The Directorate of Distance Education (DDE) have qualified teaching faculty to look after the programme as a programme coordinator. They look for the following activities related to the distance education:

- > Conducting Personal Contact Programme (PCP) classes for the Distance students.
- ➤ Assisting in the change of Regulations and Curriculum, admission work, counseling new students and other issues such as break of study, exemptions etc..
- ➤ Coordinating with all Study Centers to maintain academic activities.
- > Coordinating for the preparation of study materials for all semesters/year.



> Coordinating with the faculty members for the preparation and evaluation of assignments of students, and viva voce examinations.

SUPPORT STAFF

The Directorate of Distance Education (DDE) of the university is headed by the director who is a full time faculty member (Professor) of the university appointed by Vice-Chancellor to facilitate the development, implementation and monitoring the programmes offered at DDE and to attend all administrative matters concerned with the activities of directorate. The supporting staffs such as one Deputy Registrar, one Assistant Director, one Superintendent, two Deputy Superintendent, one Hindi Officer, Six Assistants and other clerical staff are coordinating the activities of Directorate of Distance Education (DDE) and looks after the problems of the distance students. The Supporting staff looks after the problems of the students through on line admission help line, examination related work, study material delivery, grievance redressal and so on. The DDE is assisted by the IT CELL for the online uploading and evaluation of assignments and other student support activities. The DDE also assisted by Pt. Deendayal Upadhyaya Computer and Informatics Centre (PDUCIC) department for communicating important information to the distance student through Distance website of Guru Jambheshwar University of Science and Technology, Hisar. The PDUCIC department managed the Distance Website of the University. There are four faculties of commerce in Directorate of Distance Education who are looking after the programme as programme coordinator and course co-ordinator. Further, support from faculties of parent teaching department i.e. Haryana School of Business (HSB) is taken during PCP classes, preparation and evaluation of assignments etc.,

INSTRUCTIONAL DELIVERY MECHANISM

The Instructional system of the University comprises four components, viz, Self-Learning Material (SLM), Personal Contact Programme, Internal Assessments and End Term Examination.

➤ Self-Learning Material (SLM) — The success and effectiveness of distance education systems largely depends on the study materials so it is necessary that the study material (SLM) must be ideal for easy and better understanding in self-learning mode. Learning Material through Print media named self-learning Material (SLM) is developed with the approach of self-explanatory, self-contained, self-motivating and self-evacuating followed by the UGC guidelines.

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- ➤ Personal Contact Programme PCP sessions guide the learners as the programme proceeds. The date and venue for the PCP will be communicated to the learners through our website or SMS Service. During PCP, the learner gets guidance for better understanding of the programme and subject. The Personal Contact Programme (PCP) of 15 days duration for semester programme will be arranged for each of the course by the respective Programme coordinator at the University campus. The learners can get their doubts cleared with the help of subject experts so as to improve their self- learning capability. Learners are required to attend PCP sessions for all their respective subjects as 75% attendance is compulsory in PCP classes.
- ➤ Internal Assessments- Distance education learners have to depend much on self-study. In order to ascertain the writing skill and level of comprehension of the learner, assignment work is compulsory for all learners. The Directorate of Distance Education (DDE) of this university has an online portal for the uploading of the assignments and same has been evaluated online by the subject expert. Two assignments of 30 marks i.e. 15 marks each shall be allotted for each subject consists of questions with practical based. The assignment question papers will be uploaded to the website within a scheduled time and the learners shall be required to respond them within a specified period of time. The response of the learner is examined by a faculty member.
- ➤ End Term Examination- At the end of every session learners will give theory exam for 70 marks for each subject. For examination, there will be of nine questions. The first question will be compulsory consisting of six short questions covering the entire syllabus (all four Units). In addition, eight more questions will be set comprising two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to the compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the major test is 03 (three) hours.

STUDENT SUPPORT SERVICES

The distance department of the university is provides the Student Support Services through online mode. Following are the main student support services provided by university through online mode:

- > On line Admission Portal for students
- > On line fee portal for students



- ➤ SMS alert facility for the students for information related to PCPs, Project, Deadlines and Viva-voce etc.
- > Grievance handling mechanism is adopted with the help of supporting technical staff
- > Practical Questions Based Assignments
- > On-line availability of Old Question Papers and study material
- > Comprehensive viva-voce is conducted after term end examination in the University
- > Student Help Desk

F. PROCEDURE FOR ADMISSIONS, CURRICULUM TRANSACTION AND EVALUATION

• Procedure for Admissions

Admission Procedure - Whole admission process is online as per the University rules.

Admission policy for the programme - Admission is based on filling online Admission Form. The procedure of filling the online application form is a four-step procedure, i.e.

- > Candidate Registration.
- > Payment option through Net Banking, Debit card or Credit card.
- > Filling of application form.
- > Uploading required scanned documents.
- ➤ Generating Preview

Eligibility

Any Commerce Graduate/ BA with Economics/ BBA/ equivalent with at least 50% marks (47.5% for SC category of Haryana) from a recognized university.

• Fee structure

MASTER OF COMMERCE (M.COM)

Installment No.	Amount	Without late fee	With late fee of ₹ 1000/- per month
1 st Installment	₹ 10,500/-	- Pr - 19	
2 nd Installment	₹ 5500/-	31st January every year	30 th April every year
3 rd Installment	₹ 10,500/-	31st August every year	30 th November every year
4 th Installment	₹ 5500/-	31st January every year	30 th April every year

• Curriculum Transaction



The Directorate will supply study material in the form of Self-Learning Mode (SLM) printed book/lessons as well as available on the website of Distance Education. The students will get the same directly from the Directorate either by-hand or will be sent by post/courier service. The Personal Contact Programme (PCP) of 15 days duration for semester programme will be arranged for each of the course by the respective Programme coordinator at the University campus. Theory/Practical teaching as per requirements will be provided to the students by the subject specialists. The PCPs will be held as per the schedule given in the prospectus. In addition to this students are informed through Distance Education website and SMS as well. However, the students are advised to report to the concerned Programme coordinator for PCP at the contact given therein.

Evaluation

Internal assessment is based on practical assignments and the evaluation is done by experts in relevant field. External term end evaluation is done by experts in relevant field.

Last Date of online submission of Internal Assignments

Odd Semester	Even Semester	
15 th January every year	30 th April every year	
Last Date of submission of Internal Assignment with	a late fee of Rs. 500/-	
31 st January every year	31st May every year	
Last Date of submission of Internal Assignment with	a late fee of Rs.1000/-	
15 th February every year	15 th June every year	

NOTE: The students have to upload two internal handwritten assignment of each theory paper of 30% weightage in the stipulated time period mentioned above. Assignments to be prepared by the students will be available on the website www.dde.gjust.ac.in.. It is the sole responsibility of the student to download the question paper of the assignment and upload the solved assignments online as per above mentioned schedule. If any student will upload the assignments after the above stipulated schedule then the assignments will not be accepted and the student will be treated as ABSENT in internal marks.

G. REQUIREMENT OF THE LABORATORY SUPPORT AND LIBRARY RESOURCES

• Laboratory Support:

A well-equipped Computer lab with latest version of MS Office and internet facility is also available



in the department of Directorate of Distance Education (DDE) of this university. This Computer Lab is established with an aim to meet the computing requirements of all the Distance learners of the University. This lab is equipped with 12 desktop computers of latest configuration i.e. Window 7, Window 10 and I3 processor. In addition to this, there is one printer, one scanner and one LED in the Computer Lab for teaching through presentation and video lectures to students. There is one lab attendant for handling the queries regarding online admission, fee payment, uploading of assignments, any other queries through mail, etc.

• Library Resources:

The infrastructure related to library resources is available in the present set-up of the university whereby, we have a well stacked library with latest books, journals, magazines and newspapers. It is named after the great Indian Jurist, Economist, Politician and Social Reformer Dr. Bhim Rao Ambedkar. The seating capacity of the University Library is 400 seats. By the end of December 2018, the Library has a collection of 106566 books. The Library in its electronic repository has the access to 7000+ e-journals from 14 publishers and 5 Databases. Moreover, 2149 e-books of national and international repute publishers have also been added in e-repository to enrich the students. University library provides different services to distance learners such as Air Conditioned Reading Halls, Reading Facility for 400 students, Laptop Lab for SC/ST students consisting of 20 Laptops with internet facility and Potable Water facility on every floor. The online e-library resources namely INFLIBNET is also available for the accessibility of books and journals.

H. COST ESTIMATE OF THE PROGRAMME AND THE PROVISIONS

Cost estimates of programme is based on following components:

- Study Material development and delivery such as cost of writing, vetting, editing, SLM conversion, printing and dispatch etc. (remuneration rates are attached)
- PCP and related activities (remuneration rates are attached)
- Examination and evaluation related activities (remuneration rates attached)
- Internal assessment including assignment preparation and evaluation.
- Miscellaneous costs like advertising on FM radio broadcast, newspapers and SMS alert.
- Salary to Teaching and Non-Teaching Staff.

Special Provisions:

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- The Scheduled Caste students of Haryana whose family income from all sources is up to Rs. 2.5 Lacs per annum as prescribed by the State Govt. for Post Matric Scholarship and who produces, at the time of admission, the "Caste" and "Income" certificates issued by the competent authority, are not required to pay any kind of fees and they may pay a sum of Rs.1000/-(Refundable) as security/caution money at the time of admission. The eligible SC students will submit the Post Matric Scholarship forms at the time of admission/fee deposition. The hard copy of the filled post matric scholarship form is to be submitted within the stipulated time in the office of the Directorate of Distance Education failing which the candidate will not be allowed to appear in the examination. In case the student does not apply for scholarship or is found ineligible for award of scholarship or being eligible he/she is not awarded scholarship due to one or other reason, he/she will be liable to pay full fee along with late fine @ Rs. 10/- per day.
- The fee concession on the pattern of Guru Jambheshwar University of Science & Technology employees will also be extended to the employees of the office of the Directorate of Technical Education Haryana posted in the Head Office at Panchkula and the Audit staff posted in Guru Jambheshwar University of Science & Technology, Hisar for pursuing studies in all the courses being run by the University. However, the Audit Staff will be entitled to avail such facility up to the period till they remain posted in Guru Jambheshwar University of Science & Technology, Hisar.
- The students must remit the fee of subsequent semesters/installments as per the schedule without waiting for the result so as to enable the Directorate to supply the study material in time.
- In case of sudden demise of any student during study the fees paid by him/her for the session of
 demise will be refunded, if claimed by parents 25% concession of the total fees to serving/ retired
 military personal upto the rank of N.C.O. or of military personal killed or incapacitated wholly or
 partially during the war and their wards, will be allowed.

I. QUALITY ASSURANCE MECHANISM

• Quality Policy of University:

The Guru Jambheshwar University of Science & Technology (GJUST) is committed to achieve excellence in teaching, research, and extension by follow and implement following points of quality policy:

> Imparting globally competitive education

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- Selecting and retaining competent and motivating faculty
- > Providing state or the art infrastructural resources
- > Promoting quality research culture
- > Ensuring transparent and accountable governance
- > Focusing on holistic development of learners
- > Symbiotic relationship with industry, other academic institutions, and society
- > Striving for financial self-reliance

Advisory Committee:

The Advisory Committee headed by the Vice-Chancellor has been constituted to monitor the activities of the Directorate along-with matters related to quality assurance (Functions and List of members attached).

Following is the composition of Advisory Committee:

Vice-Chancellor, GJUS&T, Hisar	Chairman
Registrar, GJUS&T, Hisar	Member
Dean. of Colleges, GJUS&T, Hisar	Member
Dean, Academic Affair, GJUS&T, Hisar	Member
Director, Distance Education, Kurukshetra University	Member
Director, Distance Education, GJUS&T, Hisar	Member
Director, HSB, GJUS&T, Hisar	Member
Chairman, Deptt. of CSE, GJUS&T, Hisar	Member
Chairman, Deptt. of CM&T, GJUS&T, Hisar	Member
Chairman, Deptt. of Mathematics, GJUS&T, Hisar	Member
Prof. H. Bansal, HSB, GJUS&T, Hisar	Member
Prof. Saroj, Deptt. of CSE, GJUS&T, Hisar	Member
Prof. Manoj Dayal, Deptt. of CM&T, GJUS&T, Hisar	Member
Director, PDUCIC, GJUS&T, Hisar	Member
All Programme Co-ordinators, DE, GJUS&T, Hisar	Members

Centre for Internal Quality Assurance (CIQA)

The CIQA also oversees the development and preparation of SLMs, then it is submitted to the Board of Studies concerned for the approval. The objective of establishment of Centre for Internal Quality Assurance (CIQA) is to develop and put in place a comprehensive and dynamic internal quality assurance system to provide high quality programmes of higher education in the Open and Distance



Learning mode.

Composition of CIQA for the year 2022-23

CENTRE FOR INTERNAL QUALITY ASSURANCE (C.I.Q.A.)			
1	Vice Chancellor, GJUS&T	Chairperson	
2	Registrar, GJUS&T	Member	
3	Dean of Colleges, GJUS&T	Member	
4	Controller of Examination, GJUS&T	Member	
5	Director, HSB, GJUS&T	Member	
6	Chairperson, Deptt. of CMT, GJUS&T	Member	
7	Chairperson, Deptt. of Mathematics, GJUS&T	Member	
8	Prof. Pardeep Kumar, Director (DE), KUK	Member	
9	Prof. Saroj, Deptt. of CSE, GJUS&T	Member	
10	Prof. R. Baskar, IGNOU, Delhi	Member	
11	Prof. Suresh Mittal, HSB, GJUS&T	Member	
12	Director, PDUCIC, GJUS&T	Member	
13	Dy. Registrar (DE), GJUS&T	Member	
14	DR/AR (Accounts), GJUS&T	Member	
15	DR/AR (Academic), GJUS&T	Member	
16	Director, Distance Education/CIQA	Member Secretary	
17	Sh. Vinod Goyal, Assistant Prof., DDE, GJUS&T	Special Invitee	
18	Dr Sunaina, Assistant Prof., DDE, GJUS&T	Special Invitee	
. 19	Dr Vizender Sihag, Assistant Prof., DDE, GJUS&T	Special Invitee	

Functions of Centre for Internal Quality Assurance (CIQA)

Following are the main functions of CIQA:

- > To maintain quality in the services provided to the learners.
- > To ensure continuous improvement in the entire operations of the Higher Education Institution.
- ightharpoonup To identify the key areas in which the Higher Education Institution should maintain quality.
- > To disseminate information on quality assurance.
- > To device mechanisms for interaction and obtaining feedback from various Departments or Centres or Schools in the Higher Education Institution.
- > To suggest to the authorities of the Higher Education Institution, measures for qualitative improvement.
- > To ensure the implementation of its recommendations through regular monitoring.

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- > To ensure participation of all stake holders namely, learners, teachers, staff, parents, society, employers and Government in Quality Improvement Process.
- > To prepare Programme Project Report and ensure another launch of programme(s).
- > Collection, collation and dissemination of accurate, complete and reliable statistics about the quality of the programme(s).

Activities of Centre for Internal Quality Assurance (CIQA)

Following are the main activities of CIQA:

- ➤ Prepare a Programme Project Report (PPR) for each programme according to the norms and guidelines prescribed by the Commission and wherever necessary by the appropriate regulatory authority having control over the programme;
- > Get the Programme Project Report (PPR) approved by the appropriate authority of the Higher Educational Institution and the Commission before launch of the programme;
- ➤ Oversee the development of Study Learning Material (SLM), integration of Information and Communication Technology (ICT), setting up of Learning Centres and coordination with the parent institution and relevant Regulatory authorities;
- > Put in place monitoring mechanism to ensure the proper implementation of Programme Project Reports (PPRs);
- > Design annual plans for quality level enhancement at the level of the Higher Educational Institution and ensure their implementation;
- > Arrange for feedback responses from students, employers and other stakeholders for quality related institutional processes;
- > Develop quality benchmarks or parameters for the various academic and administrative activities of the Higher Educational Institution;
- > Obtain information from other Higher Educational Institutions on various quality benchmarks or parameters and best practices;
- > Organise workshops or seminars on quality related themes and Higher Educational Institution wise dissemination of the proceedings of such activities;
- > Suggest restructuring of programmes in order to make them relevant to the job market;
- > Develop and implement innovative practices in major areas leading to quality enhancement in services to the learners;

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- > Create learner centric environment rather than institution centric environment;
- ➤ Adopt measures to ensure internalisation and institutionalisation of quality enhancement practices through periodic accreditation and audit;
- ➤ Conduct or encourage system based research to bring about qualitative change in the entire system;
- ➤ Coordinate between the Higher Educational Institution and the Commission for various quality related issues or guidelines;
- > Record activities undertaken on quality assurance in the form of an annual report; and
- > To coordinate recognition and accreditation of the Higher Educational Institution.

J. PROGRAMME OUTCOMES:

The M. Com. is a highly prestigious business oriented programme of modern times, which prepares the students for taking up corporate and academic challenges in private and public sectors. Accordingly, they are imparted adequate conceptual knowledge and practical training in various functional areas of Commerce, Corporate Finance, Marketing, Human Resource Development. M. Com. at DDE is a two years programme divided into four semesters. The programme is aimed at following outcomes:

- PO1. Business Knowledge: Apply knowledge of business and trade theories and practices to solve business problems.
- PO2. Critical Thinking and Problem Analysis: Foster Analytical and critical thinking abilities for data based decision-making.
- PO3. Leadership and Business Solutions: Ability to develop Value based Leadership ability
 that offers business solutions.
- **PO4. Communication and Other Skills**: Ability to understand, analyze and communicate global, economic, legal, and ethical aspects of business.
- PO5. Team Dynamics and Teaching Skills: Ability to lead themselves and others in the
 achievement of organizational goals, contributing effectively to a team environment and
 teaching skills in higher education system.

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SAMPLE SELF-LEARNING MATERIAL (SLM) FOR

MASTER OF COMMERCE (M.Com.)

(Through Open Distance Learning)



<u>Directorate of Distance Education,</u> <u>Guru Jambheshwar University of Science & Technology,</u> <u>Hisar, Haryana</u>

(Established by State Legislature Act 17 of 1995 & Recognised by UGC Act 1956 u/s 12-B & 2 (F) ('A⁺', GRADE NAAC ACCREDITED)

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Service a 1 minutes

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Course: Business Environment			
Course Code: MC 102	Author: Mr. Ankit		
Lesson No. 5	Vetter: Dr. Rajiy Kumar		

ECONOMIC POLICY: FISCAL AND MONETARY

STRUCTURE

- 5.0 Learning Objectives
- 5.1 Introduction
- 5.2 Meaning of Economic Policy
- 5.3 Types of Economic Policy
- 5.4 Monetary Policy
 - 5.4.1 Objectives/Functions of monetary policy
 - 5.4.2 Types of monetary policy
 - 5.4.3 Techniques of monetary policy
- 5.5 Fiscal Policy
 - 5.5.1 Objectives/Functions of fiscal policy
 - 5.5.2 Types of fiscal policy
 - 5.5.3 Techniques of fiscal policy
- 5.6 Check Your Progress
- 5.7 Summary
- 5.8 Keywords
- 5.9 Self-Assessment Tests
- 5.10 Answer to Check Your Progress
- 5.11 References/Suggested Readings

5.0 LEARNING OBJECTIVES

After reading this lesson, one would be able to understand:

- Meaning of economic policy
- The various types of economic policy

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- The monetary policy objectives, functions, techniques, and New Monetary Policy of the India
- The fiscal policy objectives, functions, tools, and New Fiscal Policy of the India

5.1 INTRODUCTION

Every government main objective is to create appropriate economic policies that promote economic growth and development. The economic growth of country is affected by many factors. This required continuing effort from the government to mitigate the effect of factors. The economic growth and development is stimulated by government policies that encourage investment, foster technology development and create a capable workforce through education and training. The government frames various policies such as Industrial policy, EXIM policy, Foreign Investment policy etc., to promote economic development and growth of nation. The monetary policy and fiscal policy is one of them.

5.2 MEANING OF ECONOMIC POLICY

An economic policy is a course of action that is intended to influence or control the behaviour of the economy. Economic policies are typically implemented and administered by the government. Economic policy refers to the actions that governments take in the economic field. It covers the systems for setting interest rates and government budget as well as the labour market, national ownership, and many other areas of government interventions into the economy. Such policies are often influenced by international institutions like the International Monetary Fund or World Bank as well as political beliefs and the consequent policies of parties.

5.3 TYPES OF ECONOMIC POLICY

All the business activities and operations are influenced by the economic policy framed by the government. The government of a nation is takes various steps to promote economic development of a nation. Every government have to change their economic policies in the view of the changes takes place in economic and political scenario. Some of the important economic policies are:

Industrial Policy

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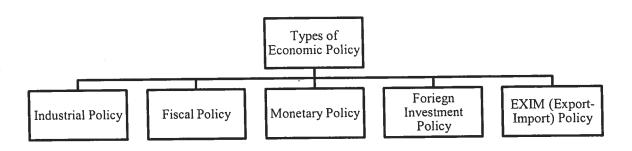
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- Fiscal Policy
- Monetary Policy
- Foreign Investment Policy
- EXIM (Export-Import) Policy

Following Figure 5.0 describe the important economic policy of India.

Figure 5.0 Types of Economic Policy



Industrial Policy: This policy of the government covers the all those policies, rules, principles, regulations and procedures which is helpful to direct and control the industrial enterprises of the country and shape the pattern of industrial development.

Fiscal Policy: It is the one of the important policy of the government. This policy includes the rules, regulations and procedures related to the government expenditure, taxation, deficit financing and public debt.

Monetary Policy: This policy is an integral part of general economic policy of the government. This policy influenced the supply of money, credit policy, and rate of interest of the nation. The monetary policy includes the all those interventions and activities that is aimed at the smooth supply of credit to the business and economy.

Foreign Investment Policy: It is the most important economic policy of the government. The foreign investment policy is aimed at the regulation and control of inflow and outflow of foreign currency in the various sectors of the economy. This policy is helpful in speeding up of industrial development.

EXIM (Export-Import Policy): EXIM policy is the one of the important economic policy of the government. This policy is aimed at the bridging the gap between the export and import of the

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country. On the basis of these policy, the government is announced the various duties/levies.

5.4 MONETARY POLICY

The government of a country is taking various steps to enhance the economic development of that country. Monetary policy is one of them. It is an important part of the general economic policy of the government. It's referred to that policy in which the central bank of the country controls and regulates the supply of money to achieve the economic objectives of growth and stability. In India, the Reserve Bank of India (RBI) is the main regulating, formulating, and implementing authority of the monetary policy. It is mandatory under the RBI Act, 1934. Monetary policy is regulated the money supply in the economy. The money supply are consists of currency with the public, bank deposits, and other deposits with the RBI. When the public is depositing their savings with the banks, a part of the deposit is retained by the bank in the form of cash and the remaining part is utilized for credit creation by providing loans to the public. This credit creation also becomes part of the money supply. The monetary policy is also regulates the banking system of the economy to meet its credit needs.

Some of the important definitions of monetary policy are:

According to **D.C. Rowan**, "The monetary policy is defined as discretionary act undertaken by the authorities designed to influence (a) supply of money, (b) cost of money or rate of interest, and (c) the availability of money for achieving specific objectives."

Johnson defines monetary policy "as policy employing central bank's control of the supply of money as an instrument for achieving the objectives of general economic policy."

G.K. Shaw defines it as "any conscious action undertaken by the monetary authorities to change the quantity, availability or cost of money."

In short, monetary policy is referred to them macroeconomic policy that is involved money supply management, interest rate, and demand side framed by the central bank to achieve the macro level economic objectives of inflation, consumption, liquidity and growth.

5.4.1 Objectives/Functions of Monetary Policy:

Following are the main objectives of monetary policy in the India:

• To Regulate Money Supply: The monetary policy is framed to regulate the money supply in the economy through the expansion and contraction credit policies. The credit expansion means, by giving more loans, money supply ean be increased and credit contraction means,

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by giving fewer loans, money supply can be decreased. The main objective of the monetary policy is control and regulates the money supply in the economy according to their needs.

- To Attain Price Stability: Price stability is the one of the major objective of monetary policy in India. Price level is affected by the contraction or expansion of money supply in the economy. It is helpful in control over inflation. This policy regulate the money supply to maintain price stability.
- To Promote Economic Growth: The Economic growth of the country is the one of the main objective of the monetary policy. The monetary policy is helpful in providing necessary and adequate supply of money and credit to the important sectors of the economy for the economic growth of the country.
- To Promote Saving and Investment: The monetary policy is helpful in promotion of saving and investment by regulating and controlling the rate of interest on deposits with the banks. This policy is encouraged to the public to save and invest more by offering higher rate of interest on deposits. It is also discouraged saving and investment by lowering the rate of interest on deposits according to changing economic conditions.
- To Control Business Cycles: Boom and depression are the main phases of the business cycle. The monetary policy is a economic tool in the hand of the RBI to curb the boom and depression conditions. In the period of boom, credit is contracted to reduce the money supply in the economy and in the period of depression, credit is expanded to increase the money supply in the economy. It is helpful in controlling the inflation and promoting aggregate demand of the economy.
- To Achieve Stability in External Value of Rupee: The external value of rupees means the
 exchange rate of Indian rupees in terms of major foreign currencies. If the fluctuations in the
 exchange rate is high than the RBI has to be takes necessary action to maintain the external
 value of the rupees by regulating and controlling the demand and supply of foreign currency.
- To Manage Aggregate Demand: The monetary authority is tried to keep the equilibrium between aggregate demand and supply of goods and services. If aggregate demand is to be increased than credit is expanded and interest rate is lowered down. Because of lowered interest rate more people takes loan to buy goods and services which is increased the aggregate demand in the economy.

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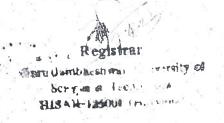
- To Provide more Credit to Priority Sector: It is the one of the major objective of monetary policy. According to this objective, monetary policy is aimed at providing more funds to priority sector by lowering interest rates for these sectors. The priority sectors include the agriculture, small scale industry, weaker section of the society etc.
- To Promote Employment: It is the important objective of the monetary policy. Under this policy, concessional loans are provided to the productive and priority sectors. It is helpful in promote employment.
- To Regulate and Expand Banking: RBI (Reserve Bank of India) is regulates the banking system of the Indian economy. RBI is expanded banking to all parts of the country. The RBI is issued the directive or guidelines to different banks to setup rural branches to promote agricultural credit.
- To Promote Exports and Substitute Imports: It is the most important objectives of the monetary policy in India. The monetary policy through its measures encouraged the export oriented and import substitution industries by providing concessional loans to such industries. It is helpful to improve the balance of payment position.
- To Monitor Global and Domestic Financial Conditions: The monetary policy of any country is aimed at regularly monitoring the global and the domestic financial conditions of that country so that timely policy adjustment can be done. It will help to minimize the adverse effect of global or financial crises.

5.4.2 Types of Monetary Policy

The monetary policy is a programme of action undertaken by the monetary authority or central banks and other regulatory bodies to control and regulate the money supply and a flow of credit in the economy. In simple words, the process by which the monetary authority, generally the central bank controls the money supply in the economy is called as monetary policy. There are two types of monetary policy:

- Expansionary monetary policy
- Contractionary monetary policy

Expansionary Monetary Policy: This policy is also known as 'Easy monetary policy'. This policy is adopted when the economy is in a problem of recession and unemployment. The main objective of this policy is to increase the aggregate demand by cutting down the interest rates and increasing the money supply in the economy. The money supply can be increased by the



purchase or buy of government securities and lower the interest rate and reserve ratio. With the help of this policy, consumer spending and borrowing to the private sector are increased, unemployment reduced and the overall economy grows.

Contractionary Monetary Policy: This policy is also known as 'Tight monetary policy'. This policy is applied when inflation and the economy it needs to be slow down by cutting the money supply. Inflation is increased the money supply and consumer spending on goods and services in the economy. So, the main objective of contractionary monetary policy is to decrease the unwanted money supply and consumer spending on goods and services. The supply of money and consumer spending in the economy can be decreased by the sale of government securities and higher interest rates and reserve ratio.

5.4.3 Techniques of Monetary Policy

Beside currency, credit is an important component of the money supply and money circulation in the economy. RBI is the main regulation authority of monetary policy in India. The RBI is regulates the supply of credit in the economy with the help of various quantitative and qualitative techniques of credit control. Control of credit is one of the main objectives of monetary policy of India. It means increase or decrease of the flow of credit in the economy. Reserve bank of India (RBI) as a central bank is adopts all those techniques for the control of credit which central banks in other countries do. These instruments or techniques may be classified as:

- Quantitative Credit Control
- Qualitative Credit Control

Quantitative Credit Control:

This type of control regulates the total quantity of credit in the economy. This type of control is not for a specific sector or product. This technique is based on the principle of 'Non Discriminatory'. These techniques are non-discriminatory for all sectors/products. Thus, to control the total quantum of credit, Reserve bank of India has been adopted the following techniques:

1) Bank Rate: It is also known as discount rate. It is the rate at which RBI discounts or rediscounts the bills of commercial banks. If the bank rate is increased, higher rate of interest on loans given by bank to the public. It is because of RBI charges higher discount rate while discounting bills of commercial banks. Higher bank rate will decrease the credit in the economy i.e., public will take lesser loans because of higher rate of interest on loans.

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Up to the year 1973, bank rate was ranging from 1% to 7%. In seventh plan period it was at 12%. Then, RBI started lowering bank rate for promoting credit in the economy. Currently in November 2019, it is 5.40% in India.

- 2) Statutory Liquidity Ratio (SLR): The Statutory Liquidity Ratio (SLR) means a certain percentage of total deposits is to be kept by the banks with himself in the form of liquid assets. The liquid assets here include government securities, treasury bills and other securities notified by RBI. If the SLR is high, then banks have to be keeping more part of securities in specified securities and banks have less surplus funds for granting loans. Similarly, if the SLR is low, then banks have to keep less part of deposits in specified securities and banks have more funds for granting loans. SLR is fixed by RBI usually ranging between 20.75% to 39%. Currently in November 2019, it is 18.50% in India.
- 3) Open Market Operations (OMO): Open market operations means that the bank control the flow of credit through the sale and purchase of securities in the open market. When the securities are purchased by central bank, then RBI makes payment to commercial banks and public. So, now public and commercial bank have more money which is increased the money supply for the expansion of credit in economy. When securities are sold by central bank, then public and commercial banks make payment to RBI is reduced their credit creation capacity.
- 4) Cash Reserve Ratio (CRR): Reserve bank of India controls the Cash Reserve Ratio of commercial banks. It is mandatory for commercial banks to maintain this ratio. It is minimum cash reserve that every commercial bank has to be maintained with the current account of central bank (RBI). If the banks increases CRR, then banks will have to maintain more cash holdings with the RBI. It will reduce their loan giving capacity. Similarly, if RBI decrease the CRR, then the banks have to maintain low cash holding with the RBI. It will increase their loan giving capacity. In 1993, CRR was very high at 14%. Currently in November 2019, it is 4% in India.
- 5) Repurchase Auction Rate (Repo Rate): It refers to that interest rate at which commercial banks can borrow funds from the RBI. The increase in repo rate will decrease credit because of commercial banks get funds from RBI at higher rate of interest. In October 2016, the Repo rate was 6.25%. Currently in November 2019, it is 5.15% in India.

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- 6) Reverse Repurchase Auction Rate (Reverse Repo): Repo and Reverse repo are the main monetary policy rates. Reverse repo rate means the interest rate given by RBI on deposits made by commercial banks with it. Increase in reverse repo rate will also decrease the credit because of commercial banks are more inclined to deposit their funds with RBI to earn high rate of interest. Depositing more funds with RBI by commercial bank reduced their loan giving capacity. In October 2016, reverse repo rate was 6.25%. Currently in November 2019, it is 4.90% in India.
- October, 1960. Under this programme, the RBI fixes credit quota for various commercial banks. If the commercial banks borrowed loans from RBI within their quota limit, they are charged interest rate at repo rate. But, if commercial banks borrowed loans more than their quota limit, they are charged higher interest rate then repo rate. So, RBI by changing quotas of commercial banks and interest rate for lending can expand or contract credit. If the RBI reduces quotas or increases interest rates, it will contract the credit and if RBI increases quota or reduces interest rates it will expand credit.
- 8) Liquidity Adjustment Facility (LAF): The liquidity adjustment facility (LAF) is a monetary policy tool introduced in 1998 on the recommendation of Narsimha Committee on banking sector reforms used by the Reserve bank of India (RBI). This facility is allowed to the bank borrow funds through repurchase agreements (Repos) and to make loan to RBI through reverse repurchase agreements (Reverse Repos). This arrangements is manages the liquidity pressures and assure the stabilization in the financial markets. LAF is controlled the inflation rate by increasing and decreasing the money supply in the economy.
- 9) Marginal Standing Facility (MSF): The MSF is introduced by the RBI in its monetary policy for 2011-12 after successfully test firing it from December 2010 onwards. MSF is the rate at which the banks are able to borrow overnight funds from RBI against the approved government securities. The main motive of the MSF is to control the overnight volatility in the inter-bank rates. The rate of interest on MSF is above 100 bps above the repo rate. The bank can borrow up to 1% of their time deposits and time liabilities (NDTL) from this facility. This means that the difference between the repo rate and MSF rate is 200 bps (basis points). So, the repo rate will be in the middle and the reverse repo rate will be 100 bps

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below it and the MSF is 100 bps above it. Thus, if Repo rate is X% then reverse repo rate is X-1% and MSF is X+1%. Currently in November 2019, the MSF rate is 5.40% in India.

10) Market Stabilization Scheme (MSS): This instrument was introduced in the year 2004. The main motive behind Market Stabilization Scheme (MSS) is to withdraw excess liquidity or money by selling government securities from the economy. In this scheme, surplus liquidity of an enduring nature arising from large capital inflows is absorbed through the sale of short dated government securities and treasury bills. The cash proceeds from the process is kept in a separate government account with the RBI.

Qualitative Credit Control:

This technique is also known as Selective Credit Control Technique. It is discriminatory in nature as it is not applicable to the whole economy. It refers to regulating and controlling the credit to a specific sector/commodity/area. The Banking Regulation Act, 1949 has conferred upon the RBI rights of selective credit control. Following techniques of qualitative credit control are generally adopted:

- 1) Change in Margin Requirement on Loans: The margin is the difference between loan value and market value of security fixed by the RBI. The margin requirement is different for different types of loans. If the margin percentage is more, then fewer loans will be given for a certain value of a security and vice-versa. For example, if margin requirement is 20% then bank will give maximum 80% of a market value of security as loan.
- 2) Moral Persuasion: RBI can also exercise moral influence upon the member banks. RBI is convinced commercial banks to curb loan to unproductive sectors. RBI is also holds meeting with the member banks to effectively control the monetary system of country. It is advised the member banks to give more credit to priority sectors i.e., agriculture, small industries etc. RBI is also Counselled the member bank to invest more and more in government securities and increases their liquidity.
- 3) Credit Authorisation Scheme: This scheme was introduced by RBI in 1965. Under this scheme, the member banks were take authorisation of RBI before sanctioning any fresh loan of Rs. 1 crore or more to any single party. The amount of this limit has been changed to Rs. 6 crore in 1986. This scheme was abolished by RBI in 1988.
- 4) Credit Monitoring Arrangements: Under these arrangements, RBI is monitors and scrutinize all sanction of bank loan exceeding Rs. 5 Crore to any single party for working

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capital requirement. The RBI is scrutinizing all such loans after these are sanctioned by commercial banks.

- 5) Direct Action: According to the Banking Regulation Act, 1949 Reserve bank has the right to stop any commercial bank from doing any type of transaction. In case of defiance of the order of the RBI, direct action can be taken against the member bank by RBI. It can stop giving loans to member bank and closure of member bank to the central government under pressing conditions.
- 6) New Loan System for Delivery of Bank Credit: It is introduced in 1995. It is applicable on borrowers who demand loan exceeding Rs. 20 Crores. Under this scheme, maximum 75% of loan demanded will be sanctioned as long term loan and remaining 25% will be allowed only for short period for working capital requirements.
- 7) Ceiling on Loans: The ceiling on loan for any single project from the banking sector has been fixed at Rs. 500 Crores. In simple words, banks can sanction maximum loan of Rs. 500 crores for a single project.

5.5 FISCAL POLICY

Fiscal Policy's first word Fiscal is taken from French word 'Fisc' which means treasure of government. Fiscal policy concerns itself with the aggregate effect of government expenditure and taxation on income, employment and production. It refers to the instruments by which a government tries to regulate or modify the economic affairs of the economy keeping in view certain objectives. Fiscal policy is a part of general economic policy of the government which is primarily concerned with the budget receipts and expenditures of the government. All welfare projects are completed under this policy. It becomes the prime duty of government to frame fiscal policy. By making this policy, Govt. collects money from his different resources and utilizes it in different expenditure. This policy is related to the income and expenditure of the government. This policy is also known as budgetary policy, income and expenditure policy, or tax and expenditure policy. It is defined as that part of government economic policy which is deals with taxation, government expenditure, borrowings, deficit financing and management of public debts in an economy. The fiscal policy has a great bearing on economic equality and the economic development of the country. Some main definitions of fiscal policy are given below:

In the words of Arthus Smithies, "Fiscal policy is a policy under which the government uses its

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expenditure and revenue programs to produce desirable effects and avoid undesirable effects on the national income, production, and employment."

According to A.G. Buchler, "Fiscal policy means the use of public finance or expenditure, taxes, borrowings, and its administration to further our national income objectives."

In the words of G.K. Shaw, "Fiscal policy means any decision to change the level, composition or timing of government expenditure or to change the rate and structure of the tax."

5.5.1 Objectives/Functions of Fiscal policy

Followings are the main objectives/functions of fiscal policy:

- 1. Achieve Full Employment Level: It is the main function or objective of the government fiscal policy. The government is making every possible effort to increase the employment opportunity through effective fiscal measures. The main motive of the fiscal policy measures is to avoid unemployment and to achieve full employment level in the economy. To fulfil this motive, government has to be invested on social and development projects such as investment in various rural welfare programmes to solve problems in rural areas. This is helpful in creating employment opportunities and increasing productive efficiency of the economy.
- 2. Maintain Price Stability: Price stability is another prime function or objective of a sound fiscal policy. This objective implies the maintenance of full employment with relative price stabilization. The fluctuations in the price level may upset all mathematics of economic calculations. For instance, a sharp fall in the general price level reducing the possibility of attaining the full employment. Similarly, a sharp rise in general price level leads to maladjustment in production besides hindering capital accumulation and breeding uncertainty. In short, economic growth and stability is twin objectives pursued by the sound fiscal policy.
- 3. Effective Mobilisation of Resources: The principle function or objective of fiscal policy is to ensure rapid growth and development of economy. This objective of growth and development is fulfilled by the effective mobilisation of resources. The central and state governments in India are used fiscal policy to mobilise resources. The government of India mobilised resources by way of direct taxes as well as indirect taxes through effective fiscal policies. It is because, in India, the most important source of resource mobilisation is

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- taxation. The resources can also be mobilised through public savings by reducing government expenditure and increasing surpluses of public sector enterprises.
- 4. Reduction in Inequalities of income and wealth: The fiscal policy main function is achieving equity or social justice by reducing income disparity between different sections of the society. This policy is helpful in reduction of inequalities of income and wealth. The government is mobilised resources from rich class to poor class by using the progressive income tax, high rate of taxes on luxuries, wealth tax etc.. These resources are used for the welfare scheme of the poor section of the society.
- 5. To Control Inflation: It is one of the most important function or objectives of fiscal policy. The fiscal policy is an important tool to counter the negative impact of inflation. The government fiscal policy is increased the aggregate demand of economy by providing tax reliefs and increasing public expenditure. It is helpful in controlling negative effect of inflation.
- 6. Increasing National Income: It is the one of the important function of the fiscal policy. This policy is helpful in bring out the desired result in the economy. When the government wants to increases its income of the country then it increase the direct and indirect tax rates in the country.
- 7. Reducing the Deficit of Balance of Payment (BOP): The one of the important function of fiscal policy is reducing the deficit of balance of payment (BOP) of the government. The government is gives incentives to the exporters to boost up the export of country. Similarly, the government is used the import control measures to curb the import of the country. The combined effect of these measures is helpful in reduction of balance of payment (BOP) deficit.
- 8. Development of Infrastructure: The main and most important function of fiscal policy of the government is the speed up the economic growth of the country. When the government of the concerned country is spend money on the projects like railways, schools, dams, electricity, roads etc to increase the welfare of the citizens, it improves the infrastructure of the country. A improved infrastructure is key to the further speed up of economic growth of the country.
- 9. Balanced Regional Development: It is the most important function or objective of fiscal policy of the government. The government are invested in various projects like building up

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dams on rivers, electricity, schools, roads, industrial projects etc. to mitigate the regional imbalances in the country. This is done with the help of public expenditure.

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10. Earn Foreign Exchange Earnings: It is the one of the important function or objective of the fiscal policy. When the central government of the country gives incentives like, exemption in custom duty, concession in excise duty while producing things in the domestic markets, it motivates the foreign investors to increase the investment in the domestic country.

5.5.2 Types of Fiscal Policy

There are mainly two types of fiscal policies. Both of these policies is worked for the overall growth of the economy. But the government use one of them at times when one is required more than the other.

- Expansionary fiscal policy
- Contractionary fiscal policy

Expansionary fiscal policy: The expansionary fiscal policy is quite popular among people. In this policy, consumers get more money in their hands to spend and as a result, their purchasing power increases drastically. In this policy, the government either spends more on public works, provides benefits to unemployed or cuts taxes. The idea behind this is to put more money into consumers' hands, so they spend more. This policy is generally used to give a boost to the economy. Also, during the recession period when the growth in national income is not enough to maintain the current living of the population a tax cut and an increase in government spending would boost economic growth and decrease the unemployment rates. The expansionary policy isn't easy to apply for the government because the government is always on the pressure to keep a balanced budget.

Contractionary fiscal policy: The second type of fiscal policy is the contractionary fiscal policy which is the opposite of the expansionary fiscal policy. That means the objective of the contractionary fiscal policy is to slow down economic growth and stamp out inflation. The longterm impact of inflation can damage the standard of living of people. In this policy, the government spending is decreased and the rate of taxes is increased as much as possible so that the purchasing power of the consumer gets reduced. This policy is taking away money from the hands of the consumers that can be dangerous for businesses. They will not be able to sell off goods and services. As a result, the growth of the economy is slowing down which can be

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boosted up by taking the expansionary fiscal policy.

5.5.3 Techniques of Fiscal Policy

Fiscal policy deals with the taxation and expenditure decisions of the government. Some of the major techniques of fiscal policy are as follows: Taxation, Public Expenditure, public revenue, Public Debt, and Fiscal Deficit in the economy.

- Taxation policy
- Government Expenditure Policy
- Deficit Financing Policy
- Public Debt Policy

Taxation Policy:

Taxation policy is one of the powerful instruments of fiscal policy. In India, taxation policy is related to alterations in rates of direct tax and indirect tax. Direct tax is those taxes that are paid directly by the public to the government. In the same way, indirect tax is those taxes that are paid indirectly by the public to the government. Tax is the main source of earning of the Indian government. Every year the Indian government passes the finance bill in which the government determines the tax rates. The government can increase or decrease tax rates. For a good taxation policy, there should maintain a proper balance between direct and indirect tax rates. If the tax rate is increased by the government, more burdens will be on the public and it will reduce the purchasing power of the public. In the same way, if the tax rate is decreased by the government, fewer burdens will be on the public and it will increase the purchasing power of the public.

Government Expenditure Policy:

This policy is also known as public expenditure policy. The government expenditure or spending is very important for the economic growth of country. The government expenditure is classified as Revenue and Capital expenditure. The revenue expenditure is a short term and recurring nature expenditure. The purpose of such expenditure is not to build up any capital asset, but to ensure normal functioning of government machinery. The examples of revenue expenditure are salaries of government employees, interest payment on loans taken by the government, pensions, subsidies, grants, rural development, education and health services, etc. On the other hand, capital expenditure is long term and non-recurring nature expenditure. The purpose of such expenditure is built up capital assets for the economy. For example, construction of building,

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dams, bridges, schools, colleges etc. are example of capital expenditure. The following table differentiate between revenue and capital expenditure:

Difference between Revenue and Capital Expenditure

Revenue Expenditure	Capital Expenditure
It is incurred for normal running of	It is incurred for acquisition of capital
government departments.	assets.
It does not result in creation of assets	 It results in creation of assets and
and reduction of any liability.	creation of liability.
It is recurring in nature.	It is non-recurring in nature.
• It is short period expenditure.	 It is long period expenditure.
Salaries of government employees,	 Construction of buildings, roads,
interest payment on loan of government	dams, bridges, hospitals, schools,
employee, pension, grants, subsidies	colleges, universities etc. are example
etc. are example of revenue	of capital expenditure.
expenditure.	

Government expenditure is a useful economic policy tool. There are two types of fiscal policy: expansionary fiscal policy, and contractionary fiscal policy. Expansionary fiscal policy is used by governments to stimulate the economy during recession. For example, an increase in government expenditure and a decrease in tax directly increase the demand for goods and services, which increases output and employment. On the other hand, contractionary fiscal policy is used by governments to cool down the economy during inflation. For example, a decrease in government expenditure and an increase in tax decrease in demand for goods and services, which decreases output and employment. The government expenditure is changed either via Automatic stabilization or Discretionary stabilization.

Automatic Stabilization: It is used when existing policies automatically change government expenditure or taxes in response to economic changes, without the additional passage of laws.

Discretionary Stabilization: It is used when a government takes action to change government expenditure or taxes in direct response to changes in the economy by the passing of additional laws.

Deficit Financing Policy:

Deficit Financing is referred to financing the budgetary deficit. It is a budgetary situation where

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expenditure is higher than the revenue. It is a practice adopted for financing the excess expenditure with outside resources. The expenditure revenue gap is financed by either printing of currency or through borrowing. In India, expenditure revenue gap is financed by taking loan from Reserve Bank of India (RBI). The Reserve Bank of India (RBI) gives this loan by issuing new currency notes. Nowadays, most governments both in the developed and developing world are having fiscal deficit budgets and these deficits are often financed through borrowings. In India, the size of fiscal deficit is leading deficit indicator in the budget. The following table shows the various indicators of deficit in budget:

Various Deficit Indicators in Budget

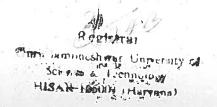
Budget Deficit	Total expenditure – Total receipts
Revenue Deficit	Revenue expenditure – Revenue receipts
Fiscal Deficit	Total expenditure – Total receipts excepts borrowings
Primary Deficit	Fiscal deficit – Interest Payment
Effective Revenue Deficit	Revenue deficit – Grant for creation of capital assets
Monetised Fiscal Deficit	That part of fiscal deficit covered by borrowing from the RBI

The deficit financing is a type of forced saving. Through deficit financing, the government is arranged the funds for economic growth. Money supply is increased through deficit financing which leads to fall in the money value. Fall in the money value in turn leads to rise in the price level or inflation. So, people get the less number of goods in exchange for the same amount of money than before. Deficit financing should be kept within safe limits because of increased in price level or inflation. There are some situations when deficit financing becomes absolutely essential. In other words, there are various purposes of deficit financing. These are:

- To finance defence expenditures during war
- To lift the economy out of depression so that incomes, employment, investment, etc., all rise
- To activate idle resources as well as divert resources from unproductive sectors to
 productive sectors with the objective of increasing national income and, hence, higher
 economic growth
- To raise capital formation by mobilizing forced savings made through deficit financing
- To mobilize resources to finance massive plan expenditure.

Public Debt Policy:

The government needs lot of funds for the economic development of the country. No



government can mobilize so many funds by way of taxes alone. There are many reasons for this. They are:

- Most of the population is poor
- Adverse effect of more taxes on saving and investment
- Taxes are levied only up to taxable capacity of the people

So, it is necessary for government to mobilize resources for economic development by resorting to public debt. Public debt also known as government debt is obtained from two kinds of sources:

- 1. Internal Debt or Domestic Debt
- 2. External Debt or Foreign Debt

Internal Debt: It is also known as domestic debt. Internal debt or domestic debt is that part of the total government debt that is owed to lenders within the national boundary of the country. It is the money that is government borrows from its citizens by issuing the treasury bills (T-bills) and government bonds. These bills and bonds are traded in the market known as the Gilt market.

External Debt: It is also known as foreign debt. External debt or foreign debt is that part of the total government debt that is owed to foreign lenders outside to the national boundary of the country. The outsider lenders can be foreign governments, international financial institutions such as World Bank and Asian development bank, corporate and foreign private households. The external debt can be of several types such as multilateral, bilateral, IMF loans, trade credits, external commercial borrowings, and Non-Resident Indian (NRI) deposits. India cannot meet its financial requirements from internal debt alone. It has to borrow from abroad as well.

5.6 CHECK YOUR PROGRESS

Multiple Choice Questions:

- 1. Bank rate is the rate at which the Reserve Bank of India provides loans to:
 - (a) Public Sector Undertakings
 - (b) Commercial Banks
 - (c) Private Corporate Sector
 - (d) Non-Banking financial Institution
- 2. If the interest rate decreases in an economy, it will

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- (a) Decrease the investment expenditure in the economy
- (b) Increase the loan repayment by the government
- (c) Increase the consumption expenditure in the economy
- (d) Increase the total savings in the economy
- 3. The cost of bank credit is determined on the basis of base rate and all bank loans are given at a rate equal to or higher than the base rate. Of the following, who determines this base rate?
 - (a) It is fixed by the Reserve Bank of India
 - (b) It is determined by the Ministry of Finance
 - (c) It is determined by market forces of supply and demand for credit
 - (d) It is determined by the bank concerned
- 4. When the Reserve Bank of India announces an increase in the cash reserve ratio, what does it mean?
 - (a) The commercial banks will have less money to lend.
 - (b) The union government will have less money to lend:
 - (c) The union government will have more money to lend.
 - (d) The commercial banks will have more money to lend.
- 5. The banks are required to maintain a certain ratio between their liquid assets and total deposits. This ratio is called
 - (a) CRR (cash reserve ratio)
 - (b) SLR (statutory liquidity ratio)
 - (c) CAR (capital adequacy ratio)
 - (d) CLR (central liquid reserve)
- 6. Fiscal policy in India is formulated by
 - (a) Reserve Bank of India
 - (b) Planning Commission
 - (c) Finance Ministry
 - (d) Securities and Exchange Board of India
- 7. If we deduct grants to states for the creation of capital assets from revenue deficit, we arrive at
 - (a) Primary Deficit
 - (b) Net Fiscal Deficit

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- (c) Budgetary Deficit
- (d) Effective Revenue Deficit

8. Which one of the following is a capital receipt in government budget?

- (a) Interest receipts on loans given by the government to other parties
 - (b) Dividends and profits from public sector undertakings
 - (c) Borrowing of the government from public
 - (d) Income tax receipts

9. Fiscal deficit implies:

- (a) Total expenditure (Revenue receipts + Recovery of loans + Receipts from disinvestment)
- (b) Total expenditure Total receipts from all sources, including borrowings
- (c) Total expenditure (Revenue receipts + Fresh loans)
- (d). Total expenditure Disinvestment receipts

10. Every year the Economic Survey is compiled by:

- (a) Office of Economic Advisor
- (b) Central Statistical Office (CSO)
- (c) National Sample Survey Organisation (NSSO)
- (d) Department of Economic Affairs

5.7 SUMMARY

Every government main objective is to create appropriate economic policies such as industrial policy, EXIM policy, foreign trade policy, monetary policy and fiscal policy to promote economic growth and development. All the business activities and operations are influenced by the economic policy framed by the government. An economic policy is a course of action that is intended to influence or control the behaviour of the economy. The government is taking various steps to enhance the economic development of a country. Monetary policy and Fiscal policy is one of them. They are important part of the general economic policy of the government. Monetary policy is referred to that policy in which the central bank of a country controls and regulates the supply of money through quantitative and qualitative techniques. The quantitative techniques include the bank rate, open market operations, statutory liquidity ratio, cash reserve ratio, repo and reverse repo rate. The qualitative techniques includes the direct action, moral suasion, and changes in margin requirement. On the other hand, fiscal policy is referred to that



part of a government overall economic policy that is deals with the taxation, public debt, government expenditure, and deficit financing policy.

5.8 KEYWORDS

- Economic Policy: An economic policy is a course of action that is intended to influence or control the behaviour of the economy. Economic policies are typically implemented and administered by the government.
- Cash Reserve Ratio (CRR): It is minimum cash reserve that every commercial bank has to be maintained with the current account of central bank (RBI).
- Statutory Liquidity Ratio (SLR): The Statutory Liquidity Ratio (SLR) means a certain percentage of total deposits are to be kept by the banks with him in the form of liquid assets.
- Open Market Operations (OMO): Open market operations mean that the bank controls the flow of credit through the sale and purchase of securities in the open market.
- Bank Rate: It is the rate at which RBI discounts or rediscounts the bills of commercial banks.
- Repo Rate: It refers to that interest rate at which commercial banks can borrow funds from the RBI.
- Reverse Repo Rate: Reverse repo rate means the interest rate given by RBI on deposits made by commercial banks with it.

5.9 SELF-ASSESSMENT TESTS

- 1. What do you mean by economic policy? Discuss the various types of economic policy.
- 2. What do you mean by fiscal policy? Explain the techniques of fiscal policy.
- 3. Explain public expenditure policy and public debt policy as a tool of fiscal policy.
- 4. What is fiscal policy? What is the main objective or functions of the fiscal policy?
- 5. What is monetary policy? What are the main objectives or functions of monetary policy?
- 6. What do you mean by monetary policy? Explain the techniques of monetary policy
- 7. What do you mean by fiscal and monetary policy? Explain the various types of fiscal and monetary policy.
- 8. Explain the fiscal deficit and taxation policy as a tool of fiscal policy.



- 9. Discuss about quantitative and qualitative techniques of monetary policy.
- 10. What is monetary policy? Differentiate between quantitative and qualitative techniques of monetary policy.

5.10 ANSWER TO CHECK YOUR PROGRESS

Answer to Multiple Choice Questions:

- 1. (b) Commercial Banks
- 2. (c) Increase the consumption expenditure in the economy
- 3. (d) It is determined by the bank concerned
- 4. (a) The commercial banks will have less money to lend
- 5. (b) SLR (statutory liquidity ratio)
- 6. (c) Finance Ministry
- 7. (d) Effective Revenue Deficit
- 8. (c) Borrowing of the government from public
- 9. (a) Total expenditure (Revenue receipts + Recovery of loans + Receipts from disinvestment)
- 10. (d) Department of Economic Affairs

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Course Name: Management Process and Organisational Behaviour Semester: 1st

Couse Code: MC 101

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19	Learning and Values
20	Interpersonal and Group dynamics
21	Transactional Analysis
22	Emotional Intelligence
23	Organizational Change
24	Organizational Development
25	Conflict Management and Stress Management

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HISAN-125001 (Harvana)

Course Name: Business Environment

Couse Code: MC 102

Semester: 1st

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Lesson No.	Lesson title
1	Business Environment and Types of Business Environment
2	Environment Scanning and Risk Assessment
3	Economic System
4	New Industrial Policy-1991 and Recent financial and economic reforms in India
5 ·	Economic Policy: Fiscal and Monetary
6	Kinds of Business Environment and Emerging Sector of Indian Economy
7	Privatization
8	Public Private Partnership
9	Challenges and Opportunities in Rural Sector
10	Globalisation
11	Global Business Environment
12	Challenges and Opportunities of MNC'S in India
13	Foreign Investment In India
14	Indian Foreign Trade And Its Impact On Balance of Payment
15	Exchange Rate Movements And India's Competitiveness in The World
	Economies
16	World Trade Trends and EconomicIntegration
17	Contemporary Issues of Business Environment
18	Legal environment of business: consumer protection act, competition act, foreign exchange management act, and environment protection act

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HISAN-1230

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Semester: 1st

Course Name: Managerial Economics Couse Code: MC 103

Table of Content

Lesson No.	Lesson title
1	Introduction to Economic Analysis
2	Fundamental of Economic Concept
3	Law of Demand
4	Elasticity of Demand
5	Cardinal Analysis
6	Ordinal Analysis
7	Cost Concept
8	Production Functions
9	Price Determination: Perfect Competition and Monopoly
10	Price Determination: Monopolistic Competition and Oligopoly
11	Bamoul's Theory of Sales Maximization
12	Managerial Theory
13	Behavioural Theory
14	National Income Concepts
15	Measurement of National Income

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Course Name: Financial Accounting and Reporting Couse Code: MC 104

Semester: 1st

Table of Content

Lesson No.	Lesson title
1	Introduction to Accounting
2	Theory base of Accounting
3	Accounting Cycle
4	Accounting Process
5	Financial Statements of Trading Concern
6	Framework of Financial Statements of Corporate Entities
7	Quality of Earnings

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den Jambheshwar University in Schras & feehnolog 413414-125000 (Harrana)

Course Name: Business Statistics

Couse Code: MC 105

Semester: 1st

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Lesson No.	Lesson title
1 .	An Introduction to Business Statistics
2	An Overview of Central Tendency
3	Dispersion and Skewedness
4	Probability Theory
5	Probability Distributions-I
6	Probability Distributions-II
7	Sampling and Sampling Methods
8	Sampling Distributions
9	Statistical Estimation .
10	Testing of Hypotheses
11	Non-Parametric Tests
12	Correlation Analysis
13	Regression Analysis
14	Analysis of Time Series
15	Index Number
16	Statistical Quality Control

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Course Name: E-Commerce

Couse Code: MC 106

Semester: 1st

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Lesson No.	Lesson title
1	E-Commerce: Concept, WWW and Application Services
2	Models of E Commerce
3	Electronic Data Interchange: Benefits, Components and Security Issues
	in E-Commerce
4	Introduction to Internet: Concept, Applications and Internet Services
5	IT and Business: Concepts of Data, Information Technology and Effect
	of IT on Business
6	E-Commerce and Banking Industry
7	E-Commerce and Retail Industry
8	E-commerce and Online Publishing
9	Digital Copyright
10	Intranet And Supply Chain Management
11	Intranets And Customer Asset Management
12	Intranet And Manufacturing
13	Intranet And Corporate Finance

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Course Name: International Business

Couse Code: MC 201

Semester: 2nd

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	15	Annual Transcription of the Control
UNCTAD and Regional Economic Cooperation	16	Multilateral regulation of trade and investment: IMF, World Bank, WTO,
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Course Name: Financial Management Couse Code: MC 202

Semester: 2nd

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Lesson	Lesson title
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1	Introduction to Financial Management and Risk-return framework for financial
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2	Time Value of Money
3	Capital Budgeting Decisions
4	Capital Structure Decisions
5	Optimum Capital Structure
6	Sources of Long term Finance
7	Sources of Short term Finance
8	Working Capital Management
9	Inventory Management
10	Receivable and Cash Management
11	Financing of Working capital
12	Dividend Policy
13	Theories and Types of dividend Policy
14	An overview of Corporate Restructuring

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Course Name: Marketing Management Couse Code: MC 203

Semester: 2nd

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Lesson	Lesson title
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1	Marketing: Nature, Scope, Concept and Corporate orientations towards the
	marketplace
2	Marketing Environment and Environment Scanning
3	Marketing Research and Marketing Information System
4	Understanding Consumer and Industrial Markets
5	Market segmentation, Targeting and Positioning
6	Product decisions: Product concept and classification, Product mix and Product
	life cycle
7	Product decisions: New Product Development
8	Product branding, Packaging and Labelling decisions
9	Pricing Methods and Strategies
10	Marketing Communication and promotion decisions: Factors influencing
	promotion mix and Advertising decisions
11	Sales force management; Sales promotions; Personal Selling; Publicity and
	Public relations
12	Channel Management
13	Marketing implementation and control
14	New issues in marketing - Globalization, Consumerism, Green Marketing

ann tamuneshwar University of Science I senno or 113 - K-1251411 (Harrank)

Course Name: Human Resource Management Couse Code: MC 204

Semester: 2nd

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Lesson	Lesson title
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1	Introduction to HRM: Concepts, Perspectives and HRM in a changing environment
2	Managerial and Operative Functions of HRM
3	HRP and Job Analysis
4	Recruitment methods and Strategies
5	Selection Process and Strategies
6	Placement, Induction, Separation Practices and Socialization
7	Training and Development: Concept and Methods
8	Retention, Retention strategy and HR Accounting
9	Performance Appraisal and Potential Evaluation
10	Career and Succession Planning; Talent Management
11	Compensation Management; Incentives and Employee Benefits
12	Job Evaluation
13	Employee Welfare and Industrial Relation
14	HR Audit

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Semester: 2nd

Course Name: Management and Cost Accounting Couse Code: MC 205

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2	Role and Responsibilities of Management Accountant and Distinction of Management Accounting with Financial and Cost Accounting	
3	Cost Accounting: Nature, Scope, Methods and Techniques	
4	Cost Concept and Classification	
5	Budget and Budgetary Control	
6	Standard Costing and Variance Analysis	
7	Marginal Costing and Break Even Analysis	
8	Practical Applications of Marginal Costing in Managerial Decision Making	
9	Responsibility Accounting	
10	Transfer Pricing	
11	Measurement of Divisional Performance	

Course Name: Research Methodology Couse Code: MC 206

Semester: 2nd

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· 1	Introduction to Business Research	
2	Types of Business Research and Research Process	
3	Scientific Method, Theory Building and Types of Variables; Introduction	
	Exploratory Research and Experimental Research	
4	Problem Definition	
5	Research Designs	
6	Methods of Data Collection	
7	Questionnaire Design	
8	Sampling Design	
9	Measurement and Scaling concepts and Basic concepts of Reliability and	
	Validity	
10	Data Analysis: Descriptive Statistics and Univariate Statistics	
11	Bivariate Statistics: Test of Difference and Measures of Association;	
***	Introduction to Multivariate Analysis	
12	Report Writing	

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR DIRECTORATE OF DISTANCE EDUCATION M Com 1st Year

Course Name: Management Process and Organisational Behaviour Semester: 1st

Couse Code: MC 101

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Course Name: Business Environment

Couse Code: MC 102

Semester: 1st

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Semester: 1st

Course Name: Managerial Economics

Couse Code: MC 103

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Course Name: Financial Accounting and Reporting

Couse Code: MC 104

Semester: 1st

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Semester: 1st

Course Name: Business Statistics

Couse Code: MC 105

References

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Course Name: E-Commerce Couse Code: MC 106

Semester: 1st

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Semester: 2nd

Course Name: International Business

Couse Code: MC 201

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Course Name: Financial Management

Couse Code: MC 202

Semester: 2nd

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Course Name: Marketing Management

Couse Code: MC 203

Semester: 2nd

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Course Name: Human Resource Management

Couse Code: MC 204

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Semester: 2nd

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Semester: 2nd

Course Name: Management and Cost Accounting

Couse Code: MC 205

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Course Name: Research Methodology

Couse Code: MC 206

Semester: 2nd

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PROGRAMME PROJECT REPORT

FOR

M.A. (MASS COMMUNICATION)

(Through Open Distance Learning)



DIRECTORATE OF DISTANCE EDUCATION

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE &

TECHNOLOGY

("A+" Grade NAAC Accredited)

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DIRECTORATE OF DISTANCE EDUCATION

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

PROGRAMME PROJECT REPORT M.A. (MASS COMMUNICATION)

A. PROGRAMME'S MISSION & OBJECTIVE

MISSION OF PROGRAMME

•

The mission of M.A. Mass Communication programme is to produce socially responsible, informed, skilled citizens who understand how various media technologies and communication processes emerge within particular social, economic and political contexts and thereby affect both individual identity and societal processes on a global level.

OBJECTIVES OF PROGRAMME

The main objective of this programme falls on the following aspects:

- > To provide opportunities to the learners about the abstruse understanding of communication associated with every human being, so that they can enter into the competitive world of media.
- > To create a space for constructive participation of aspiring media persons for a collaborative effort in nation-building through mass media and similar evolving technologies.
- > To develop professional expertise and promote a high standard in media education and research. This will help to enhance accountable and committed social behaviour that foster the need of popular culture.
- > To train the journalists who can upload the journalistic values and standard and consolidated in the role of the fourth pillar of democracy.

B. RELEVANCE OF THE PROGRAMME WITH HIGHER EDUCATIONAL INSTITUTION'S (HEI'S) MISSION & GOALS

• HEI'S MISSION:

The University aspires to be a globally recognized Centre of excellence in the field of technical education and research. It strives to achieve this by introducing innovative job oriented programmes, employing competent and motivated faculty, developing state-of-the-art infrastructure, striking purposeful linkages with industry and professional Registrationies, and promoting quality of work life on campus. The University focuses on the

a Jambheshmer Histority & Science & Technish & HSAR-125004 (markets) student community to imbue them with passion for knowledge and creativity and to promote sustainable growth in academic resources, student placements, holistic human development with a strong conviction for professional ethical, social and environmental issues.

HEI'S GOALS

The goals of the University as enshrined in the Act are to facilitate and promote studies and research in emerging areas of higher education with focus on new frontiers and also to achieve excellence in these and connected fields.

• PROGRAMMES OFFERED TO ACHIEVE HEI'S MISSION AND GOALS

One of the fundamental aims of the programme is to afford quality higher education in the field of Mass Communication through distance learning mode. Mass communication discipline helps to comprehend the social, political and economic dynamics as a part of society, and especially the psychological dimensions of the human communication system. This programme also helps them to transform into intellectually competent human resources to strengthen the democratic values of the nation.

In the accordance with the mission of Guru Jambheshwar University, Hisar, as aspire to be globally recognized centre of technical education and research, this programme of M.A. Mass Communication is based on industry requirement and also has the capacity to hold academic excellence through the research-oriented module. Analytical and innovative learning resources has been facilitated and flexible learning environment is created by the university to the far-reaching students.

C. NATURE OF PROSPECTIVE TARGET GROUP OF LEARNERS

The curriculum has been designed according to the need of various mass communication fields like- teaching, communication research, public relations, advertising, media management, social marketing, development communication. The programme is convenient for graduate students from any discipline and for the senior professional in the media who wish to enhance their qualifications after sustaining years in journalism. Students who want to go for further studies or programmes like in research or doctorate level can get a bonus with this programme.

COMPOSITION OF THE TARGET GROUP

- The Graduate learners desirous of enhancing their knowledge and qualifications for higher studies.
- The Persons who cannot pursue higher education due to any reason.

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Buru Jambucshwar University

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- > The Persons who are not able to pay higher fees in regular mode (Affordable Fee structure).
- > The Home makers who want to enhance their career in journalism.
- The University employees who want to upgrade their qualifications (with fee concession).
- > Young entrepreneurs who wish to acquire managerial skills through media.
- > The students who are eligible for Post Matric Scholarship (PMS) for SC student of Haryana as per the Government Guidelines.

D. APPROPRIATENESS OF PROGRAMME TO BE CONDUCTED IN OPEN AND DISTANCE LEARNING (ODL) MODE TO ACQUIRE SPECIFIC SKILLS AND COMPETENCE

M.A. Mass Communication through distance mode can be able to impart media literacy within the people of diverse social groups and encourage the large segment to understand information communication technology. The persons who are in job or discontinue their formal education or could not join regular colleges or universities owing to social, economic and other constraints can also do this programme.

LEARNING OUTCOMES

This degree provides wide range of skills such as critical thinking, communication fluency, quantitative fluency, and specialized knowledge/applied learning in various field of mass communication i.e. Print Media, Electronic media, Advertising, Public Relations etc. In addition to these learners will be able to:

- > Apply specific paradigms for critical thinking to mass communication.
- > Evaluate and apply diversity, objectivity, and balance to any form of mass communication.
- > Evaluate mass communication theories and assess their use.
- > Determine the best methods and strategies for developing a message.
- > Demonstrate proper application of industry tools and techniques common to mass communication.
- > Reflect on and respond to ethical, social, civic, and/or environmental challenges at local, national, and/or global levels.
- > Find relevant sources of information, evaluate information critically, and apply information appropriately and effectively to specific purposes.

SPECIFIC SKILLS ACQUIRED

The leaners in the process of learning acquire the following skills:

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- Communication Skills: Communication skills are abilities you use when giving and receiving different kinds of information. Communication skills involve listening, speaking, observing and empathizing.
- Media Skills: The learners will come to know about handling of the various equipment software and basic technical skills require to develop audio visual content for media.
- Presentation skills: The content of the programme is designed to learn the basic speaking skills, use of body language, posture, gestures and use of visual aids effectively.
- Entrepreneurial Skills: Entrepreneurial skills refer to the set of cognitive, technical, and interpersonal skills required in the practice of entrepreneurship.
- Creative and Innovative Skills: The overall aim of the programme is develop creative and innovative thinking skills. It is also practical application of creative ideas, product innovations and service innovations.
- > Public Relations Skills: The learners will learn relationship building, multitasking in high pressure and strategic thinking through public relations skills.

• COMPETENCIES ACQUIRED

The various competencies acquired by learners include:

- > Personal competencies- How to manage media organization and Public Relations.
- > Interpersonal competencies- How to work with people in teams and make coordination in their activities.
- > Informational competencies- How to use and process the information for society welfare.
- Action competencies- How to perform in the challenging environment in a systematic way.
- Media competencies How to use and design media content with critical thinking that reflect the role of media in society.

E.Instructional Design

The Higher Educational Institutions are expected to provide quality education for all. For strategic plans, The institution adopts specialized approach where the task involved in to design in curriculum, Self-Learning Materials (SLM) etc. The programme, curriculum and syllabi are designed and evaluated by a Departmental Committee. The curriculum and syllabi is then placed in the Board of Studies. The finalized curriculum and syllabi are then placed in

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the Academic Council for the final approval. The governing body of the distance education ensures that the distance education curriculum has equivalent syllabus as the regular programmes. Approval of Board of Studies and Academic Council are obtained whenever modifications/additions are made in the existing curriculum and syllabi.

CURRICULUM DESIGN

The curriculum is adapted from the regular programme i.e. run throughout the Guru Jambheshwar University of Science and Technology's Communication Management and Technology Department. The curriculum has been developed consulting with internal and external subject matters experts. The entire syllabus has been divided into four semesters for two years of study. Each semester comprised of five papers.

DETAILED SYLLABI

M. A. (MASS COMMUNICATION)

SEMESTER-I

Sr. No.	Course Code	Nomenclature	Assignments	External Marks	Max. Marks
1	MSM-501	Introduction To Mass Communication	30	70	100
2	MSM-502	Communication & Information Technology	30	70	100
3	MSM-503	Graphics and Media Production	30	70	100
4	MSM-504	Media Writing-1	30	70	100
5	MSM- 505-DDE	New Media and Social Media	30	70	100

SEMESTER-II

Sr. No.	Course Code	Nomenclature	Assignments	External Marks	Max. Marks
1	MSM-511	Communication Research	30	70	100
2	MSM-512	Management and Marketing Principles	30	70	100
3	MSM-513	Media Law	30	70	100
4	MSM-514	Media Writing-3	30	70	100

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5	MSM-	Production Portfolio	-	100	100
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SEMESTER-III

Sr. No.	Course Code	Nomenclature	Assignments	External Marks	Max. Marks
1	MSM-521	Mass Media Structure and Management	30	70	100
2	MSM-523-A	Reporting	30	70	100
3	MSM-523- DDE	Electronic Media	30	70	100
4	MSM-523-C	Advertising Creativity & Consumer Behaviour	30 .	70	100
5	MSM-523-D	PR Principles And Tools	30	70	100

SEMESTER-IV

Sr. No.	Course Code	Nomenclature	Assignme nts	External Marks	Max. Marks
1	MSM-531-A	Newspaper Production and Management	30	70	100
2	MSM-531-B	Radio and Television Production	30	70	100
3	MSM-531-C	Advertising Campaign Management	30	70	100
4	MSM-531-D	PR Campaign Planning	30	70	100
5	MSM-532- DDE	Production Portfolio		100	100

SCHEME AND INSTRUCTION FOR M.A. (MASS COMMUNICATION) EXAMINATION

1) Name of the Course:

M.A. (Mass Communication)

2) Duration of the Course:

Two Years (Four Semesters)

3) Objectives:

The main objective of the Programme to produce socially responsible, informed, skilled citizens who understand how various media technologies and communication processes

emerge within particular social, economic and political contexts and thereby affect both individual identity and societal processes on a global level.

4) Eligibility for Admission: Graduate in any discipline with atleast 50% marks (pass marks for SC candidates of Haryana)

5) Maximum Time Allowed: The maximum duration allowed to complete the course will be 4 years.

6) Medium of Instructions: The medium of instructions/exam shall be in English and Hindi.

7) Instructions to Examiner: The examiner is required to set nine questions in all. The first Question will be compulsory consisting of seven short questions covering the entire syllabus. In addition, eight more questions will be set comprising two questions from each unit. The students shall be required to attempt five questions in all selecting one question from each unit in addition to compulsory Question No. 1. All questions shall carry equal marks. The maximum time allotted for the external examination is 03(three) hours. Students have the option to answer some questions in Hindi and others in English but within an answer to a question the language should be pure (not bilingual) and corrects.

8) Internal 30% weightage is given for practical based online assignments
Assessment: (Handwritten). The questions for assignments will be uploaded on university web-site.

The M.A. Mass Communication programme is divided into four semesters (two semesters in the first year and two semesters in the second year). Each paper will have maximum marks 100 in the ratio of 70% external and 30% internal.

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9) Scheme of

Examination:

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MSM-501

INTRODUCTION TO MASS COMMUNICATION

Time Allowed: 3 Hours

Max. Marks: 70

Objective:

Communication is at the heart of all social Intercourse. A student of Communication should have an understanding of basics of communication, Communication process, Different theories of communication, and different models of communication. Irrespective of the field a student chooses if he/she is well versed with the chemistry of communication involved he/she can plan/design communication better.

UNIT-1

Definition & Concept of Communication

Elements of Communication
Functions of Communication
Communication and Socialization

Forms of Communication

Intrapersonal Communication
Interpersonal Communication
Small Group Communication
Public Communication
Mass Communication
Nonverbal Communication
Verbal Communication

Communication: Group, Public, Audience, Mass

Definitions of Mass Communication Nature & Scope of Mass Communication Features of Mass Communication Characteristic features of the audience of Mass Media

UNIT-2

Models of Communication

SMR Model, SMCR Model, Shanon & Weaver Model, Laswell's Model, Osgood's Model, Dance's Model, Schramm's Model, Newcomb's Model, Convergent Model, Gatekeeping Model, Westley and Mclean's conceptual Model, Backer's Mosaic Model, Bornlund's Transactional Model

UNIT-3

Theories of Mass Communication

Media Effects Theories, Magic bullet, Minimal effect, Agenda setting, Cultivation theory, Two step flow theory, Multistep flow theory, Dependency theory, Diffusion of innovations theory, User and gratification theory, Spiral of silence, Cognitive dissonance

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Limitations of Mass Communication, Demassification, Demystification, Decentralization, Future trends in Mass Communication

UNIT-4

Development: Concept, Paradigm

Role of Mass Communication in Development, Development & Social Marketing, Developing Societies, Indian Experiences of Development Communication & Social Marketing.

Media Systems

Authoritarian, Libertarian, Socialistic, Social responsibility, Development Media Theory, Participatory Media System.

SUGGESTED READINGS:-

- 1. Communication Theories: perspectives, processes and contexts- Katherine Miller
- 2. Mass communication theory- Denis Mcquail
- 3. Introduction to communication studies: John Fiske
- 4. Mass communication Theory- Foundations, Ferment and Future by Baran and Davis
- 5. New Media: a critical introduction- Martin Lister
- 6. Pragmatics of Human Communication- Paul Watzlawick and Bavelas
- 7. Mass Communication in India Keval J Kumar, 2012 Jaico Publishing, Mumbai
- 8. vk/kqfud i=dkfjrk & vtqZu frokjh

MSM-502

COMMUNICATION & INFORMATION TECHNOLOGY

Time Allowed: 3 Hours

Max. Marks: 70

Objective:

It is the Technology that gives shape to the profession. Computers have changed the news room scene. This paper aims at making the students aware of the basics of Information technology involved in the profession.

UNIT-1

Broadcasting Technology
Signal generation & Transmission
Microwave links, Terrestrial transmission
Optical Fiber, Wireless & Advance Telephony
AM & FM transmission, Radio Broadcasting,
Satellite: History, types & functions
Cable TV transmission, DTH, Digital transmission

UNIT-2

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Computer Technologies Computer, LAN, WAN, Internet, E-mail, Role of Computer in various mass media

UNIT-3

Facsimile, videotext, Teletext Multimedia WEBSITE, WEBPAGE, HOMESITE Basics of HTTP, HTML, HFTP, DNS, JAVA

UNIT-4

Media, Facebook, whatsapp, twitter, web portal, skype Browsing & Searching E-Commerce, Buying, Selling, Banking & Advertising Web page development, forming, installing, linking, editing.

SUGGESTED READING:-

- Information and Communication Technologies: Visions and Realities- William H. Dutton, Makolm Peltu: Oxford University Press
- 2. The Social Shaping of Information Superhighways: European and American Roads to the Information Society- Herbert Kubicek, William H. Dutton, Robin Williams
- 3. World Wide Research: Reshaping the Sciences and Humanities- William H. Dutton, Paul W. Jeffreys: MIT Press
- 4. Information and Communication Technology- Abdul Mannan
- 5. Society and the Internet: How Networks of Information and Communication are Changing Our Lives-Mark Graham, William H. Dutton: OUP Oxford
- 6. Web Journalism: Practice and Promise of a New Medium- James G. Stovall
- 7. New Media Technology- John Vernon Pavlik: Allyn & Bacon
- 8. Reshaping Communication- Paschal Preston: Sage Publication
- 9. Introduction to Information Technology Chetan Shrivastava
- 10. Digital Computer Fundamentals T.C. Bartee: Mc Graw Hill Publication

MSM-503

GRAPHICS AND MEDIA PRODUCTION

Time Allowed: 3 Hours

Max. Marks: 70

Objective:

Graphics and Design are integral part of Mass Communication. A journalist provides content whereas to the viewers/readers/listeners it is presented in such a way that it becomes easily comprehensible. So in this paper students will be exposed to the basics of graphics and design. Photography is inseparable in the profession. Besides the basic technologies involved in the profession like recording etc have also been included in the paper.

UNIT-1

Concept and Philosophy of Graphics and Production Elements of Design Principles of design (design syntax)

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Type and typefaces Choosing types in design layout, Layout Composing methods Desktop publishing

Visual copy of reproduction, Color and production aspects, Printing paper Costing and estimating

UNIT-2

Introduction to various type of print publication Leaflets, Booklets, Brochures, Newspaper, Posters, Books, Folders, Packages

UNIT-3

Still Photography: Origin and History
Camera parts and type of Cameras
Photographic techniques-Exposing, Developing and Printing
Black and White Photography
Color Photography
Special Photographic Techniques

UNIT-4

Introduction to Audio Visual Production
Basics of Audio Recording, Sound & Slide Productions
Recording various audio programmes, handling video camera

SUGGESTED READING:-

- 1. Graphics and Packaging Production (The Manufacturing Guides) by Rob Thompson
- 2. Production For Graphic Designers by Alan Pipes
- 3. Television Production by Jim Owens ,Gerald Millerson
- 4. Video production Handbook by by Jim Owens, Gerald Millerson
- 5. Video Basics 7 by Herbert Zettl
- 6. Television Production Handbook (Wadsworth Series) by Herbert Zettl
- 7. Production Management For Film And Video by Gates Richard Directing the Story by Francis Glebas

MSM-504

MEDIA WRITING -1

Time Allowed: 3 Hours

Max. Marks: 70

Objective:

Writing skill is the foundation on which the mansion of media world is built. In this paper students will be exposed to different types of writing. They will also be made aware of the fundamentals of writing. In this paper students will also be made aware of writing for Public Relations, Development reporting etc.

UNIT-1

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Fundamentals of writing Introduction to writing Lucidity and directness Authenticity and credibility Authorial voice

UNIT-2

Writing for Print Media
Basics of reporting, Basics of editing, News story, Feature writing, Article writing,
Editorial writing, News analysis, Back grounder, Human interest stories

UNIT-3

Writing for PR, Basics of PR writing Press release writing & difference between news, story & press release, Writing minutes & Memos, Report writing, Letter writing

UNIT-4

Writing for Development, Basics of development Writing, Development Reporting ,Development story, Development Article, Development Approach, Main stream journalism Vs Development journalism, Activist Journalism, Journalism as a Mission

SUGGESTED READINGS:-

- 1. Basic Media Writing by Melvin Mencher
- 2. Writing for the Mass Media (8th Edition) by James Glen Stovall
- 3. Writing for Digital Media by Brian Carroll: Taylor & Francis
- 4. Journalism: Principles and Practice by Tony Harcup
- 5. Scholastic Journalism, 12th Edition by C. Dow Tate, Sherri A. Taylor
- 6. Writing for Visual Media by Anthony Friedmann: Taylor & Francis

MSM-505-DDE

NEW MEDIA AND SOCIAL MEDIA

Time Allowed: 3 Hours

Max. Marks: 70

Objective:

The objective of this course is to get the students acquainted with the basic concepts and development of new media and social media.

UNIT-1

New Media: Growth and development of New Media, Effects and Implication of New Media.

Role of New Media in democratization process.

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Citizenship through Participation.

UNIT-2

New Media as a medium of communication. New Media as a source of information (search engines). Social impact of New Media.

UNIT-3

Social Media and Mobile Communication, Types of Social Media, Social Media Features.

Difference between Social Media and Social Networking.

Advantages and Disadvantages of Social Networking.

UNIT-4

Critics of Social Media.

Social Media Effects on Youth Communication.

Social Media Shopping Sites, Impact of Social Media on Consumer Buying Behaviour.

SUGGESTED READINGS:-

- 1. Bittu Kumar, "Social Networking-Make Money Online", V & S Publishers.
- 2. Chris Brogan & Julien Smith, "The Impact Equation", Portfolio Hardcover.
- 3. James Glen Stovall, "Journalism on the Web", Pearson Allyn & Bacon.
- 4. K.M. Shrivastava , Social Media in Business and Governance, Sterling Publishers.
- 5. Sunil Saxena, "Breaking News The Craft and Technology of Online Journalism", Tata McGraw Hill, New Delhi.
- 6. Tapas Ray, "Online Journalism A Basic Text", Foundation Books, Delhi.

MSM-511

COMMUNICATION RESEARCH

Time Allowed: 3 Hours

Max. Marks: 70

Objective:

Communication Research in general and Media Research in particular has emerged as a major thrust area in Mass Communication education. Research has become a life line in any field of media. Let it be Launching a new newspaper, new channel, an advertising Campaign, A social Marketing campaign, a Public Relations Campaign, Designing a development project. Research does not end here. To study the TRP, to plan the expansion of circulation, research is must. Besides studying the public opinion on every occasion has become a way of life. Hence Communication Research has emerged as a major field where students can make their career.



UNIT-1

Introduction to research

Definition, role, function, scope & importance of communication research. Social science Research and communication Research, Communication research and Media Research, Basics and applied research

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UNIT-2

Research Design, Experimental, semi-experimental, bench mark, longitudinal studies, simulation, panel studies, empirical studies.

Methods of Communication Research: Census method, Random sample survey method, Observation method. Case studies, Clinical studies, Content analysis.

UNIT-3

Sampling techniques questionnaire Purpose, preparation, and administration, Types of questions, pre-coded questionnaire, and interview guide Primary, secondary and tertiary sources Preparation of code book & coding Tabulation, analysis & interpreting Variables, independent & dependents Hypothesis

UNIT-4

Statistical analysis in communication research
Mean, Median, Mode, Standard deviation, chi square test
Evaluation feedback, Feed forward, Media habits, Public surveys,
Pre-election studies and exit polls.
Report writing
Research as tools of reporting

SUGGESTED READING:-

- 1. A Handbook of Media and Communication Research: Qualitative and Quantitative Methodologies by Klaus Bruhn Jensen: Routledge
- 2. Mass Media Research: An Introduction by Roger D. Wimmer , Joseph R. Dominick
- 3. Media and Communication Research Methods: An Introduction to Qualitative and Quantitative Approaches by Arthur Asa Berger: SAGE
- 4. Doing Media Research by Susanna Hornig Priest: SAGE
- 5. Dictionary of Mass Communication & Media Research: A Guide for Students, Scholars and Professionals By David Demers

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MSM-512

MANAGEMENT & MARKETING PRINCIPLES

Time Allowed: 3 Hours

Max. Marks: 70

Objective:

The broad objective of the syllabus is to make the students fine media persons. It includes entrepreneurs in media. Management skill is a must to master the art of understanding the dynamics of communication besides developing leadership skills in the profession.

UNIT-1

Management

Concept and definition of Management Role of Managers, Decision Making – by Individuals & Groups Human Resource Development, Leadership, Entrepreneurship Future Trends in Management

UNIT-2

Marketing
The Concept & Philosophy of Marketing
Changing Indian Marketing Scenario
Marketing mix- Product, Price, Place & Promotion, Media mix
Managing mass Communication and personal communication in marketing

UNIT-3

Designing and managing integrated marketing communication, CSR, Social marketing and Cause related marketing, Media and Marketing strategy, Differentiating and positioning the market offer.

UNIT-4

Market leaders, challenges, followers and niche market information system, market intelligence, organizing, implementing, evaluating and controlling the market programme Design of media house, Major marketing weaknesses.

SUGGESTED READING:-

- Marketing Management A South Asian Perspective: Philip Kotler, Keller, Koshy and Jha, Published by Pearson Education
- 2. Management: Robbins, Coulter and Niharika Vohra, published by Pearson
- 3. The Practice of Management: Peter Drucker, published by Elsevier Ltd.
- 4. Media Management: A Casebook Approach (Routledge Communication Series) by George Sylvie, Jan Wicks LeBlanc, C. Ann Hollifield, Stephen Lacy

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- 5. Handbook of Media Management and Economics by Alan B. Albarran, Sylvia M. Chan-Olmsted, Michael O. Wirth
- 6. Strategic Management in the Media: Theory to Practice by Lucy Keung , SAGE

MSM-513

MEDIA LAW

Time Allowed: 3 Hours

Max. Marks: 70

Objective:

Knowledge in media law is a must to become a media person. Hence in this paper only selected aspects of media law has been included so that a student when grooms into a media person does not end up in legal battle while performing duties sincerely.

UNIT-1

Freedom of speech & expression, Article 19 1 (a) & (2) Reasonable Restrictions Right to Information
Laws of Defamation
Contempt of Court
Contempt of Legislature

UNIT-2

Official Secrets act
Press and Books Registration act
Copy Right act
First Press commission and Second Press Commission
Press council of India.

UNIT-3

Broadcasting code for News for Air & DD
Broadcasting for advertising for air & DD
Cable TV regulations Act
Cinematograph Act
Prasar Bharati Act
Film Censorship
Report of various Committees and Commissions dealing with electronic media in India
(i) Verghese committee (ii) Chanda Committee (iii) Joshi committee

UNIT-4

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Code of Conduct for journalist, Self-Regulation & censorship, Code of Ethics for advertising in India by Advertising Council of India, DAVP's Code of advertising Regulations for Public Relations (IPRA Code of Ethics)

SUGGESTED READING:-

- 1. Media Law by Sallie Spilsbury: Taylor & Francis
- 2. Digital Media Law by Ashley Packard : John Wiley & Son
- 3. Mass Media Law by Don Pember, Clay Calvert
- 4. Press Laws and Ethics of Journalism by Ravindranath, PK
- 5. Barua, Vidisha: Press & Media Law Manual, Universal Law, Publishing Co. Pvt. Ltd., New Delhi, 2002
- 6. Jean Claude Bertrand: Media Ethics and Accountability System, Transaction, Publishers, 2000
- 7. Faizan Mustafa: Constitutional Issues in Freedom of Information, Kanishka Publication, New Delhi, 2003
- 8. Angela Wadia: Global Resource Book on Right to Information, Kanishka Publication, New Delhi, 2006

MSM-514

MEDIA WRITING -3

Time Allowed: 3 Hours

Max. Marks: 70

Objective:

Like Media writing-1 in first semester has been incorporated, here in the second semester to make them well versed with media writing. In the first semester it was print media writing, Public Relations writing and development writing. In this semester it will be writing for electronic media, writing for Radio and Television, writing for Advertising and writing for web, which has registered big presence in media education.

UNIT-1

Writing for Radio
Basics of Radio writing
Characteristics of Radio as a medium
Programme composition of AIR, Private FM channels & Community Radio
Radio genres: News, News reel, Documentaries, Drama, Feature, Talk, Interview
Writing for an audience specific program (for child, women, farmer etc.)
Introduction to Recording and editing sound

UNIT-2

Writing for Television

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Characteristics of Television as a medium

Television genres: News, News features, Documentaries, Interviews, Discussions & Debates, Talk shows, Content development for audience specific program Visual Grammar – Camera Movement, Types of Shots, Focusing Basics of a Camera

UNIT-3

Writing for Advertising
Introduction to advertising
Concept of copy writing
Idea generation and transforming ideas into copy
Copy platform
Copy parts: Headline, Sub/Pre-head, Body Copy, Tagline/Punch line, Logo, Legal & Mandatories
Appeals in advertising
Writing for screen ads vs. writing for print ads
Audience/Viewers/Target Group analysis

UNIT-4

Writing for Web

Basics of writing for web, developing web pages, developing static & dynamic websites, Interface between visuals & copy, elements of Web page

Writing for Social media

Basics of Writing for Social Networking Sites (SNSs): Facebook, Twitter, Wordpress, Blogger Use of SNSs: YouTube, Docs, Drive, Hangouts, Skype, Instagram, Pinterest, LinkedIn, Citizen Journalism through SNSs

SUGGESTED READING:-

- 1. Basic Media Writing by Melvin Mencher
- 2. Writing for the Mass Media (8th Edition) by James Glen Stovall
- 3. Writing for Visual Media by Anthony Friedmann: Taylor & Francis
- 4. Scholastic Journalism, 12th Edition by C. Dow Tate, Sherri A. Taylor

MSM-515-DDE

PRODUCTION PORTFOLIO

Max. Marks: 100

Objective: The course is oriented to give practice the students about the writing techniques used in the various media.

The candidates will submit the items listed below. Marks for each item are as indicated against them.

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Sr. No.	Items	No.(s) of Item	Marks
1	News Stories: Covering Major Events in your Area	10	10
2	Film Reviews (Any two Recent Films)	2	10
3	TV Reviews (Current TV Serials or Programmes)	2	10
4	Book Reviews (Any Recent Book)	1	5
5	Script Writing for Radio News	1	10
6	Script Writing for TV News	1	10
7	Script Writing for Radio Ad.	2	5
8	Script Writing for TV Ad.	2	5
9	Caption Writing for Photographs (click by you)	5	5
10	Travelogue	2	10
11	Script writing for Documentary (10-15 min.)	1	10
12	Questionnaire for Communication/Media Research	2	10

MSM-521

MASS MEDIA STRUCTURE AND MANAGEMENT

Time Allowed: 3 Hours

Max. Marks: 70

Objective: The objective of this course is to help the students understand the conceptual framework of mass media management and its application in field.

· UNIT-1

Print Media

Organizational structure of newspaper and management

Ownership and control of newspaper

Economics of Production of newspaper and magazines

Managing internet edition of a newspaper

Newsprint policy

Wedleles.

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UNIT-2

Electronic Media
Administrative structure of Prasar Bharti & Private Channels
Ownership and control of Radio and TV
Economics of Producing programmes for Radio and TV
Cinema Industry in India: structure, organization and economics

UNIT-3

Advertising Agency
Structure and functions of Ad Agencies
Ad Agency Commission system
Budgeting Ad Campaign
Empaneling of Ad Agency
Interface of various departments of an Ad Agency

UNIT-4

PR Department Agencies
Structure and functions of PR Departments
Consulting Agencies
PR Campaign and Budgeting
Empanelling of PR consultancies
Functioning of PR Departments in Corporate Sectors

SUGGESTED READING:-

- 1. Media Planning and Buying: Arpita Menon, published by Tata McGraw Hill
- 2. The Indian Media Business: Vanita Kohli Khandekar, published by Sage
- 3. Newspaper Management in India: Gulab Kothari, published by Intercultural Open University (Netherlands)
- 4. Communication Managemnt: C.S. Raydu, published by Himalaya Publishing House
- 5. Media Management: A Casebook Approach (Routledge Communication Series) by George Sylvie, Jan Wicks LeBlanc, C. Ann Hollifield, Stephen Lacy
- 6. Handbook of Media Management and Economics by Alan B. Albarran, Sylvia M. . Chan-Olmsted, Michael O. Wirth
- 7. Strategic Management in the Media: Theory to Practice by Lucy Keung, SAGE

MSM-523-A

REPORTING

Time Allowed: 3 Hours

Max. Marks: 70

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Objective: The objective of this course is to enable students to gather news and to develop the news concept and the critical thinking skills to recognize when news lacks fairness and credibility.

UNIT-1

Concept and Definition of News
Source of News
Types of News
News and Views
Methods and techniques of News gathering
Structure of a News Report
Techniques of News Writing: straight, quoting, paraphrasing, Interpretation, comment, analysis

UNIT-2

Types of reporting: Political, Economic, Crime, Science, Sports, Culture, Legislature, Judicial Disaster, Accident, Travelogue, Obituary, Conference, Seminar, human Interest, Environmental Health, Investigative, Interpretative, Developing- Follow Up

UNIT-3

News Agency Reporting
Review & Criticism: Books, films, T V Programmes, Theatre, Art exhibition
Cartoons, caricatures, illustrations in newspapers/magazines

UNIT-4

Participatory journalism - Role of receivers, Citizens' Journalism

Media activism - issues of privacy, social responsibility and ethics

Trial by media - debate on benefits and dangers

Investigative journalism - contemporary trends, sting operations

Journalism and democracy

Journalism and development

Objectivity in Reporting Yellow Journalism & check book Journalism

Changing Trends in Reporting

Precision journalism

SUGGESTED READING:-

- Natrajan J: History of Indian Journalism, Publications Division, Ministry of Information & Broadcasting, Govt. of India, 1997
- 2. Parthasarthy, Rangaswami: Journalism in India, Sterling Publishers Pvt. Ltd., New Delhi, 1997
- 3. N N Sarkar: Art and Production, Sagar Publishers, New Delhi, 2001



- 4. J K Sharma: Print Media and Electronic Media, Authors Press, 2003
- 5. Paul De Maeseneer: Here is the News: A Radio News Manual, UNESCO
- 6. Shyamali Bhattacharjee: Media and Mass Communication, Kanishka, Publication, New Delhi, 2005
- 7. Ambrish Saxena: Fundamentals of Reporting and Editing, Kanishka, Publication, New Delhi 2007

MSM-523-DDE

ELECTRONIC MEDIA

Time Allowed: 3 Hours

Max. Marks: 70

Objective:

The objective of this course is to provide the insight knowledge about the

electronic media.

UNIT-1

Evolution and growth of radio in India-Radio since 1947, Role, Reach and Future of Radio, Structure and functions of AIR and different type of Radio stations, Basics of Radio Program production: Equipment and Process, Stages of Radio Programme Production, Radio Transmission and Reception of Signals, Qualities of a good Announcer.

UNIT-2

History & Development of TV in India, Role, Reach and Future of TV, Structure and functions of Doordarshan, TV Program Production equipment, Stages of TV Programme Production, Cable TV, DTH.

UNIT-3

Still Camera, Parts, Functions, ISO, Shutter Speed and Aperture, exposure, handling Camera, Camera shots, angles and movements, Lighting, up linking, down linking, Satellite Transmission, Digital Transmission, TV Studio Set up, Cues and Commands.

UNIT-4

Script Writing for Radio & TV News, Radio & TV Advertising. Editing for Radio & TV: Linear and Non-linear editing.

SUGGESTED READINGS:-

- 1. Arvind Kumar, "Electronic Media", Sage publications, New Delhi.
- 2. Fred Fedler, "Reporting for Media", Oxford Press.
- 3. Frieman, "Writing for Visual Media", Focal press.
- 4. Jenni mills, "The broadcast Voice", Focal Press.

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5. T.K.Ganesh, "News reporting and Editing in digital age", Gnosis Publications.

MSM-523-C ADVERTISING CREATIVITY & CONSUMER BEHAVIOUR

Time Allowed: 3 Hours Max. Marks: 70

Objective: In this paper students are taught on different aspects of Advertising creativity

and consumer behavior etc.

UNIT-1

Introduction to Advertising
Concept and genesis of advertising
Advertising Theories and Models-AIDA model, DAGMAR Model, Maslow's
Hierarchy Model.
Economic, Cultural, Psychological and Social aspects of advertising
Advertising as a tool of communication,
Role of Advertising in Marketing mix
Advertising and Popular Culture

UNIT-2

Creativity

Creativity: Concept and definition

Creativity in advertising

Idea generation

Copy platform

Idea to copy and visual

Copy writing

Layout and design

Appeals in advertising

Development of radio jingles and TV commercials

Packaging concepts and types

UNIT-3

Consumer Behaviour
Psychology of consumers
Demography of consumers
Preparing the socio-psycho profile of target group
Consumption patterns of durables and non-durables
Life style: Comprehension and application in advertising
Consumerism: pros and cons

Regliciant University of reference & Technology

UNIT-4

Advertising Agency

Advertising agency: structure and functions

Role of advertising agencies

Interface of various departments of ad agency

Agency-client relationship, Client brief

Account planning

Account handling

Functions of an Ad department and in house agencies in corporate sector

Selection and empaneling of an ad agency

Apex advertising organizations- AAAI, ABC, ASCI

SUGGESTED READINGS:-

- 1. Frank Jefkins: Advertising, Tata Mcgraw Hill, New Delhi
- 2. Jaishri Jethwaney & Shruti Jain: Advertising Management, Oxford University Press
- 3. J.V. Vilanilam & A.K. Verghese: Advertising Basics, Response Books, New Delhi, 2004
- 4. Vilmshurst John & Mackay Adrian: The Fundamentals of Advertising Butterworth Henemann, Oxford

MSM-523-D

PR PRINCIPLES AND TOOLS

Time Allowed: 3 Hours

Max. Marks: 70

Objective:

In this paper students are taught on different aspects of public relations like

brand management, corporate image, service marketing etc,

UNIT-1

Concept of Public Relations, Development of PR, present status and future PR in India
PR in relation to Marketing, Publicity and Advertising
Tools of public relations, I C T

UNIT-2

Corporate personality
Corporate identity
Integrating corporate identity into communication process
Case studies in corporate identity
Corporate Image
Corporate Brand Management

Registral

Gran & Technology

Fire a Leader Leader

UNIT-3

Service marketing
Introduction
Consumer behavior in service marketing
Key elements of service marketing
Management of service delivery process

UNIT-4

PR and Service Marketing
PR in educational institutes
PR in hotels
PR in hospitals
PR in police
PR in Government
PR in Insurance sector

SUGGESTED READING:-

- 1. Richard R Dolpinh: The Fundamentals of Corporate Communication, Butterworth Heinmann
- 2. Donald R GCorporate Reputation, London: Kogan page
- 3. Tom MeansBusiness communication, Thomson
- 4. Paul Argentli PaulThe Power of Corporate Communication, NY: McGraw Hill
- 5. Neeru Vashishth & Namita RajputBusiness Organisation and Management, Kitab Mahal, Allahabad, 2005
- 6. Jaishri N Jethwaney Public relations, ND: Sterling
- 7. Kutlip Centre & BroomEffective Public Relations, Prentice Hall, New Delhi
- 8. Sukul Lomash & P.K.Mishra, Business policy and strategic management, Vidya Vikash Publishing house, New Delhi

MSM-531-A MANAGEMENT

NEWSPAPER PRODUCTION AND

Time Allowed: 3 Hours

Max. Marks: 70

Objective: This paper attempts to make the students well verse with the management of

newspaper, circulation management, editorial package etc.

UNIT-1

Print Media

New formats of Newspapers and magazines including Internet

Planning the launch of new newspaper

dur tamuhadhwar University

Pre-launch research and marketing Registration of the title

UNIT-2

Newsprint sources and types
Test Marketing
Circulations, strategies and practices
Space selling, concept and practice

UNIT-3

Marketing of newspaper and magazines
Concept of news as commodity and packages of news
Devising editorial packages: Audience taste and product mix.
Contingency planning for particular editions

UNIT-4

Economics of newspaper and magazine production Editorial policies Problems of newspapers and futuristic trends Community Newspapers Freelancing and feature agencies

SUGGESTED READING:-

- 1. Walt Harrington; Intimate Journalism: The Art and Craft of Reporting Everyday Life, New Delhi, 1999
- J. C. Chaudhary; Introduction to Journalism and Mass Communication, Authors Press, Delhi, 2008
- 3. David Berry; Ethics and Media Culture, Focal Press, New Delhi, 2000
- 4. Tony Harcup; Journalism: Principles and Practice, New Delhi, 2004
- 5. Swati Chauhan and Navin Chandra; Modern Journalism: Issues and Chanllenges, Kanishka Publishers, New Delhi, 2005
- 6. J K Sharma; Print Media and Electronic Media, Authors Press
- 7. Ambrish Saxena; Fundamentals of Reporting and Editing, Kanishka Publication, New Delhi, 2007
- 8. Scholastic journalism- Tom rolnicki, C. Tate, Sherri Taylor
- 9. The editor's toolbox- Buck ryan, Michael o Donnell

RADIO AND TELEVISION

MSM-531-B

Registrat

Tanuhashwar University of

Science & Jechnology

Time Allowed: 3 Hours Max. Marks: 70

Objective: The objective of this course is to provide the insight knowledge about the radio and television production.

UNIT-1

Radio in relation to TV and Print Media

New broadcasting system and new formats in Radio and TV programmes

DTH and cable TV comparison and contrast

Managing cable networks

Convergence of information and communication technology

UNIT-2

Conceiving, planning and launching of new radio and TV programme
Pre launching research and marketing
New test marketing and actual launch; case studies
New equipments and techniques in radio and TV programme and transmission
Capturing audience and programme marketing
Different strategies for revenue generation through programming

UNIT-3

T V Production
Introduction to a T V Production team
Role of each member of the team and their functioning
Creative Head, Production in Charge, Art Director, Fight Master, Cast Director, Location
Hunter, Sound light, Script Writer, Screen Play Writer, Dialogue Writer etc.

Graphics, After Effects, Animation and Sound Effects, Lights and Croma

UNIT-4

Structures and functions of a T V studio
Channel Structure
News and entrainment channels, National Geographic channel, Discovery Channel

SUGGEATED READING:-

- 1. Television production handbook- Herbert Zettl
- 2. Television production- Jim Owens and Gerald Millerson
- 3. Video production Handbook by by Jim Owens, Gerald Millerson
- 4. Video Basics 7 by Herbert Zettl
- 5. The Radio Station by Keith



MSM-531-C

ADVERTISING CAMPAIGN MANAGEMENT

Time Allowed: 3 Hours

Max. Marks: 70

Objective: This course aims to prepare professionals interested in careers in advertising, marketing, promotions, corporate communication or sales managerial jobs, or for individuals in the field.

UNIT-1

Campaign Management
Introduction to information campaign
Campaign planning
Appraisal and analysis for a campaign
Setting Campaign objectives
Target Group analysis

UNIT-2

Creative strategy
Copy writing and art work
Media structure, media options and media selection
Budgeting

UNIT-3

Special campaign: political campaign analysis and management, Image/brand building through political campaigns

Developing Marketing Strategy: SWOT analysis, Strategic Planning

Evaluation, Feedback and Analysis of the campaign

UNIT-4

Conceiving, planning and doing pre-launch research and marketing of a new product. Preparing Campaign for the launch of product
Techniques of test marketing and the process of actual launch of the product
Process of building brand equity and brand image
Ad research

SUGGESTED READING:-

- 1. Jaishri Jethwaney & Shruti Jain; Advertising Management, Oxford University Press
- 2. Batra Myers and Aaker; Advertising Management, Printice Hall, New Delhi



- 3. O'Guinn, Allen, Semenik; Advertising and Integrated Brand Promotion, Vikas Publication house, New Delhi
- 4. Frank Jefkins; Advertising, Tata Mcgraw Hill, New Delhi
- 5. J.V. Vilanilam & A.K. Verghese; Advertising Basics, Response Books, New Delhi, 2004
- 6. Vilmshurst John & Mackay Adrian; The Fundamentals of Advertising Butterworth Henemann, Oxford
- 7. Aaker David A &
- 8. Mayers John G; Advertising Management, Prentice Hall of India, New Delhi

MSM-531-D

PR CAMPAIGN PLANNING

Time Allowed: 3 Hours

Max. Marks: 70

Objective: The objective of this course is to help the students understand the conceptual framework of Public Relations campaign, Consumer Behaviour and Social Marking aspects in field.

UNIT-1

PR Campaign Management

Management of Public Relations Campaigns

Public opinion, Propaganda, Publicity,

Rumors, Misinformation, Disinformation

Crisis communication and Management

Case studies Related to PR

UNIT-2

Consumer Behaviour Motivation, Needs, Involvement Experience, Learning, Knowledge, Attitude Models, Consumer Satisfaction

UNIT-3

Social Marketing
Introduction to Social Marketing
Basic principles of Social marketing
Social marketing Strategies
Case Studies of Corporate Social marketing

UNIT-4

Corporate Social Responsibility



Introduction, need, Future Case studies of CSR Efforts in India: Times of India, Indian oil corporation, TATA.

SUGGESTED READING:-

- 1. Richard R Dolpinh; The Fundamentals Of Corporate Communication, Butterworth Heinmann
- 2. Donald R G; Corporate Reputation, London: Kogan Page
- 3. Tom Means; Business Communication, Thomson
- 4. Paul Argentli Paul; The Power Of Corporate Communication, NY: Mcgraw Hill
- 5. Neeru Vashishth & Namita Rajput; Business Organisation And Management, Kitab Mahal, Allahabad, 2005
- 6. Jaishri N Jethwaney; Public Relations, ND: Sterling
- 7. Kutlip Centre & Broom; Effective Public Relations, Prentice Hall, New Delhi
- 8. Sukul Lomash & P.K.Mishra; Business Policy And Strategic Management, Vidya Vikash Publishing House, New Delhi

MSM-532-DDE

PRODUCTION PORTFOLIO

Max Marks: 100

OBJECTIVE: The course is oriented to give practice the students about the writing techniques used in the various media.

The candidates will submit the items listed below. Marks for each item are as indicated against them.

Sr. No.	Items	No.(s) of Item	Marks
1	News Stories: Covering Major	5	5
,	Events in your Area	9	
2	Dummy of Newspaper (Front	1 1	5
	Page, Editorial Page, Any	2.5	
	Other Page and Back Page)	11 10 200 120 12	
3 "	Dummy of a Magazine	84 1	5
	(Minimum Four Pages)		
4	Radio Jingles/Advertisement	2	5
5	TV Commercial	2	5
6	TV News Bulletin	2	10
7	Radio News Bulletin	2	10
8	Posters	2	5
9	Pamphlets	2	5
10	Leaflets	2	5
11	Brochure	2	5

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Science & Technolow

12	Print Advertisements (Classified, Display Classified, Display)	5 each	15
13	Web Ads	3	5
14	Logo design	5	5
15	Interview for an audience specific Programme (Child, Women, Farmer and Youth etc.)	1	10

DURATION OF PROGRAMME

The duration of the programme of M.A. Mass Communication shall be of two academic years in four semesters and the maximum duration is four years.

FACULTY AND SUPPORT STAFF

The Directorate of Distance Education (DDE) of the university is headed by the director who is a full-time faculty member (Professor) of the university appointed by Vice-Chancellor to facilitate the development, implementation and monitoring the programmes offered at DDE and to attend all administrative matters concerned with the activities of directorate. In addition, there is one full time faculty member of Directorate of Distance Education who is holding the position of Deputy Director. The supporting staff such as one Deputy Registrar, one Assistant Director, one Superintendent, two Deputy Superintendent, one Hindi Officer, Six Assistants and other clerical staff are coordinating the activities of Directorate of Distance Education (DDE) and looks after the problems of the distance students. The Supporting staff looks after the problems of the students through on-line admission help line, examination related work, study material delivery, grievance redressal and so on. The DDE is assisted by the IT CELL for the online uploading and evaluation of assignments and other student support activities. The DDE also assisted by Pt. Deendayal Upadhyaya Computer and Informatics Centre (PDUCIC) department for communicating important information to the distance student through Distance website of Guru Jambheshwar University of Science and Technology, Hisar. The PDUCIC department managed the Distance Website of the University. There are two faculties of Mass Communication in Directorate of Distance Education who are looking after the programme as Programme Coordinator and course coordinator. Further, support from faculties of parent teaching department i.e. Communication Management & Technology (CMT) is taken during PCP classes, preparation and evaluation of assignments etc.



FACULTY

The Directorate of Distance Education (DDE) have qualified teaching faculty to look after the programme as a Programme Coordinator. They look for the following activities related to the distance education:

- Conducting Personal Contact Programme (PCP) classes for the Distance students.
- Assisting in the change of Regulations and Curriculum, admission work, counselling new students and other issues such as break of study, exemptions etc.
- Coordinating for the preparation of study materials for all semesters/year.
- > Coordinating with the faculty members for the preparation and evaluation of assignments of students.

• INSTRUCTIONAL DELIVERY MECHANISM

The Instructional system of the University comprises four components, viz, Self-Learning Material (SLM), Personal Contact Programme, Internal Assignments and End Term Examination.

- Self-Learning Material (SLM) The success and effectiveness of distance education systems largely depend on the study materials so it is necessary their style must be ideal for easy and better understanding in self-study mode. Learning Material through Print media named self-learning Material (SLM) is developed with the approach of self-explanatory, self-contained, self-motivating and self-evacuating followed by the UGC guidelines.
- ▶ Personal Contact Programme PCP sessions guide the learners as the programme proceeds. The date and venue for the PCP will be communicated to the learners through our website or SMS Service. During PCP, the learner gets guidance for better understanding of the programme and subject. The Personal Contact Programme (PCP) of 10 days duration for semester programme will be arranged for each of the programme by the respective Programme Coordinator at the University campus. The learners can get their doubts cleared with the help of subject experts so as to improve their self-learning capability. Learners are required to attend PCP sessions for all their respective subjects as 75% attendance is compulsory in PCP classes.
- > Internal Assignments- Distance education learners have to depend much on self-study.

 In order to ascertain the writing skill and level of comprehension of the learner,



assignment work is compulsory for all learners. The Directorate of Distance Education (DDE) of this university has an online portal for the uploading of the assignments and same has been evaluated online by the subject expert. Two assignments of 30 marks 15 marks each shall be allotted for each subject consists of questions with practical based. The assignment question papers will be uploaded to the website within a scheduled time and the learners shall be required to respond them within a specified period of time. The response of the learner is examined by a faculty member.

- End Term Examination- At the end of every session learners will give theory exam for 70 marks for each subject. For examination, there will be of nine questions. The first question will be compulsory consisting of seven short questions covering the entire syllabus (all four Units). In addition, eight more questions will be set comprising two questions from each unit of the syllabus. The students are required to attempt other four questions by selecting one from each of the four units. All the questions including Q No 1 shall carry equal marks. The maximum time allotted for the major exam is 03 (three) hours.
- Identification of Media-Print- Various print formats are available including textbooks, study material, programme scheme and syllabi.

Audio or Video- No

Online- The study material is available on the University website.

Computer Aid- Well-equipped Computer Lab is exclusively available in Distance Education for download the e-books, journals, admission procedures etc for the students of Directorate Education.

STUDENT SUPPORT SERVICES

The distance department of the university is provides the Student Support Services through online mode. Following are the main student support services provided by university through online mode:

- > On line Admission Portal for students.
- > On line fee portal for students.
- > SMS alert facility for the students for information related to PCPs, Production Portfolio Deadlines etc.



- > Student Support service is provided through online mode and grievance handling mechanism is adopted with the help of supporting technical staff.
- > Practical Questions Based Assignments.
- > On-line availability of Old Question Papers and study material.
- Student Help Desk.

F. PROCEDURE FOR ADMISSIONS, CURRICULUM TRANSACTION AND EVALUATION

- Admission Procedure: All the admissions are made online by filling Online
 Admission Form. The procedure of filling the online application form is a four multi step procedure, which is mentioned below:
 - ➤ Candidate Registration: Click the registration form and fill the necessary details like: Name of Candidate, Father's Name, Date of Birth, Category, Name of Programme etc.
 - > Payment Option: Registered candidate may deposit fee by any of the following modes of payment:
 - a. Net Banking
 - b. Debit Card
 - c. Credit Card
 - > Filling of Application Form: After Registration and depositing of fee, registered candidate may fill the complete application form with all the fields given in the form.
 - > Uploading Documents: In final step, the following scanned documents (all documents /image/signature should be in "jpg", "gif", "bmp", "jpeg" (format only) are to be uploaded:
 - a. 10th Mark Sheet (for the purpose of proof of Name of candidate, Date of Birth,
 Father's and Mother's Name etc.) not greater than 500kb.
 - b. 12th Mark Sheet not greater than 500kb.
 - c. Mark sheet of qualifying exam along with degree of lower examination, if any, not greater than 500kb.
 - d. Photograph of candidate (should not be greater than 75kb) and Maximum size(Width 132px Height 170px) Minimum Size (Width 102px Height 140px).
 - e. Signature of candidate (should not be greater than 50kb) and Maximum size(Width 210px Height 80px) Minimum Size (Width 150px Height 50px).



- f Proof of fee concession, if applicable not greater than 500kb.
- g. Caste Certificate, if applicable, not greater than 500kb.
- > Generating Preview: After uploading the document, a preview of the complete application will be generated. If necessary, academic information can be edited before locking.
- > Lock form to generate enrolment no. and admission letter: Finally the application form is locked to generate enrolment No. and admission letter.
- Minimum Eligibility A person who has passed Bachelor degree in any stream from a UGC recognized University with atleast 50% marks (pass marks for SC candidates of Haryana) shall be applicable for M.A. Mass Communication. There is no upper age limit for admission in this programme.

Fee Structure

M.A. (MASS COMMUNICATION)

Instalment	Fee in Rs.
1st Instalment	7800/-*
2nd Instalment	4200/-
3rd Instalment	7800/-*
4th Instalment	4200/-

*includes \Box 500/- as University Registration fee in case of fresh admission and as continuation fee in case of promotion to next class/Year and \Box 2000/- as university examination fee in the case of semester programme and \Box 1000/- in the case of Annual Programmes.

In addition to above \(\square\) 100/- as Student Fee ship (Alumni Fund) is also payable once in programme duration at time of admission.

• Financial Assistance: The post metric scholarship facility is provided for SC students for the programme.

Curriculum Transaction

The Directorate will supply study material in the form of Self-Learning Mode (SLM) printed book/lessons as well as available on the website of Distance Education. The



students will get the same directly from the Directorate either by-hand or will be sent by post/courier service.

The Personal Contact Programme (PCP) of 10 days duration for semester programme will be arranged for each of the programme by the respective Programme Coordinator at the University campus. Theory/Practical teaching as per requirements will be provided to the students by the subject specialists. The PCPs will be held as per the schedule given in the prospectus. In addition to this students are informed through Distance Education website and SMS as well. However, the students are advised to report to the concerned Course Coordinator for PCP at the contact given therein.

Evaluation

Internal assessment is based on practical assignments and the evaluation is done by experts in relevant field. External term end evaluation is done by experts in relevant field.

Odd Semester	Even Semester
15th January every year	30th April every year
Last Date of submission of Internal As	ssignment with a late fee of
31st January every year	31st May every year
Last Date of submission of Internal As	ssignment with a late fee of 1000/-
15th February every year	15 th June every year

NOTE: The students have to upload two internal handwritten assignment of each theory paper of 30% weightage in the stipulated time period mentioned above. Assignments to be prepared by the students will be available on the website dde.gjust.ac.in. It is the sole responsibility of the student to download the question paper of the assignment and upload the solved assignments online as per above mentioned schedule. If any student will upload the assignment after the above stipulated schedule then the assignment will not be accepted and the student will be treated as absent in internal marks.

 Web Based Tools – The University provides various online facilities to the students such as Admission Brochure, Study material, Assignments, PCP, Examination Schedule, Old question papers, result, etc.



G. REQUIREMENT OF THE LABORATORY SUPPORT AND LIBRARY RESOURCES

• Laboratory Support:

A well-equipped Computer lab with latest version of MS Office and internet facility is also available in the department of Directorate of Distance Education (DDE) of this university. This Computer Lab is established with an aim to meet the computing requirements of all the Distance learners of the University. This lab is equipped with 12 desktop computers of latest configuration i.e. Window 7, Window 10 and I₃ processor. In addition to this, there is one printer, one scanner and one LED in the Computer Lab for teaching through presentation and video lectures to students. There is one lab attendant for handling the queries regarding online admission, fee payment, uploading of assignments, any other queries through mail, etc.

The University has developed well established computer lab and studio at parent Department of Communication Management & Technology. The Computer lab has the capacity of 20 learners and equipped with required Multimedia Software for Media Production Practical work. The Studio has two 4K High resolution Video Cameras, Teleprompter, filter lights, Umbrella lights, MAC Editing Machine, Console Machine and Plasma Screen etc for audio visual production work.

• Library Resources:

The infrastructure related to library resources is available in the present set-up of the university whereby, we have a well stacked library with latest books, journals, magazines and newspapers. It is named after the great Indian Jurist, Economist, Politician and Social Reformer Dr. Bhim Rao Ambedkar. The seating capacity of the University Library is 400 seats. By the end of December 2018, the Library has a collection of 106566 books. The Library in its electronic repository has the access to 7000+ e-journals from 14 publishers and 5 Databases. Moreover, 2149 e-books of national and international repute publishers have also been added in e-repository to enrich the students. University library provides different services to distance learners such as Air-Conditioned Reading Halls, Reading Facility for 400 students, Laptop Lab for SC/ST students consisting of 20 Laptops with internet facility and Potable Water facility on every floor. The online e-library resources namely INFLIBNET is also available for the accessibility of books and journals.



H. COST ESTIMATE OF THE PROGRAMME AND THE PROVISIONS

Cost estimates of programme is based on following components:

- > Study Material development and delivery such as cost of writing, vetting, editing, SLM conversion, printing and dispatch etc. (remuneration rates are attached)
- > PCP and related activities (remuneration rates are attached)
- > Examination and evaluation related activities (remuneration rates attached)
- > Internal assessment including assignment preparation and evaluation.
- Miscellaneous costs like advertising on FM radio broadcast, newspapers and SMS alert.
- > Salary to Teaching and Non-Teaching Staff.

Special Provisions:

- The Scheduled Caste students of Haryana whose family income from all sources is up to Rs. 2.5 Lacs per annum as prescribed by the State Govt. for Post Matric Scholarship and who produces, at the time of admission, the "Caste" and "Income" certificates issued by the competent authority, are not required to pay any kind of fees and they may pay a sum of Rs.1000/-(Refundable) as security/caution money at the time of admission. The eligible SC students will submit the Post Matric Scholarship forms at the time of admission/fee deposition. The hard copy of the filled post matric scholarship form is to be submitted within the stipulated time in the office of the Directorate of Distance Education failing which the candidate will not be allowed to appear in the examination. In case the student does not apply for scholarship or is found ineligible for award of scholarship or being eligible he/she is not awarded scholarship due to one or other reason, he/she will be liable to pay full fee along with late fine @ Rs. 10/- per day.
- The fee concession on the pattern of Guru Jambheshwar University of Science & Technology employees will also be extended to the employees of the office of the Directorate of Technical Education Haryana posted in the Head Office at Panchkula and the Audit staff posted in Guru Jambheshwar University of Science & Technology, Hisar for pursuing studies in all the programmes being run by the University. However, the Audit Staff will be entitled to avail such facility up to the period till they remain posted in Guru Jambheshwar University of Science & Technology, Hisar.
- > The students must remit the fee of subsequent semesters/installments as per the schedule without waiting for the result so as to enable the Directorate to supply the study material in time.



- > In case of sudden demise of any student during study the fees paid by him/her for the session of demise will be refunded, if claimed by parents
- > 25% concession of the total fees to serving/ retired military personal upto the rank of N.C.O. or of military personal killed or incapacitated wholly or partially during the war and their wards, will be allowed.

I. QUALITY ASSURANCE MECHANISM

• Quality Policy of University:

The Guru Jambheshwar University of Science & Technology (GJUST) is committed to achieve excellence in teaching, research, and extension by follow and implement following points of quality policy:

- > Imparting globally competitive education
- > Selecting and retaining competent and motivating faculty
- > Providing state or the art infrastructural resources
- > Promoting quality research culture
- > Ensuring transparent and accountable governance
- > Focusing on holistic development of learners
- > Symbiotic relationship with industry, other academic institutions, and society
- > Striving for financial self-reliance

• Advisory Committee:

The Advisory Committee headed by the Vice-Chancellor has been constituted to monitor the activities of the Directorate along-with matters related to quality assurance (List of members attached). The following is the composition of the Advisory Committee:

Vice-Chancellor, GJUS&T, Hisar	Chairman
Registrar, GJUS&T, Hisar	Member
Dean. of Colleges, GJUS&T, Hisar	Member
Dean, Academic Affair, GJUS&T, Hisar	Member
Director, Distance Education, Kurukshetra University	Member
Director, Distance Education, GJUS&T, Hisar	Member
Director, HSB, GJUS&T, Hisar	Member
Chairman, Deptt. of CSE, GJUS&T, Hisar	Member
Chairman, Deptt. of CM&T, GJUS&T, Hisar	Member
Chairman, Deptt. of Mathematics, GJUS&T, Hisar	Member



Prof. H. Bansal, HSB, GJUS&T, Hisar	Member
Prof. Saroj, Deptt. of CSE, GJUS&T, Hisar	Member
Prof. Manoj Dayal, Deptt. of CM&T, GJUS&T, Hisar	Member
Director, PDUCIC, GJUS&T, Hisar	Member
All Programme Co-ordinators, DE, GJUS&T, Hisar	Members

• Centre for Internal Quality Insurance (CIQA)

The CIQA also oversees the development and preparation of SLMs, then it is submitted to the Board of Studies concerned for the approval. The objective of establishment of Centre for Internal Quality Assurance (CIQA) is to develop and put in place a comprehensive and dynamic internal quality assurance system to provide high quality programmes of higher education in the Open and Distance Learning mode.

Composition of CIQA for the year 2022-2023:

Vice Chancellor, GJUS&T	Chairperson
Registrar, GJUS&T	Member
Dean of Colleges, GJUS&T	Member
Controller of Examination	Member
Director, HSB	Member
Chairperson, Deptt. of CMT	Member
Chairperson, Deptt. of Mathematics	Member
Prof. Pardeep Kumar, Director (DE), KUK	Member
Prof. Saroj, Deptt. of CSE	Member
Prof. R. Bhaskar, IGNOU, Delhi	Member
Prof. Suresh Mittal, HSB	Member
Director, PDUCIC	Member
Dy. Registrar (DE)	Member
DR/ AR (Accounts)	Member
DR/ AR (Academic)	Member
Director, Distance Eduation/ CIQA	Member Secretary
Sh. Vinod Goyal, Assistant Professor, DDE	Special Invitee
Dr. Sunaina, Assistant Professor, DDE	Special Invitee
Dr. Vizender Sihag, Assistant Professor, DDE	Special Invitee



Function of Internal Quality Assurance (CIQA)

Following are the main functions of CIQA:

- > To maintain quality in the services provided to the learners.
- To ensure continuous improvement in the entire operations of the Higher Education Institution.
- To identify the key areas in which the Higher Education Institution should maintain quality.
- > To disseminate information on quality assurance.
- > To device mechanisms for interaction and obtaining feedback from various

 Departments or Centres or Schools in the Higher Education Institution.
- > To suggest to the authorities of the Higher Education Institution, measures for qualitative improvement.
- To ensure the implementation of its recommendations through regular monitoring.
- To ensure participation of all stake holders namely, learners, teachers, staff, parents, society, employers and Government in Quality Improvement Process.
- To prepare Programme Project Report and ensure another launch of programme(s).
- Collection, collation and dissemination of accurate, complete and reliable statistics about the quality of the programme(s).

Activities of Centre for Internal Quality Assurance (CIQA)

Following are the main activities of CIQA:

- Prepare a Programme Project Report (PPR) for each programme according to the norms and guidelines prescribed by the Commission and wherever necessary by the appropriate regulatory authority having control over the programme;
- ➤ Get the Programme Project Report (PPR) approved by the appropriate authority of the Higher Educational Institution and the Commission before launch of the programme;
- Oversee the development of Study Learning Material (SLM), integration of Information and Communication Technology (ICT), setting up of Learning Centres and coordination with the parent institution and relevant Regulatory authorities;

- Put in place monitoring mechanism to ensure the proper implementation of Programme Project Reports (PPRs);
- Design annual plans for quality level enhancement at the level of the Higher Educational Institution and ensure their implementation;
- > Arrange for feedback responses from students, employers and other stakeholders for quality related institutional processes;
- > Develop quality benchmarks or parameters for the various academic and administrative activities of the Higher Educational Institution;
- Obtain information from other Higher Educational Institutions on various quality benchmarks or parameters and best practices;
- > Organise workshops or seminars on quality related themes and Higher Educational Institution wise dissemination of the proceedings of such activities;
- Suggest restructuring of programmes in order to make them relevant to the job market;
- > Develop and implement innovative practices in major areas leading to quality enhancement in services to the learners;
- > Create learner centric environment rather than institution centric environment;
- Adopt measures to ensure internalisation and institutionalisation of quality enhancement practices through periodic accreditation and audit;
- > Conduct or encourage system based research to bring about qualitative change in the entire system;
- > Coordinate between the Higher Educational Institution and the Commission for various quality related issues or guidelines;
- Record activities undertaken on quality assurance in the form of an annual report; and
- > To coordinate recognition and accreditation of the Higher Educational Institution.

J. EXPECTED PROGRAMME OUTCOMES

After the completion of the M.A. (Mass Communication) program, an individual can pursue their career in the following fields:

➤ Electronic Media: (Television & Radio) Anchor, News Reader, Producer & Editor, Radio Jockey, Radio Producer, Radio Anchor, News Reader, Media Marketing & Media Management.



- Print Media: Reporter, Editor, Media Marketing & Media Management, Reporter, Sub-Editor, Editor, Layout Designer & Photo Journalist.
- > Public Relations & Events: PR Consultant, Corporate Communicator and Event Manager.
- > Advertising & Branding: Client Servicing, Copywriting, Visualize and Accounts Manager.
- > Social Media: Content Development, Media Design.

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SAMPLE

SELF-LEARNING MATERIAL (SLM)

FOR

MASTER OF ARTS (MASS COMMUNICATION)

(Through Open Distance Learning)



<u>Directorate of Distance Education,</u> <u>Guru Jambheshwar University of Science & Technology,</u> <u>Hisar, Haryana</u>

(Established by State Legislature Act 17 of 1995 & Recognised by UGC Act 1956 u/s 12-B & 2 (F) ('A+', GRADE NAAC ACCREDITED)

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SUBJECT: ADVERTISIN	NG CAMPAIGN MANAGEMENT
COURSE CODE: MSM-531 C	AUTHOR: DR. SUNAINA
LESSON NO-10	VETTER: DR. M.R. PATRA
DEVELOPING M	IARKETING STRATEGY

STRUCTURE

- 10.0 Learning Objectives
- 10.1 Introduction
- 10.2 Developing Marketing Strategy
 - 10.2.1 What is a Strategy?
 - 10.2.2 Marketing Strategy
 - 10.2.3 Types of marketing plan and strategies
 - 10.2.4 Steps taken to develop a suitable Marketing Strategy:
 - 10.2.5 Types of marketing strategies
- 10.3 SWOT Analysis
 - 10.3.1 Why do we use SWOT Analysis?
 - 10.3.2 Steps to do SWOT Analysis
 - 10.3.3 Functions of SWOT Analysis
 - 10.4.1 Steps to formulate a strategic marketing plan
 - 10.4.2 How to write a Marketing strategy plan
 - 10.4.3 Steps in marketing planning process
 - 10.4.4 Difference between Marketing Strategy and Marketing Plan

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10.4 Check Your Progress

10.5 Summary

10.6 Keywords

10.7 Self-Assessment Test

10.8 Answers to Check Your Progress

10.9 Suggested Readings

10.0 LEARNING OBJECTIVES

After reading this lesson you will be able to understand:

- > how to develop marketing strategy
- > types of marketing plan and strategies
- > steps taken to develop a suitable marketing strategy
- > types of marketing strategies
- > swot analysis
- > why do we use SWOT analysis
- > steps to do SWOT analysis
- > functions of SWOT analysis
- > steps to formulate a strategic marketing plan
- > strategic marketing plan
- > difference between marketing strategy and marketing plan

10.1 INTRODUCTION

A Marketing Strategy is the long term planning of business objectives that the company wants to achieve. For these to be achieved it is important to choose well the specific actions to consolidate the reputation of products and services or increase sales in the market. Utilizing opportunities is vital to find the target market and to be able to make customers loyal to the organization so that the positioning of the company gets stronger.

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It is important to define how you want to position the product/service in the market in order to achieve positioning among customers and fulfil customer and organization relationship loyalty. Is the method to create sales opportunities, also to communicate and position the product or service and to translate the operational lines that allow reaching a target market through the Right Channels.

10.2 DEVELOPING MARKETING STRATEGY

Marketing is building of relationship between a buyer and a seller. It is the way of selling the product and to convince the buyers and build a strong connection with them. Marketing can be done through either an ad or through brochure. It can also be done through various social media platforms like Twitter, Instagram, Facebook, etc. Marketing can be done for one single person or for a large audience. Buyers get attracted towards the marketing procedures depending on their needs and requirements. It can range from advertisement of the product to selling and delivering of the products to the consumers. It is a process of divergence of the attention of the consumers to buy the products of a certain organization rather than from the competitor sellers.

It is basically promotion of the product and giving insights about the benefits of buying the product or the service. Customers get attracted towards the offer that keeps them in low risk with the standard quality and reasonable price of the product.

7 Principles or Ps of Marketing:

- Product: Product refers to the chain of product a company chooses to sell.
 Product of a company must be unique, useful, visually appealing and must be well packaged to attract the customers to buy it.
- 2. **Price**: Price of the product is set by considering the price of the product being offered by the competitors. Price of the product must be set at affordable rates but it must cover the cost of making and profits set by the company.
- 3. Place: Place includes the place of production, the area of distribution, the stores at which the product is sold. It must be made sure by the company that the product is available to all the customers and at all the locations with ease.
- 4. **Promotion**: Promotion of a product/service is done by using various tools of marketing like advertising, direct sales, public relations, personal selling or by

- offering great discounts, offers and trials on the product by which we attract the potential buyers.
- 5. **People**: People include the buyers, employees, staff members, management and other teams who are a part of buying and selling of products. Marketing involves satisfaction of buyers as well as sellers.
- 6. **Process**: This step involves the entire process starting from production to delivery. It makes sure that the entire process is running smoothly and effectively.
- 7. **Physical environment**: Physical environment includes facilities provided to them at the place of purchasing a product and a good ambient environment which can make them happy and ensures quality of product.

Stages of Marketing

- The first and foremost stage of marketing involves selection of the product that
 needs to be sold. It requires proper planning of the options that would be
 available to the customers to the process of packaging that would be done after
 the product is being made.
- 2. Before launching of the product, it is important to do a research test of the product on the target audience or the focus group. This helps in the proper judgment of the product or service before selling it to the common audience. It helps in establishment of the brand in the market and the analysis of the competitors in the market.
- 3. Advertisement is the third stage in the marketing process. It includes promotion of the product through various campaigns, media events, direct advertising and paid partnership. It is the technique of selling the product and reaching door to door to the buyers.
- 4. Selling of the product is the fourth and the last stage of the marketing process. It involves the process of selling the product. Products are being sold through a chain of suppliers, ranging from wholesalers to retailers. Products can be sold to various platforms i.e., locally, nationally, internationally or online.

10.2.1 What is a Strategy?

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Strategy is a plan of action taken in order to achieve certain goal or target. It refers to decisions, missions or completion of any project. Strategy is a one to one step taken to reach towards a certain goal. It is the process of adoption of certain practices in order to compete with the contemporary sellers. It is the overall plan or the task of completion of a project or a judgment. It is a direction towards the attainment of certain goals. There are various strategies planned according to different levels of business. It can range from corporate strategy to operational strategy.

Strategy involves the whole process of planning and thinking various methodologies to reach a certain target. Strategy is the blueprint of various goals and targets of an organization or the business group.

10.2.2 MARKETING STRATEGY

A suitable marketing strategy helps in proper vision and development of suitable business goals. It should be planned in consultation with the team of the company involved. It is a wide - reaching plan which helps in effective implementation of the strategy of the business. It helps in locating the customers and the benefits and performances of the product to be sold. There is a difference between marketing plan and strategy. While marketing plan is used to analyze the current situation and scenario of the business, marketing strategy is used for the coming years to realize the performance to be done regarding the product and the plan of action to be implemented. A suitable marketing strategy is important to reach few goals:

- 1. Selling more products and efficiency to be maintained from the previous year and with the suppliers in competition.
- 2. Improving the network of customers in reaching a new milestone.

10.2.3 TYPES OF MARKETING PLAN AND STRATEGIES

- 1. Market penetration strategy: In this type of strategy, marketers sell the current product to current customers. They find new uses of the product and new places for distribution so that it can reach maximum consumers at ease. This strategy is less risky as the company already knows about the market and customers.
- 2. Market development strategy: In Marketing development strategy, company tries to expand the market for the sales of product. They sell the existing products

in the new markets and they try growing their scale. This strategy is risky as the marketers are not known to the new markets.

- 3. Product development strategy: Under this strategy, companies create new products for the existing customers and develop good relationships with the current customers. This strategy is risky for the marketers as interests of consumers keep changing and new products might not suit the current customers.
- 4. Diversification strategy: This strategy involves the production of new products and introducing them to the new markets. This strategy involves a lot of risk as targeting new customers and new market might take company to either very high position in the market or make it a zero-profit company.

10.2.4 STEPS TAKEN TO DEVELOP A SUITABLE MARKETING STRATEGY

1) Locating budget and goals of the business

Business goals should be specific, smart and time bound. It should have crisp targets that need to be covered in the coming years. For example one should have clear understanding of the profits to be attained from the company and revenue to be generated in the coming years. Besides this, the other important goals that can be kept in mind can be:

- Reaching new markets
- Improving the authenticity of the brand
- Launching new products or services

2) SWOT Analysis

SWOT Analysis helps in the implementation of the goal to be achieved. It is the calculation of various scenarios and the current marketing program. It includes measuring the pros and cons of the strategy, weaknesses in the plan and threats from the other competitors. It also helps in understanding the target markets and audiences. It is a process to understand the profits and losses that the organization can incur apart from the maturity of your services or the products.

3) Identification of the offerings



Customers reach towards the services or the product if they find something beneficial out of it. Every target audience has categorized expectations from the business group. As the business grows, it is difficult to reach the expectations of the wide audience and therefore it is important to identify and categorize the needs and demands of the target audience to reach their expectations. To do this, a fictional image of the various target groups or persons need to be created. It helps in the broad analysis of the requirements and view of different target audience while buying a product. After categorization, one can identify the various groups and the products or services can be delivered according to their demands and expectations.

4) Creation of the bucket list

It involves recognition of the short-term goals and creation of the activity plan while reaching a certain target. There are various marketing campaigns that are set in order to reach a particular goal. For example campaign to launch Partner marketing.

10.2.5 TYPES OF MARKETING STRATEGIES

1) Content marketing

It involves giving knowledge about the product or the service through various sources like blogs, e-books, webinars, videos, podcast, etc. This information is relevant to attract the buyers and who are most likely to purchase your product or service.

2) Inbound marketing

It attracts the customers to visit the company website. It works for all types of businesses and is the most effective way of marketing rather than the traditional marketing methods.

3) Social media marketing

Social media is being used by every person these days. It provides the platform to various business organizations through various social media channels i.e., Facebook, Instagram, YouTube, LinkedIn, Twitter etc. It helps in increasing the visibility of the product and reduces the expenditure drawn through other

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marketing strategies. It helps in targeting the lead audience drawn on social media platforms.

4) Transactional marketing

Various retail companies use promotional strategies in order to encourage and attract customers to buy their products and services. They use various mechanisms like promotional events, promo codes, discounts, etc. It helps the interested audience to reach the stores for buying products and services.

5) Scarcity marketing

This type of marketing involves reducing the number of buyers by providing access of the product to only selected buyers. This in most cases is done because of the higher quality of the product or due to the unavailability of the acquiring raw materials.

6) Seasonal marketing

Seasonal events are created by the retailers to attract new customers. These special events boost the sales up and deliver variety to both old and new customers.

10.3 SWOT ANALYSIS

SWOT refers to Strengths, Weaknesses, Opportunities and Threats of the business. This approach helps a business group in identifying the factors that would help it in the growth and managing the future performance. Strengths prove to be an advantage for the business in its growth and development while weaknesses are the obstacle in the growth of the certain group. Certain external environmental conditions cause threat to the businesslike Government regulations, competitors, societal changes, etc. Other than threats, there are opportunities as well in the external environment that the business group can seek in order to attain profits.

In order to reach out for profit, business group should calculate certain conditions:

- 1. What are the recent trends that can prove to be profitable for the organization?
- 2. What are the changes in the technology or the market place that can be profitable for the organization?

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3. What are the changes in the lifestyle, that the company can make profit from?

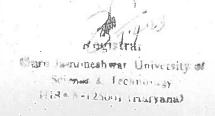
10.3.1WHY DO WE USE SWOT ANALYSIS?

Business cannot run without taking care of the internal and external factors, which helps an organization in attaining profit. SWOT Analysis helps in the calculation of the position where the organization stands. It tries to figure out the weaknesses, strengths, threats and, opportunities of an organization. It realizes the market trends, latest technologies and customer requirements for the growth and development of the business group. It helps in attaining opportunities and calculating the threats that can prove to be an obstacle in the ladder of success.

Strengths, Weaknesses, Opportunities and Threats of SWOT Analysis

S in SWOT refers to Strengths. Strength is the basic requirement of an organization that can help it in reaching higher position from the other competitors. While opportunities can be reached out through the availability of external factors, but the strength of an organization can be created internally through strategic planning and its implementation. Strength can be developed internally by creating certain conditions that can help an organization in the difficult times. For example, products created by a company should always have certain variety, so that if the sale of one product goes down, the other products can thrive. Other than this, products that are made should have a standard quality and reasonable amount so that the buyers do not face much issue and are content with the organizations performance which caters to more involvement of new customers.

W in SWOT refers to Weaknesses. Weaknesses are the things in a company which might harm the reputation as well as functioning of the company. Weaknesses might be related to internal or external factors which might hamper the growth of the company. For example, internal conflicts, departmental miscommunications, rivalry with the competitors, low quality products, etc. Weaknesses are identified and eliminated by the company to avoid decline in growth of the company and to maintain a good reputation in the market.



O in SWOT stands for Opportunities. When a company wants to grow, it looks forward to external opportunities they can grab and take the company to greater heights. Opportunities are some external factors which might help the company to stand out in the market and maintain a good brand name in the market. For example, adaptation of advanced technology, highly skilled workers looking for job in the company, good relationships with the manufacturers, training opportunities for the employees and more such opportunities which might be beneficial for the company, its employees and the customers.

T in SWOT stands for Threats. Threats are external factors which are risky or might be harmful for the company. Unlike weaknesses, threats are the factors which cannot be controlled by the company and they totally depend upon the factors outside the organization. Companies cannot control the threats but can prepare themselves to face the threats or adjust their functioning according to the incoming threats. For example, changing trends in the market, new competitors in the market, building of new interests in the customers, etc.

10.3.2. STEPS TO DO SWOT ANALYSIS

1. Engaging all the staff members

All the staff members of an organization should conduct a meeting and brainstorm the opportunities, threats and weaknesses of their company. Engagement of various members from different departments can prove to be fruitful for the organization as different person would have different perspective and idea for the growth of the company. It would help in the successful implementation of the SWOT Analysis.

2. Sharing of thoughts

It would be a failure of the company while conducting SWOT Analysis to not take and discuss the ideas of each of the members present in the meeting. Every member should brainstorm and write up their idea and after writing in private, it should be discussed with the fellow mates.

3. Ranking the ideas

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In this method, the ideas given by various team mates are ranked according to the preference of fellow team mates. This is done through voting system. The idea which gets the highest votes is included in the planning and its implementation.

10.3.3 FUNCTIONS OF SWOT ANALYSIS

1. Strategy building

SWOT analysis is used for building strategies for a company. Strategies are usually made by considering the internal as well as the external factors affecting the performance of the company. Usually aggressive strategies are used when strengths and opportunities are balanced and overpowering the threats and weaknesses and defensive strategies are used when the company's weaknesses and threats overpower the positive side.

2. Matching and converting

SWOT analysis is used for matching and converting in the company. Matching involves matching the strengths to opportunities and weaknesses to threats. Converting involves converting weaknesses into strengths and threats into opportunities by making deliberate efforts.

3. Corporate planning

Corporate planning involves planning the process of achieving the stipulated goals of an organization by following some steps using the SWOT analysis which are: setting objectives, doing SWOT analysis, studying existing strategies, formulating new strategies, implementation of strategies, regulating plans for strategic planning and monitoring the functioning and implementation of the strategies.

4. Marketing

In marketing, competitor analysis is done using the SWOT analysis of own company and of competitors as well. To sustain in the market, the marketing team needs to do a lot of market research and formulate strategies by considering the market conditions, competitor position, competitor profits and revenue generation and more.

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10.4.1 STEPS TO FORMULATE A STRATEGIC MARKETING PLAN

1. Set your marketing goals

To start marketing, a company must formulate some marketing goals which need to be fulfilled during the process of marketing. The motive of the company should be to achieve these goals within the set time.

2. Conduct a marketing audit

Marketing audit involves reviewing all the activities conducted in the recent past and evaluate their success. All these activities might involve advertisements, past campaigns and more which are or were a part of marketing audit.

3. Conduct market research

Research involves studying something in depth. Market research is done to study the market in depth and analyzing various factors influencing the market. Market research educates the marketers about various unknown or hidden facts which might be a problem to the marketers and it also helps in identifying the needs and interests of the buyers.

4. Analyze the research

After conducting the market research, the researcher needs to analyze the data collected by using various research tools and then analyzing it. After analyzing the data, researcher gathers findings and conclusions which may include the current scenario of the market, interests and needs of the current or potential buyers, target audience and position of competitors. This step would help the marketers to start developing market strategies.

5. Identify the target audience

With the help of market research and its analysis, marketers are able to find out about their target audience i.e. who are the actual or potential consumers of your product or services. Target audience can be of any place, age group, gender, culture or any other social group. After getting to know about the target audience, the marketers can segment, target and reposition audience in the market.

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6. Determine the budget

Before jumping to the development of market strategies, the company must decide upon the budget they have for the marketing. The marketing budget is decided by considering the type of market they're dealing in.

7. Develop marketing strategies

After determining the budget, company is ready to develop the market strategies for the business. Each and every strategy must be well thought and developed by covering at least one goal or objective of the company. At this point of time, company can also revise its goals to achieve better results in future.

8. Develop an implementation schedule

After developing the strategies, an implementation schedule is made to make sure that the work is done on time. In the implementation schedule, work is allotted to a person whom is to be completed within a stipulated period of time.

9. Create an evaluation process

Evaluation of the process involves controlling and monitoring the implementation of the marketing strategies and plan. It is done to evaluate the progress of the company i.e. from where they started and where they are today. This involves analyzing if the goals of the company are achieved or not. Evaluation of the process determines the success or failure of the marketing campaign.

10.4.2 HOW TO WRITE A MARKETING STRATEGY PLAN

To develop a marketing strategy plan, one must deeply study the market, the competitors and the customers.

Here are some steps describing the technique to write a marketing strategy plan:

1. Define your customer

A company must be aware of its target audience as well as target market. The customer is the one who directly consumes your product or services so therefore marketer must be aware of the demographics, interests, needs, class and type of the consumers.

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2. Know your products

The seller must be fully aware of the product he is dealing with. The seller must be aware of the value their product is adding in the lives of the customers. A product is successful only if it adds value to the emotions of the customers. Therefore, marketers must focus on how your business can benefit the customers and their experience.

3. Research your competition

To stand out in the market, it is mandatory for you to give the best to your customers. To leave all your competitors behind, you must do complete research and identify their weaknesses and take advantage of that and improve your prices, products, facilities, services and everything which might attract the customers.

4. Know your USP

To persuade customers why they should choose you over your competitors, you must introduce them to the Unique Selling Preposition (USP) you offer to them. USP includes the unique thing your company has that makes you unique and which may benefit the customers as well.

5. Outline your resources

While planning the marketing strategy, budget should be considered and all the expenses should be planned under the budget. Other than budget, other resources like skills of the personnel, workforce of the company, technology and all the other resources must be combined and given importance to while preparing the marketing strategies.

6. Define your marketing methods

After deciding upon all the other things like goals, target market, audience and other factors, marketer must decide the marketing methods they are going to use to promote the products or services. Whether they are going to use print media, electronic media, digital media and what tools will they use of these media platforms.

10.4.3 STEPS IN MARKETING PLANNING PROCESS

1. Mission



- Mission Statement
- Corporate objectives

2. Situation analysis

- Identify opportunities
- 5C analysis
 - > Company
 - Customers
 - > Competitors
 - > Collaborators
 - > Climate

• SWOT analysis

- > Strengths
- > Weaknesses
- > Opportunities
- > Threats

• PEST analysis

- > Political
- > Economical
- > Social
- > Technical

3. Marketing Strategy

- Define your target audience
- Set measurable goals
- Develop budget

4. Marketing mix

- Product development
- Pricing
- Promotion
- Place and distribution

5. Implementation and control

- Put plan into action
- Monitoring results

Process:

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- Mission: At first, company sets its mission or a particular goal or the reason why
 the company exists, what is its motive and how they will benefit others. Under
 mission, a statement stating the entire mission is written and objectives of the
 company are also stated.
- 2. Situation Analysis: Situation analysis involves computing the internal and external factors of company that affect its business. To evaluate the position, performance and efficiency of a company, many kinds of techniques are used to analyze the company. These techniques include SWOT analysis, PEST analysis and 5C analysis. These techniques help a company to identify strengths, weaknesses, position and performance of a company in the market.
- 3. Marketing Plan: After the completion of the process of analysis, company develops a marketing plan in which they decide the target audience on the basis of age, gender, interests, preferences and other demographics. They also set certain marketing goals and objectives which are reformed after the analysis. Also, to fulfill the requirements of the entire marketing plan, budget is also formed to execute the marketing plan.
- 4. Marketing Mix: Situation analysis is the basis of all the other marketing process. Therefore, after analysis, it is figured out which techniques of marketing mix will be used to promote the product and services of a company. Marketing mix is a step in which the focus is on how to promote a business. Marketing mix involves the use of 7 Ps of marketing which are Product, Place, Price, Promotion, Physical environment, People and Process. All these Ps are followed and products are services are then directed towards the customers.
- 5. Implementation and control: This is the final step of marketing process in which the marketing plan is implemented and the company reaches out to customers to market its products and establish their brand. This stage is crucial as the plan is implemented and the plan must be checked at regular intervals to ensure the suitability and efficiency of the plan.

10.4.4 DIFFERENCE BETWEEN MARKETING STRATEGY AND MARKETING PLAN

Marketing strategy refers to the current position of the company by assessing the threats, weaknesses and strengths of the organization. It provides description of the

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products that are being sold by the company, services given and the total clients associated with the company. It gives the brief analysis of the position of the company in the market and its competitors. Marketing strategy refers to the business goals that an organization targets for the current year or the coming years.

Marketing plan is a practical road map for the implementation of the marketing strategy. It includes various tactics like pricing strategy, selling technique and unique promotional methodologies. Marketing plan is the practical application of various strategies planned and discussed by the business group.

1.5 CHECK	YOUR PROGRESS
a.	can be done for one single person or for a large audience.
b.	
c.	A plan of action taken in order to achieve certain goal or target is
d.	A suitablehelps in proper vision and development of suitable business goals.
e.	Marketers sell the current product to current customers in
f.	involves the production of new products and
	introducing them to the new markets.
g.	includes measuring the pros and cons of the strategy, weaknesses in the plan and threats from the other competitors.
h.	O in SWOT stands for

10.6 SUMMARY

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Marketing can be done through either an ad or through brochure. It can also be done through various social media platforms like Twitter, Instagram, Facebook, etc. Marketing can be done for one single person or for a large audience. It is basically promotion of the product and giving insights about the benefits of buying the product or the service.

When devising a marketing strategy, it is incredibly important to refer to the 7Ps of marketing; product, price, place, Promotion, people, process physical environment. These seven elements will guide your marketing strategy and serve as reminders to the most important aspects of a successful marketing strategy.

There are various types of marketing plan and strategies including Market penetration strategy, Market development strategy, Product development strategy and Diversification strategy. In market penetration strategy marketers sell the current product to current customers. However, market development strategy is used to try to expand the market for the sales of product. They sell the existing products in the new markets and they try growing their scale. In product development strategy companies create new products for the existing customers and develop good relationships with the current customers and diversification strategy that involves the production of new products and introducing them to the new markets. This strategy involves a lot of risk as targeting new customers and new market might take company to either very high position in the market or make it a zero-profit company.

10.7 KEYWORDS

Product: It refers to the chain of product a company chooses to sell. Product of a company must be unique, useful, visually appealing and must be well packaged to attract the customers to buy it.

Price: Price of the product is set by considering the price of the product being offered by the competitors. Price of the product must be set at affordable rates but it must cover the cost of making and profits set by the company.

Promotion: Promotion of a product/service is done by using various tools of marketing like advertising, direct sales, public relations, personal selling or by

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offering great discounts, offers and trials on the product by which we attract the potential buyers.

Physical environment: It includes facilities provided to them at the place of purchasing a product and a good ambient environment which can make them happy and ensures quality of product.

Strategy: It is a plan of action taken in order to achieve certain goal or target. It refers to decisions, missions or completion of any project.

SWOT Analysis: It helps in the implementation of the goal to be achieved. It is the calculation of various scenarios and the current marketing program. It includes measuring the pros and cons of the strategy, weaknesses in the plan and threats from the other competitors.

Inbound marketing: It attracts the customers to visit the company website. It works for all types of businesses and is the most effective way of marketing rather than the traditional marketing methods.

Scarcity marketing: This type of marketing involves reducing the number of buyers by providing access of the product to only selected buyers. This in most cases is done because of the higher quality of the product or due to the unavailability of the acquiring raw materials.

Marketing Mix: Situation analysis is the basis of all the other marketing process. Therefore, after analysis, it is figured out which techniques of marketing mix will be used to promote the product and services of a company. Marketing mix is a step in which the focus is on how to promote a business. Marketing mix involves the use of 7 Ps of marketing which are Product, Place, Price, Promotion, Physical environment, People and Process.

10.8 SELF-ASSESSMENT TEST

- 1. What do you understand by 7 Ps of marketing? Explain in detail.
- What is marketing strategy? Explain the steps taken to develop a suitable marketing strategy.

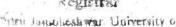
- 3. Define SWOT analysis. What are the important steps to do SWOT analysis?
- 4. What are the functions of SWOT analysis?
- 5. What are the steps to formulate a strategic marketing plan?
- 6. How to write a marketing strategic plan? What are main steps in marketing planning process?

10.9 ANSWERS TO CHECK YOUR PROGRESS

- a. Marketing
- b. Price
- c. strategy
- d. marketing strategy
- e. market penetration strategy
- f. Diversification strategy
- g. SWOT Analysis
- a. Opportunities

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- 12. K.C. Sethia, S.A.Chunawalla Fou

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Lesson Plan

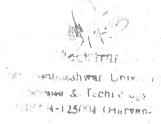
Name of Programme: M.A. Mass Communication 1st Semester

Nomenclature/Course Code: Introduction to Mass Communication (MSM-501)

Lesson	Lesson	Page No.
No		
1	Human Communication	1-17
2	History And Forms of Human Communication	18-34
3	Elements, Functions and Characteristics of Mass Communication	35-50
4	Process, Limitations and Future Trends of Mass Communication	51-65
5	Indian Traditional Forms of Communication	66-81
6	History, Role, Objectives & Functions of Mass Media	82-100
7	Mass Media In Rural-Urban Divide, Digital Media and Its Impact on Masses	101-114
8	Models Of Mass Communication-I	115-130
9	Models Of Communication-II	131-153
10	Models Of Communication-III	154-170
11	Theories Of Mass Communication-I	171-190
12	Theories Of Mass Communication-II	191-207
13	Media Systems	208-225
14	Effects Of Mass Communication	226-245
15	Role Of Mass Communication in Development of Developing	246-265
	Societies	

Nomenclature/ Course Code: Communications and Information Technology (MSM-502)

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Computer Technologies-I	43-59
Computer Technologies-II	60-77
Media Technology: Social Networking Sites and Webportal	78-90
E-Commerce: Buying, Selling & Advertisement	91-106
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Web Page Development	107-118
	Radio Broadcasting Computer Technologies-I Computer Technologies-II Media Technology: Social Networking Sites and Webportal E-Commerce: Buying, Selling & Advertisement



Nomenclature/ Course Code: Graphics and Media Production (MSM-503)

Lesson No.	Lesson	Page No.
1	Concept And Philosophy of Graphics and Production	1-24
2	Elements And Principles of Design	25-43
3	Type And Typefaces	44-62
4	Layout	63-77
5	Composing Methods	78-92
6	Desktop Publishing	93-111
7	Visual Copy of Reproduction, Colour and Production Aspects	112-131
8	Printing Paper, Costing and Estimation	132-149
9	Print Publications-I	150-164
10	Print Publications-II	165-186
11	Still Photography	187-208
12	Photographic Techniques	208-227
13	Audio-Visual Production	228-245
14	Video Camera	246-264

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-Nomenclature/ Course Code: Media Writing-1 (MSM-504)

Lesson No.	Lesson	Page No.
1	Introduction to Writing	1-19
2	Reporting an Introduction	20-30
3	News Writing	31-45
4	Feature Writing	46-57
5	Articles and Editorials	58-72
6	Writing for Public Relations	73-90
7	Development Writing	91-112

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Nomenclature/ Course Code: New Media and Social Media (MSM-505)

Lesson No.	Lesson	Page No.
1	Introduction To New Media	1-15
2	Role Of New Media	16-26
3	New Media: As A Medium of Communication	27-40
4	New Media as A Source of Information	41-55
5	Social Media and Mobile Communication	56-66
6	Types And Features	67-75
7	Social Media Vs Social Networking	76-87
8	Critics Of Social Media	88-102
9	Social Media Effects on Youth	103-111
10	Social Media Shopping Sites	112-131

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Lesson Plan

Name of Programme: M.A. Mass Communication 2nd Semester

Nomenclature/Course Code: Communication Research (MSM-511)

Lesson	Lesson	Page No.
No.		
1	Introduction To Research: Need, Concept, Role, Importance	3-19
	& Functions	59
2	Social And Communication Research, Basic Elements of	20-41
	Research	
3	Types Of Research	42-56
4	Research Design	57-77
5	Methods Of Media Research: I	78-89
6	Methods Of Media Research: II	90-107
7	Types Of Sampling	108-123
8	Content Analysis Method	124-133
9	Preparation Of Code Book and Coding	134-150
10	Data Analysis Techniques	151-170
11	Research Report Writing	171-188
12	Statistical Methods in Media Research-I	189-212
13	Statistical Methods in Media Research-II	213-243
14	Chi-Square Test	244-280



Nomenclature/Course Code: Management and Marketing Principles (MSM-512)

Lesson	Lesson	Page No.
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1	Management .	1-14
2	Human Resource Development & Future Trends in	15-27
	Management	
3	Definition and core Concept, Marketing Tools, P's- Product,	28-39
	Price, Place and Promotion	
4	Market Segmentation, Targeting and Positioning and	40-58
	Analyzing the Marketing Environment	
5	Promotion MIx: Advertising, Sales Promotion and Public	59-74
	Relations	
6	Brand Evaluation and New Trends in Marketing	75-86
7	Social Marketing	87-97
8	Role and Importance of Social Marketing	98-109
9	Monitoring and Evaluation of Social Marketing Programmes	110-122
10	Corporate Social Responsibility: A Marketing Tool	123-133

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Nomenclature/Course Code: Media Law (MSM-513)

Lesson	Lesson	Page No.
No.		
1	Freedom of Press, Reasonable Restrictions & Right to	3-18
	Information Act	633
2	Laws Of Defamation, Contempt of Court & Contempt Of	19-27
	Legislature	¥
3	Official Secrets Acts & Press and Books Registration Act	28-40
4	Copy Right Act	41-50
5	First Press Commission & Second Press Commission	51-60
6	Press Council of India	61-68
7	Broadcasting Code for AIR & DD	69-84
8	Cable Tv Regulations Act	85-92
9	Prasar Bharati Act, Film Censorship & Cinematograph Act	93-124
10	Reports Of Various Committees & Commissions	125-133
11	Code of ethics for journalist and Advertisements	134-146
12	Regulations for Public Relations (IPRA Code of Ethics)	147-163

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Nomenclature/Course Code: Media Writing -3 (MSM-514)

Lesson	Lesson	Page No.
No.		
1	Radio As Mass Media .	1-21
2	Privatization Of Radio	22-53
3	Radio Genres	54-64
4	Writing For Radio	65-80
5	Recording And Editing for Radio	81-100
6	Television as Mass Media	101-118
7	Television Genres	119-144
8	Camera Introduction	145-175
9	Introduction To Advertising	176-191
10	Writing For Advertising	192-216
11	Appeals In Advertising	217-234
12	Writing For Web	235-258
13	Writing For Social Media	259-274
14	Uses Of Social Networking Sites	275-305

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Lesson Plan

Name of Programme: M.A. Mass Communication 3rd Semester

Nomenclature/Course Code: Mass Media: Structure and Management (MSM-521)

Lesson	Lesson	Page No.
No.		To the state of th
1	Organizational Structure of Print Media	3-21
2	Air & Doordarshan: Structure & Services	22-36
3	Cinema In India	37-59
4	Advertising Agencies & Public Relations . Organizations	60-86

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Nomenclature/Course Code: Reporting (MSM-523A)

Lesson	Lesson	Page No
No.		
1	Concept, Meaning & Definitions of News: An	1-15
	Overview	
2	Source of News	16-27
3	Types of News	28-42
4	News and Views	43-56
5	Methods & Techniques of News Gathering	57-70
6	Structure of News Report	71-83
7	Techniques of News Writing	84-98
8	Types of Reporting: I	99-111
9	Types of Reporting: II	112-125
10	Types of Reporting: III	126-136
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12	Types of Reporting: V	150-161
13	Reports on Various Committee & Commissions	162-181
14	News Agency Reporting	182-203
15	Review & Criticism: I	204-217
16	Review & Criticism: II	218-240
17	Participatory Journalism	241-261
18	Journalism And Democracy	262-281



Nomenclature/Course Code: Advertising Creativity & Consumer Behaviour (MSM-523 C)

Lesson	Lesson	Page No.
No.		
1	Advertising	3-16
2	Theories & Models of Advertising	17-32
3	Aspects of Advertising	33-47
4	Creativity in Advertising	48-69
5	Layout & Design	70-80
6	Appeals in Advertising .	81-97
7	Consumer Behaviour	98-111
8	Advertising Agency	112-126

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Nomenclature/Course Code: PR Principles & Tools (MSM-523 D)

Lesson	Lesson	Page No.
No.		8
1	Public relations- An Overview	1-20
2	Public Relations in India	21-41
3	Public Relations in Relations to Advertising, Publicity and Marketing	42-62
4	Tools of Public Relations	63-79
5	Corporate Personality	80-95
6	Corporate Identity	96-114
7	Defining Corporate Image & Explaining Corporate Brand Management	115-120
8	Service Marketing -An Introduction	121-145
9	Service Delivery Process Management	146-164
10	Consumer Behavior in Service Marketing	165-189
11	Public Relations in Private Sectors	190-209
12	Public Relations in Public Sectors	209-227

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Nomenclature/Course Code: Electronic Media (MSM-523 DDE)

Lesson	Lesson	Page No.
No.		
1	Radio & Television as Mass Media	3-14
2	Radio Programme Production	15-27
3	Television Programme Production	28-45
4	Editing for Radio & Television	46-54
5	All India Radio & Doordarshan	55-64
6	Radio & Television Broadcasting	65-80

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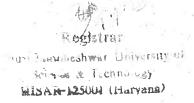
Name of Programme: M.A. Mass Communication 4th Semester Nomenclature/Course Code: Newspaper Production and Management (MSM-531-A)

Lesson : No.	Lesson	Page No.
1	Planning & Launch of New Newspaper	3-15
2	Newsprint: Sources and Types	16-30
3	Newspaper: Circulations, Strategies & Practices	31-44
4	News as Commodity	45-60
5	Editorial Policy of the Newspaper	61-85



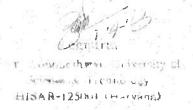
Nomenclature/Course Code: Radio & Television Production (MSM-531-B)

Lesson	Lesson	Page No.
No.		
1	Introduction to Media .	1-5
2	New Broadcasting Systems and Formats in Radio and TV	5-10
3	DTH and Cable TV Comparison and Contrast	10-20
4	Convergence of Information and Communication	20-30
	Technology	
5	Conceiving, Planning and Launching of New Radio and	30-42
	TV Programme	
6	Equipments and Techniques in Radio and TV	42-54
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7	Capturing Audience and Programme Marketing	54-61
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8	Revenue Generation Strategies	61-71
9	TV Production	71-85
10	Graphics, After Effects, Animation, Sound Effects,	85-97
	Lights and Chroma	er e
11	Structure and Functions of a TV Studio	97-110
12	Final Project	110-132



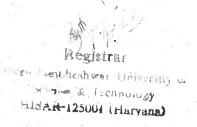
Nomenclature/Course Code: Advertising Campaign Management (MSM-531-C)

Lesson	Lesson	Page No.
No.		
1.	Campaign Management	3-12
2	Advertising Campaigns	13-21
3	Campaign Management Planning	22-32
4	Advertising Objectives	33-44
5	Creative Strategies and Tactics in Advertising	45-55
6	Content Writing for Advertising	56-68
7	Media: As Vehicle of Advertising	69-87
8	Budgeting	88-96
9	Political Campaign: Analysis and Management	97-109
10	Developing Marketing Strategy	110-123
11	Strategic Planning	124-136
12	Evaluating a Campaign	137-149
13	Pre-Launch Research and Marketing of a new Product	150-164
14	Campaign for the New Launch	165-178
15	Techniques and Process of Marketing	179-191
16	Product Branding	192-213



Nomenclature/Course Code: PR Campaign Planning (MSM-531-D)

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2	Public Opinion, Propaganda, Publicity	14-22	
3	Rumors, Misinformation, Disinformation	23-34	
4	Crisis Communication and Management	35-43	
5	Case Studies Related to PR	44-56	
6	Motivation, needs, involvement experience and learning	57-68	
7	Knowledge, Attitude models and consumer satisfaction	69-88	
8	Introduction to Social Marketing	89-98	
9	Basic principles of social marketing	99-123	
10	Social Marketing Strategies	124-138	
11	Case Studies of Corporate Social Marketing	139-153	
12	Introduction, need & Future	152-167	
13	Case studies of corporate social responsibility (CRS)	168-180	
	Efforts in India: Times of India, Indian Oil corporation & TATA		



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- 2. https://nptel.ac.in/courses/109104031
- 3. https://shodhganga.inflibnet.ac.in/simple-search?location=%2F&query=communication&rpp=10&sort_by=score&order=desc
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M.A. MASS COMMUNICATION

References and Suggested Readings

M.A. Mass Communication 1st Semester

Paper Code – MSM- 501

Paper Name- Introduction To Mas Communication

References and Suggested Readings:

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Paper Name- Communication & Information Technology

References and Suggested Reading:

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Paper Code - MSM- 503

Paper Name- Graphics & Media Production

References and Suggested Reading:

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- Visual Design & DTP By N.Sivaraman, G.Venkateswaran
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- Paper and Paperboard Packaging M.J. Kirwan
- Printing Press Management, by M. Pugazh,, Dr.M. Nandakumar
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Paper Code - MSM- 504

Paper Name- Media Writing-1

References and Suggested Reading:

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Paper Code – MSM- 505- DDE

Paper Name- New Media & Social Media

References and Suggested Reading:

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Paper Code – MSM- 511

Paper Name- Communication Research

References and Suggested Reading:

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Paper Code - MSM- 512

Paper Name- Management & Marketing Principles

References and Suggested Reading:

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Paper Code – MSM- 513

Paper Name- Media Law

References and Suggested Reading:

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 Limited, New Delhi.
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Paper Code - MSM- 514

Paper Name- Media Writing-3

References and Suggested Reading:

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Paper Code - MSM- 521

Paper Name- Mass Media Structure & Management

References and Suggested Reading:

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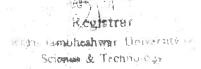
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Paper Code - MSM- 523 -A

Paper Name- Reporting

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Name of Programme: - Master of Science (Mathematics)

Sr. No.	Content	Page No.
1.	PPR	304-343
2.	Sample of SLM	344-370
3.	Table of Content	371-392
4.	References	393-397

PROGRAMME PROJECT REPORT

FOR

M.Sc. (MATHEMATICS)

(Through Open Distance Learning)



DIRECTORATE OF DISTANCE EDUCATION GURU JAMBHESHWAR UNIVERSITY OF SCIENCE &

("A+" Grade with (CGPA 3.38) by National Assessment and Accreditation Council (NAAC)

HISAR, HARYANA-1250001.

Programme Coordinatos

Programme Project Report:

NAME OF THE PROGRAMME: M.Sc. Mathematics

A. Programme's Mission & objectives:

The mission of programme is to provide high quality education in pure and applied mathematics to prepare the students for higher studies or professional career in mathematical sciences and related fields. The programme of M.Sc. mathematics will be a source for the promotion for problem solving, analytical thinking and utilizing technology for societal advancement. The programme offers an exciting opportunity to students who are interested in mathematics and who wish to understand how mathematics can be put up to practical use in science, engineering, and technology.

The main objectives of the programme are:

- > To democratize higher education in mathematics by providing access to large segments of the population, in particular the disadvantaged groups such as those living in remote and rural areas, including working people, women and others who wish to acquire and upgrade their mathematical knowledge and skills.
- > To acquire knowledge about the nature, concepts, methods, techniques, and study of advanced fields of Algebra, Analysis, Geometry, Topology and Applied Mathematics, together with some historical perspective of their development.
- > To develop an enhanced skill set that will put the learners at an advantage in careers in Mathematics, education, computer science, economics, engineering and finance etc.
- > To expose the learner to real life problems and promote the use of mathematics in industry and applied mathematics.
- > To train learners to learn in an autonomous manner and know how to tackle research in mathematical sciences.
- > To mitigate the need of qualified professionals having specialized knowledge in mathematics for better cognitive and socio-economic development of the country.

B. Relevance of Programme with HEI's Mission and Goals:

a) HEI'S Mission:

The University aspires to be a globally recognized Centre of excellence in the field of technical education and research. It strives to achieve this by introducing innovative joboriented courses, employing competent and motivated faculty, developing state-of-the-art infrastructure, striking purposeful linkages with industry and professional bodies, and promoting quality of work life on campus. The University focuses on the student community to imbue them with passion for knowledge and creativity and to promote sustainable growth in academic resources, student placements, holistic human

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development with a strong conviction for professional ethical, social, and environmental issues.

b) HEI'S Goals

The goals of the University as enshrined in the Act are to facilitate and promote studies and research in emerging areas of higher education with focus on new frontiers of and to achieve excellence in these and connected fields.

c) Programmes Offered to Achieve HEI's Mission and Goals:

The postgraduate Mathematics programme has a great relevance with the Mission and goals of the University. More than 250 aspirants per year get trained at PG level (MSc. Mathematics) at the University.

- > GJUS&T has already marked a significant footprint in Mathematics teaching and research by educating a large number of learners in Mathematics at postgraduate as well as undergraduate level. Mathematics Department has a collaborative association with other reputed Universities/Institutes in India.
- > This programme will help the economic and social growth of the country by producing more qualified Mathematician, which is basic need in today's competitive environment.
- > To prepare students to compete successfully for internship and teaching employment positions in government, employments in industry and non-profit organisations.

C. Nature of prospective target group of learners:

The University focuses on following diverse class of learners for M.Sc. Mathematics programme subject to fulfilment of minimum eligibility for admission.

- The students who are not able to take admission on regular basis.
- Unemployed Graduates
- Academic Faculty at T.G.T. level
- Government Officials
- Working Professionals in private sector

D. Appropriateness of programme to be conducted in open and distance learning mode to acquire skills and competence

The programme of M.Sc. Mathematics will meet the learning aspiration of higher mathematics by providing "second chance" to those who had to discontinue their formal education or could not join regular Colleges or Universities owing to social, economic, and other unavoidable constraints. The M.Sc. Mathematics prepares the student with mathematical skill required.

E. Instructional Design:

At the state and national level, the higher educational institutions are expected to provide quality education and education for all. Strategic plans for an institution that defines targets and measures of the programmes are to be achieved by the institution. Apart from providing physical infrastructure and maintaining administrative policies, The Directorate of

Parti Jambheshmu University of

Distance Education, is actively engaged in its academic development of course offered. The Department of Mathematics has designed its curriculum, several learning resource materials and feedback system through the Board of Studies. Learning Material through print media named Self-Learning Material (SLM) has been developed with the approach of self-explanatory, self-contained and self-motivating as per UGC DEB guidelines. The personal programme classes are conducted in every semester on a specified schedule.

i) Curriculum design:

The programme of M.Sc. Mathematics is divided in to four semesters. The scheme and syllabi of M.Sc. mathematics at directorate level has been adopted from the P.G. course of regular students of Department of Mathematics. Further the examination for students the ODL mode is conducted along with M.Sc. Mathematics regular mode students. The curriculum is designed by Board of Studies in Mathematics where external experts are also associated.

The scheme and syllabus being followed is attached in annexure (A).

ii) Duration of Programme:

The duration of Post Graduate Mathematics programme is 2 years (Four Semesters).

- 1. As per UGC guidelines, the candidate is required to complete the degree in N+2 years, where N stands for the normal or minimum duration prescribed for completion of the programme.
 - a) In exceptional circumstances a further extension of one year may be granted by the statutory body of the University.
 - b) During the extended period, the student shall be considered as a private candidate and shall not be eligible for ranking.
- 2. Further, the mercy chance, if any will be given within maximum allowed period of the programme as per UGC guidelines. In normal circumstances, only two chances will be given to pass re-appear examination.

iii) Faculty and Support staff:

The Directorate of Distance Education (DDE) of the University is headed by the director who is a full time faculty member (Professor) of the University appointed by Vice-Chancellor to facilitate the development, implementation and monitoring the programmes offered at DDE and to attend all administrative matters concerned with the activities of directorate. In addition, there is one full time faculty member of Directorate of Distance Education who is holding the position of Deputy Director. The supporting staff such as one Deputy Registrar, one Assistant Director, one Superintendent, two Deputy Superintendent, one Hindi Officer, Six Assistants and other clerical staff is coordinating the activities of Directorate of Distance Education (DDE) and looks after the problems of the distance students. The Supporting staff looks after the problems of the students through online admission help line, examination related work, study material delivery, grievance redressal and so on. The DDE is assisted by the IT CELL for the online uploading and evaluation of assignments and other student support activities. The DDE also assisted by Pt. Deendayal Upadhyaya Computer and Informatics Centre (PDUCIC) department for communicating

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important information to the distance student through Distance website of Guru Jambheshwar University of Science & Technology, Hisar. The PDUCIC department managed the Distance Website of the University.

There are two full time faculty members (dedicated to DDE) to coordinate the M.Sc. Mathematics programme. The faculty members of Department of Mathematics including 4 Professors, 02 Associate Professor and 4 Assistant Professors help in academic part of programme. Further the faculty members of neighbouring Universities also extents their help for development of study material and evaluation of assignments. Also, the supporting staffs from Directorate of Distance Education help in performing administrative functioning. For details of the faculty members and support staff members following link may be referred.

- 1. http://www.ddegjust.ac.in/contactus/dcontactus.htm
- 2. http://www.gjust.ac.in/department/mat/mat_fm.html

iv) Instructional Delivery Mechanism:

The Instructional system of the University comprises four components, viz, Self-Learning Material (SLM), Personal Contact Programme, Internal Assessments and End Term Examination.

- ➤ Self-Learning Material (SLM) The success and effectiveness of distance education systems largely depends on the study materials so it is necessary that the study material (SLM) must be ideal for easy and better understanding in self-learning mode. Learning Material through Print media named self-learning Material (SLM) is developed with the approach of self-explanatory, self-contained, self-motivating and self-evacuating followed by the UGC guidelines.
- ▶ Personal Contact Programme PCP sessions guide the learners as the programme proceeds. The date and venue for the PCP will be communicated to the learners through our website or SMS Service or WhatsApp group. During PCP, the learner gets guidance for better understanding of the programme and subject. The Personal Contact Programme (PCP) of 15 days duration for each semester programme will be arranged for the course by the respective program Coordinator at the University campus. The learners can get their doubts cleared with the help of subject experts to improve their self- learning capability. Learners are required to attend PCP sessions for all their respective subjects.
- > Internal Assessments-Distance education learners must depend much on self-study. To ascertain the writing skill and level of comprehension of the learner, assignment work is compulsory for all learners. The Directorate of Distance Education (DDE) of this University has an online portal for the uploading of the assignments and same has been evaluated online by the subject expert. Two assignments of 30 marks i.e., 15 marks each shall be allotted for each subject consists of questions with practical based. The assignment question papers will be uploaded to the website within a scheduled time and the learners shall be required to respond them within a specified period. The response of the learner is examined by a faculty member.
- > End Term Examination- At the end of every session learner will give theory exam for 70 marks for each subject. For examination, there will be of nine questions. The first question will be compulsory consisting of seven short questions of two marks each covering the entire syllabus (all four Units). In addition, eight more questions of 14



marks each will be set comprising from the entire syllabus and the students are required to attempt any four questions from these.

Student Support Services

The Directorate of Distance education of the University is provides the Student Support Services through online mode. Following are the main student support services provided by University through online mode:

- > Online Admission Portal for students.
- > Online fee portal for students .
- > SMS alert facility for the students for information related to PCPs, Project, Deadlines and Viva-voce etc.
- > Grievance handling mechanism is adopted with the help of supporting technical staff.
- > Practical Questions Based Assignments
- > On-line availability of Old Question Papers and study material
- > Comprehensive viva-voce is conducted after term end examination in the University.
- > Student Help Desk.

F. Procedure for Admission, curriculum transaction and Evaluation:

Admission: Admissions process are made through online mode. Admission fee is also collected through online payment gateway service.

Eligibility: B.A.(Hons.)/B.Sc.(Hons.) in Mathematics with atleast 50% marks (pass marks for SC Candidates of Haryana)
Or

B.A./B.Sc. with atleast 50% marks in aggregate with Mathematics as one of the subjects in each Semester/ Year of B.A./B.Sc. degree (pass marks for SC candidates of Haryana) and University retains the right to cancel any admission at any given point of time if any irregularity is found in the admission process, eligibility etc.

Fees Structure:

Instalment	Fee in Rs.	From Date	To Date
1st Instalment	9250/-*	31.07.2023	31.08.2023
2nd Instalment	6750/-	31.01.2024	31.03.2024
3rd Instalment	9250/-*	31.07.2024	31.08.2024
4th Instalment	6750/-	31.01.2025	31.03.2025

*includes 2500/- as University Registration fee in case of fresh admission and as continuation fee in case of promotion to next class/Year and 22000/- as University examination fee in the case of semester courses and 21000/- in the case of Annual Courses. In addition to above 2100/- as Student Fee ship (Alumni Fund) is also payable once in course duration at time of admission.

Financial Assistance: The post metric scholarship facility is provided to SC students of Haryana,

Registrar

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Registrar

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Curriculum transaction: SLMs (English version) in print and electronic medium are provided as approved by the Board of Studies and Academic Council of the University. PCP schedule for PG courses are prepared by program coordinator and notified well in advance on the official website of the University. SMS's of schedule are also sent to students on their registered mobile numbers/whatApp group. PCPs are conducted at parent University Campus. During the PCP sessions, teachers help the students and clarify their queries.

Evaluation The evaluation system of the programme is based on following components: Continuous evaluation in the form of the assignments (weightage: 30%): The assignments are to be uploaded online by students on University portal. Term-end examination (weightage: 70%): Term-end exams are to be held every year in the month of December (odd semester) and May (ever semester) along with regular students of M.Sc. Mathematics.

Updated Notification for its Learners: All notification regarding all the academic activities to be carried out by the University during the academic session are provided on the official website and student's registered mobile number of the learners. Further, the University notify all notification, assignment question papers, result and other related online.

G. Requirement of the Laboratory Support and Library Resources

Laboratory Support:

A well-equipped Computer lab with latest version of MS Office and internet facility is also available in the Directorate of Distance Education (DDE) of this University. This Computer Lab is established with an aim to meet the computing requirements of all the Distance learners of the University. This lab is equipped with 12 desktop computers of latest configuration, i.e., Window 7, Window 10 and I₃ processor. In addition to this, there is one printer, one scanner and one LED in the Computer Lab for teaching through presentation and video lectures to students. There is one lab attendant for handling the queries regarding online admission, fee payment, uploading of assignments, any other queries through mail, etc.

Library Resources:

The infrastructure related to library resources is available in the present set-up of the University whereby, we have a well stacked library with latest books, journals, magazines and newspapers. It is named after the great Indian Jurist, Economist, Politician and Social Reformer Dr Bhim Rao Ambedkar. The seating capacity of the University Library is 400 seats. By the end of December 2018, the Library has a collection of 106566 books. The Library in its electronic repository has the access to 7000+ e-journals from 14 publishers and 5 Databases. Moreover, 2149 e-books of national and international repute publishers have also been added in e-repository to enrich the students. University library provides different services to distance learners such as Air-Conditioned Reading Halls, reading facility for 400 students, Laptop Lab for SC/ST students consisting of 20 Laptops with internet facility and Potable Water facility on every floor. The online e-library resources namely INFLIBNET is also available for the accessibility of books and journals.

H. Cost Estimate of The Programme and The Provisions

Cost estimates of programme is based on following components:

Study Material development and delivery such as cost of writing, vetting, editing, SLM conversion, printing, and dispatch etc. (remuneration rates are attached)

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- PCP and related activities (remuneration rates are attached)
- Examination and evaluation related activities (remuneration rates attached)
- Internal assessment including assignment preparation and evaluation.
- Miscellaneous costs like advertising on FM radio broadcast, newspapers, and SMS alert.
- Salary to Teaching and Non-Teaching Staff.

Special Provisions:

The Scheduled Caste students of Haryana whose family income from all sources is up to Rs. 2.5 Lacs per annum as prescribed by the State Govt. for Post Matric Scholarship and who produces, at the time of admission, the "Caste" and "Income" certificates issued by the competent authority, are not required to pay any kind of fees and they may pay a sum of Rs.1000/-(Refundable) as security/caution money at the time of admission. The eligible SC students will submit the Post Matric Scholarship forms at the time of admission/fee deposition. The hard copy of the filled post matric scholarship form is to be submitted within the stipulated time in the office of the Directorate of Distance Education failing which the candidate will not be allowed to appear in the examination. In case the student does not apply for scholarship or is found ineligible for award of scholarship or being eligible he/she is not awarded scholarship due to one or other reason, he/she will be liable to pay full fee along with late fine @ Rs. 10/- per day.

- The fee concession on the pattern of Guru Jambheshwar University of Science & Technology employees will also be extended to the employees of the office of the Directorate of Technical Education Haryana posted in the Head Office at Panchkula and the Audit staff posted in Guru Jambheshwar University of Science & Technology, Hisar for pursuing studies in all the courses being run by the University. However, the Audit Staff will be entitled to avail such facility up to the period till they remain posted in Guru Jambheshwar University of Science & Technology, Hisar.
- The students must remit the fee of subsequent semesters/instalments as per the schedule without waiting for the result to enable the Directorate to supply the study material in time.
- In case of sudden demise of any student during study the fees paid by him/her for the session of demise will be refunded, if claimed by parents 25% concession of the total fees to serving/ retired military personal upto the rank of N.C.O. or of military personal killed or incapacitated wholly or partially during the war and their wards, will be allowed.

I. Quality Assurance Mechanism

• Quality Policy of University:

The Guru Jambheshwar University of Science & Technology (GJUST) is committed to achieve excellence in teaching, research, and extension by follow and implement following points of quality policy:

- > Imparting globally competitive education
- > Selecting and retaining competent and motivating faculty
- > Providing state of the art infrastructural resources
- > Promoting quality research culture
- > Ensuring transparent and accountable governance
- > Focusing on holistic development of learners
- > Symbiotic relationship with industry, other academic institutions, and society
- Striving for financial self-reliance



• Advisory Committee:

The Advisory Committee headed by the Vice-Chancellor has been constituted to monitor the activities of the Directorate along-with matters related to quality assurance (Functions and List of members attached). Student Counselling Centre for Internal Quality Assurance (CIQA) to be framed specially for Distance Education (DE) programmes as per the latest University Grants Commission (Open and Distance Learning Regulations), 2020. The DDE has an approved panel of experts for preparing SLM and this is being edited by the program coordinator.

Centre for Internal Quality Assurance (CIQA)

The CIQA also oversees the development and preparation of SLMs, then it is submitted to the Board of Studies concerned for the approval. The objective of establishment of Centre for Internal Quality Assurance (CIQA) is to develop and put in place a comprehensive and dynamic internal quality assurance system to provide high quality programmes of higher education in the Open and Distance Learning mode.

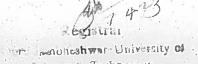
Composition of CIQA for the year 2021-22 & 2022-23:

<i>\sigma</i>	Vice Chancellor, GJUS&T	Chairperson
	the state of the s	•
	Registrar, GJUS&T	Member
	Dean of Colleges, GJUS&T	Member
	Controller of Examination	Member
	Director, HSB	Member
	Chairperson, Deptt. of CMT	Member
	Chairperson, Deptt. of Mathematics	Member
	Prof. Pardeep Kumar, Director (DE), KUK	Member
	Prof. Saroj, Deptt. of CSE	Member
	Prof. R. Bhaskar, IGNOU, Delhi	Member
	Prof. Suresh Mittal, HSB	Member
	Director, PDUCIC	Member
	Dy. Registrar (DE)	Member
	DR/ AR (Accounts)	Member
- >	DR/ AR (Academic)	Member
	Director, Distance Eduation/ CIQA	Member Secretary
\triangleright	Sh. Vinod Goyal, Assistant Professor, DDE	Special Invitee
\triangleright	Dr. Sunaina, Assistant Professor, DDE	Special Invitee
	Dr. Vizender Sihag, Assistant Professor, DDE	Special Invitee
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Function of Internal Quality Assurance (CIQA)

Following are the main functions of CIQA:

- > To maintain quality in the services provided to the learners.
- To ensure continuous improvement in the entire operations of the Higher Education Institution.
- To identify the key areas in which the Higher Education Institution should maintain quality.
- To disseminate information on quality assurance.
- > To device mechanisms for interaction and obtaining feedback from various Departments or Centres or Schools in the Higher Education Institution.
- To suggest to the authorities of the Higher Education Institution, measures for qualitative improvement.
- To ensure the implementation of its recommendations through regular monitoring.



- To ensure participation of all stake holders namely, learners, teachers, staff, parents, society, employers, and Government in Quality Improvement Process.
- > To prepare Programme Project Report and ensure another launch of programme(s).
- Collection, collation, and dissemination of accurate, complete and reliable statistics about the quality of the programme (s).

Activities of Centre for Internal Quality Assurance (CIQA)

Following are the main activities of CIQA:

> Prepare a Programme Project Report (PPR) for each programme according to the norms and guidelines prescribed by the Commission and wherever necessary by the appropriate regulatory authority having control over the programme.

> Get the Programme Project Report (PPR) approved by the appropriate authority of the Higher Educational Institution and the Commission before launch of the

programme.

> Oversee the development of Study Learning Material (SLM), integration of Information and Communication Technology (ICT), setting up of Learning Centres and coordination with the parent institution and relevant Regulatory authorities.

> Put in place monitoring mechanism to ensure the proper implementation of

Programme Project Reports (PPRs).

> Design annual plans for quality level enhancement at the level of the Higher Educational Institution and ensure their implementation.

> Arrange for feedback responses from students, employers and other stakeholders for quality related institutional processes.

> Develop quality benchmarks or parameters for the various academic and administrative activities of the Higher Educational Institution.

> Obtain information from other Higher Educational Institutions on various quality benchmarks or parameters and best practices.

- > Organise workshops or seminars on quality related themes and Higher Educational Institution wise dissemination of the proceedings of such activities.
- > Suggest restructuring of programmes in order to make them relevant to the job market.
- > Develop and implement innovative practices in major areas leading to quality enhancement in services to the learners.
- > Create learner centric environment rather than institution centric environment.
- > Adopt measures to ensure internalisation and institutionalisation of quality enhancement practices through periodic accreditation and audit.
- Conduct or encourage system-based research to bring about qualitative change in the entire system.
- > Coordinate between the Higher Educational Institution and the Commission for various quality related issues or guidelines.
- > Record activities undertaken on quality assurance in the form of an annual report;
- > To coordinate recognition and accreditation of the Higher Educational Institution.

J. Expected Programme Outcomes:

 Teaching of Mathematics at University/ Colleges /Engineering institutes, Senior Secondary Schools

 Understanding of the fundamental axioms in mathematics and capability of developing ideas based on them.

Inculcate mathematical reasoning.



- Prepare and motivate students for research studies in mathematics and related fields.
- Provide knowledge of a wide range of mathematical techniques and application of mathematical methods/tools in other scientific, engineering domains, software industry, DRDO scientist and research labs.
- Provide advanced knowledge on topics in pure mathematics, empowering the students to pursue higher degrees at reputed academic institutions.
- Strong foundation on algebra and topology which have strong links and application in diverse fields.
- Good understanding of abstract algebra which can be used in modern online cryptographic technologies.
- Nurture problem solving skills, thinking, creativity through assignments, project work
- Assist students in preparing (personal guidance, books) for competitive exams e.g., NET, GATE, etc.

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Scheme & Syllabi for M.Sc.(Mathematics) Through Distance Learning w.e.f. 2021-22

			Total: 116 credits			
ner Code	Nomenclature	No. of Credits	External	Internal	Total	
mester I			Marks	Marks	Marks	
AL 511	Algebra	5 credits (5-0-0)	7Q	30	100	
AL 512	Real Analysis	5 credits (5-Q-0)	70	30	100	
AL 513	Mechanics	5 credits (5-0-0)	70	30	100 :	
AL 514	Ordinary Differential Equations -I	5 credits (5-0-0)	70	30	100	
AL 515	Complex Analysis-I	5 credits (5-0-0)	70	30	100	
AL 516	Programming with Fortran (Theory)	5 credits (5-0-0)	70	30 🐃	100	
AP 517	Programming with Fortran (Practical)	1.5 credits (0-0-3)	70	30	100	
	tal Credits	31.5 credits				
mester II						
AL 521	Abstract Algebra	5 credits (5-0-0)	70	30	100	
AL 522	Measure & Integration Theory	5 credits (5-0-0)	70	30	100	
AL 523	Methods of Applied Mathematics	5 credits (5-0-0)	70	30	100	
AL 524	Ordinary Differential Equations-II	5 credits (5-0-0)	70	30	100	
AL 525	Complex Analysis-II	5 credits (5-0-0)	70	30	100	
AL 526	Advanced Numerical Methods	5 credits (5-0-0)	70	30	100	
AP 527	Computing Lab-Matlab	1.5 credits (0-0-3)	70	30	100	
To	tal Credits	31.5 credits				
mester II	т					
AL 631	Topology	5 credits (5-0-0)	70	30	100	
AL 632	Partial Differential Equations	5 credits (5-0-0)	70	30	100	
IAL 633	Mechanics of Solids-I	5 credits (5-0-0)	70	30	100	
IAP 634	Computing Lab-II	1.5 credits (0-0-3)	70	30	100	
AL 636	Fluid Mechanics	5 credits (5-0-0)	70	30	100	
IAL 637	Advanced Discrete Mathematics	5 credits (5-0-0)	70	30	100	
To	tal Credits	26.5 credits				
emester I		5 11 (5 0 0)	70	30	100	
IAL 641	Functional Analysis	5 credits (5-0-0)	70		100	
IAL 642	Differential Geometry	5 credits (5-0-0)	70	30		
IAL 643	Mechanics of Solids-II	5 credits (5-0-0)	70 70	30	100 100	
IAL 644	Integral Equations	5 credits (5-0-0)	70	30		
IAL 645	Advanced Fluid Mechanics	5 credits (5-0-0)	70	30	100	
1AP 648	Computing Lab-3	1.5 credits (0-0-3)	70	30	100	
To	otal Credits	26.5 credits				

Note:-

- In external major exam there will be nine questions in all taking two questions from each unit and one
 compulsory question (Question No. 1). The compulsory question will consist of seven short answer type
 questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to
 attempt five questions selecting one from each unit and the compulsory question.
- 2. 30% of the maximum marks in each paper are allocated for internal assessment based on two assignments (handwritten) each of 10 marks and 10 marks in written exam during PCP. (For more details see Prospectus)



M.Sc. (Mathematics) 1ST Semester MAL-511 Algebra 5 Credits (5-0-0)

Time : 3 Hours

Marks for Major Test (External): 70 Marks for Internal Exam: 30

Total :100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize students with some properties of groups and fields which have many applications in Coding Theory.

Unit - I

Zassenhaus's lemma, Normal and Subnormal series. Scheiers Theorem, Composition Series. Jordan-Holder theorem. Commutators and their properties. Three subgroup lemma of P.Hall.

Unit - II

Central series. Nilpotent groups. Upper and lower central series and their properties. Invariant (normal) and chief series. Solvable groups. Derived series. Field theory. Prime fields.

Unit - III

Extension fields. Algebraic and transcendental extensions. Algebraically closed field. Conjugate elements. Normal extensions. Separable and inseparable extensions. Perfect fields. Construction with ruler and campass. Finite fields

Unit - IV

Roots of unity. Cyclotomic Polynomial in ϕ_n (x). Primitive elements. Automorphisms of extensions. Galois extension. Fundamental theorem of Galois theory. Solutions of polynomial equations by radicals. Insolvability of the general equation of degree 5 by radicals. Suggested Readings

1. I.N.Herstein, Topics in Algebra, Wiley Eastern Ltd., New Delhi, 1975.

2. P.B. Bhattacharya, S.K.Jain and S.R.Nag Paul, Basic Abstract Algebra (2nd Edition), Cambridge University Press, Indian Edition, 1997.

3. I.D.Macdonald, Theory of Groups.

4. M.Artin, Algebra, Prentice-Hall of India, 1991.

5. I.S.Luther and I.B.S.Passi, Algebra, Vol. I-Groups, Vol.II-Rings, Narosa Publishing House (Vol. I-1996, Vol. II-1999).

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MAL-512: REAL ANALYSIS

5 Credits (5-0-0) Time : 3 Hours

Marks for Major Test (External): 70

Marks for Internal Exam: 30

Total :100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To acquaint the students with the topics of Riemann-Stieltjes integral, sequence and series of functions, power series, functions of several variables and with the basic concepts of

measurability of sets.

Unit - I

Definition and existence of Riemann-Stieltjes integral, properties of the integral, integration and differentiation, the fundamental theorem of Calculus, integration of vector-valued functions, rectifiable curves.

Unit - II

Sequences and series of functions, point-wise and uniform convergence, Cauchy criterion for uniform convergence, Weierstrass M-test, Abel's and Dirichlet's tests for uniform convergence, uniform convergence and continuity, uniform convergence and Riemann-Stieltjes integration, uniform convergence and differentiation, Weierstrass approximation theorem, Power series, uniqueness theorem for power series, Abel's theorems.

Functions of several variables, linear transformations, derivatives in an open subset of R^{η} , chain rule, partial derivatives, interchange of the order of differentiation, derivatives of higher orders, Taylor's theorem, Inverse function theorem, Implicit function theorem, Jacobians, extremum problems with constraints, Lagrange's multiplier method.

Unit - IV

Set functions, intuitive idea of measure, elementary properties of measure, measurable sets and their fundamental properties, Lebesgue measure of sets of real numbers, algebra of measurable sets, Borel sets, equivalent formulation of measurable sets in terms of open, closed, F_{σ} and G_{δ} sets, non measurable sets.

Suggested Readings

- 1. W. Rudin, Principles of Mathematical Analysis (3rd edition) McGraw-Hill, Kogakusha, 1976, International student edition.
- 2. T.M.Apostol, Mathematical Analysis, Narosa Publishing House, New Delhi, 1985.
- 3. R.R. Goldberg, Methods of Real Analysis, John Wiley and Sons, Inc., New York, 1976.
- 4. P.K.Jain and V.P.Gupta, Lebesgue Measure and Integration, New Age International (P) Limited Published, New Delhi, 1986 (Reprint 2000).
- 5. H.L.Royden, Real Analysis, Macmillan Pub. Co. Inc. 4th Edition, New York, 1993.

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MAL-513: MECHANICS

5 Credits (5-0-0) Time: 3 Hours Marks for Major Test (External): 70 Internal Assessment:30 Total Marks:100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize students with the basic concepts of moment of inertia; representation of the equations of motion for mechanical systems using the Lagrangian and Hamiltonian formulations of classical mechanics.

Unit - I

Moments and products of Inertia, Theorems of parallel and perpendicular axes, principal axes, The momental ellipsoid, Equimomental systems, Coplanar distributions. Generalized cooordinates. Holonomic and Non-holonomic systems. Scleronomic and Rheonomic systems. Lagrange's equations for a holonomic system.

Unit - II

Lagrange's equations for a conservative and impulsive forces. Kinetic energy as quadratic function of velocities. Generalized potential, Energy equation for conservative fields. Hamilton's variables. Donkin's theorem. Hamilton canonical equations. Cyclic coordinates. Routh's equations. Poisson's Bracket. Poisson's Identity. Jacobi-Poisson Theorem.

Unit - III

Hamilton's Principle. Principle of least action. Poincare Cartan Integral invariant. Whittaker's equations. Jacobi's equations. Hamilton-Jacobi equation. Jacobi theorem. Method of separation of variables. Lagrange Brackets. Condition of canonical character of a transformation in terms of Lagrange brackets and Poisson brackets. Invariance of Lagrange brackets and Poisson brackets under canonical transformations.

Unit - IV

Gravitation: Attraction and potential of rod, disc, spherical shells and sphere. Laplace and Poisson equations. Work done by self-attracting systems. Distributions for a given potential. Equipotential surfaces. Surface and solid harmonics. Surface density in terms of surface harmonics.

Suggested Readings

- 1. F.Chorlton, A Text Book of Dynamics, CBS Publishers & Dist., New Delhi.
- 2. F.Gantmacher, Lectures in Analytic Mechanics, MIR Publishers, Moscow.
- 3. A.S. Ramsey, Newtonian Gravitation, The English Language Book Society and the Cambridge University Press.
- 4. Louis N. Hand and Janet D. Finch, Analytical Mechanics, Cambridge University Press.

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MAL-514: ORDINARY DIFFERENTIAL EQUATIONS-I

Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

5 Credits (5-0-0) Time: 3 Hours

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To acquaint the students with existence and uniqueness of solutions of initial value problems, continuation of solutions, differential inequalities and with Sturm-Liouville boundary

value problems.

Unit - I

Initial-value problem and the equivalent integral equation, ϵ -approximate solution, Cauchy-Euler construction of an ϵ -approximate solution, Equicontinuous family of functions, Ascoli-Arzela theorem, Cauchy-Peano existence theorem. Uniqueness of solutions, Lipschitz condition, Picard-Lindelof theorem for local existence and uniqueness of solutions, solution of initial-value problems by Picard method.

Unit - II

Approximate methods of solving first-order equations: Power Series Methods, Numerical Methods. Continuation of solutions, Maximum interval of existence, Extension theorem, Dependence of solutions on initial conditions and function. Matrix method for homogeneous first order systems, nth order equation (Relevant topics from the books by Coddington & Levinson, and by Ross).

Unit - III

Total differential equations: Condition of integrability, Methods of Solution. Gronwall's differential inequality, Ccomparison theorems involving differential inequalities.

Unit - IV

Zeros of solutions, Sturms separation and comparison theorems. Oscillatory and nonoscillatory equations, Riccati's equation and its solution, Pruffer transformation, Lagrange's identity and Green's formula for second-order equation, Sturm-Liouville boundary-value problems, properties of eigen values and eigen functions. (Relevant topics from the books by Birkhoff & Rota, and by Ross).

Suggested Readings

- 1. E.A. Coddington and N. Levinson. Theory of Ordinary Differential Equations, McGraw Hill, NY, 1955.
- 2. G. Birkhoff and Rota, G.C. Ordinary Differential Equations, John Wiley and sons inc., NY. 1978.
- 3. S.L. Ross. Differential Equations, John Wiley and sons inc., NY, 1984.
- 4. Boyce, W.E. and Diprima, R.c. Elementary Differential Equations and Boundary Value Problems, John Wiley and sons Inc., NY, 1986.
- 5. Philip Hartman, Ordinary Differential Equations, John Wiley & Sons, NY (1964).

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MAL-515: COMPLEX ANALYSIS-I

5 Credits (5-0-0) Time: 3 Hours Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize with the analytic and meromorphic functions and their applications.

Unit - I

Cauchy Riemann Equations, Analytic functions, Reflection principle, Complex Integration, Antiderivatives, Cauchy-Goursat Theorem, Simply and Multiply connected domains, Cauchy's Integral formula, Higher Order derivatives,

Unit - II

Morera's theorem, Cauchy's inequality, Liouville's theorem, The fundamental theorem of Algebra, Maximum Modulus Principle, Schwarz lemma, Poisson's formula, Taylor's Series, Laurent's Series.

Unit - III

Isolated Singularities, Meromorphic functions, Argument principle, Rouche's theorem, Residues, Cauchy's residue theorem, Evaluation of Integrals, Mittag Leffler's expansion theorem.

Unit - IV

Branches of many valued functions with special reference to arg z, Log z, z^a. Bilinear transformations, their properties and classification, definition and examples of conformal mapping.

Suggested Readings

- 1. H.A. Priestly, Introduction to Complex Analysis, Clarendon Press, Oxford, 1990.
- 2. J.B. Conway, Functions of one Complex variable, Springer-Verlag, International student-Edition, Narosa Publishing House, 1980.
- 3. L.V. Ahlfors, Complex Analysis, McGraw-Hill, 1979.
- 4. Mark J. Ablowitz and A.S. Fokas, Complex Variables: Introduction and Applications, Cambridge University Press, South Asian Edition, 1998.
- 5. S. Ponnusamy, Foundations of Complex Analysis, Narosa Publishing House, 1997.
- 6. J.W.Brown and R.V.Churchill, Complex Variables and Applications, McGraw Hill, 1996.

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MAL-516: PROGRAMMING WITH FORTRAN (THEORY) (w.e.f. 2020-2021)

Semester 1st

Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

5 Credits (5-0-0) Time: 3 Hours

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize the students with the basics of computer and programming concepts of

scientific language Fortran 90/95.

Unit-I

Computer Programming in Fortran 90/95: Numerical constants and variables, arithmetic expressions; implicit declaration, named constants, input/output; List directed input/output statements, Format specifications. Declarations including KIND specifications, Use of complex variables.

Logical expressions and control flow; conditional flow; IF structure, Block DO loop Counted controlled Loops. arrays; input/output of arrays, arrays with variable size using ALLOCATABLE statement, arrays handling functions, multidimensional arrays.

Unit-III

Strings, declaration of character variables, character handling functions, operators on strings, Subprograms, Types of Subprograms, Significance Functions; subroutines; Procedures with array arguments, Recursion.

Unit - IV

Derived types, Elements of derived type, arrays and derived type Processing files, Sequential file, Direct Access file; creating and closing a file, Pointers and Accessing elements using pointers with example

Suggest Readings

- 1. V. Rajaraman: Computer Programming in FORTRAN 90 and 95, Printice-Hall of India Pvt. Ltd., New Delhi.
- 2. J.F. Kerrigan: Migrating to FORTRAN 90, Orielly Associates, CA, USA. 3. M. Metcalf and J. Reid: FORTRAN 90/95 Explained, OUP, oxford, UK

imcheshwar. Unive ciens & Fechro ogs MAL-517: PROGRAMMING WITH FORTRAN (PRACTICAL)

Marks for Major Test (External): 70

1.5 Credits (0-0-3) Internal Assessment: 30

Total Marks: 100

Practical will be based on the paper MAL 516; Programming with Fortran (Theory).

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M.Sc. (Mathematics) 2ND Semester MAL-521: ABSTRACT ALGEBRA

5 Credits (5-0-0) Time: 3 Hours Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize students with some properties of rings and modules.

Unit - I

Canonical Forms-Similarity of linear transformations. Invariant subspaces. Reduction to triangular forms. Nilpotent transformations. Index of nilpotency. Invariants of a nilpotent transformation.

Unit - II

The primary decomposition theorem. Jordan blocks and Jordan forms. Rational canonical form. Generalized Jordan form over any field.

Unit - III

Cyclic modules. Free modules. Simple modules. Semi-simple modules. Schur's Lemma. Noetherian and Artinian modules and rings Hilbert basis theorem.

Unit - IV

Wedderburn-Artin theorem. Uniform modules, primary modules, and Noether-Lasker theorem. Smith normal form over a principal ideal domain and rank. Fundamental structure theorem for finitely generated abelian groups and its application to finitely generated Abelian groups.

Suggested Readings

- 1. I.N.Herstein, Topics in Algebra, Wiley Eastern Ltd., New Delhi, 1975.
- 2. P.B. Bhattacharya, S.K.Jain and S.R.Nag Paul, Basic Abstract Algebra (2nd Edition), Cambridge University Press, Indian Edition, 1997.
- 3. P.M.Cohn, Algebra, Vols. I, II & III, John Wiley & Sons, 1982, 1989, 1991.
- 4. N.Jacobson, Basic Algebra, Vols. I & II, W.H.Freeman, 1980.
- 5. I.S.Luther and I.B.S.Passi, Algebra, Vol. I-Groups, Vol.II-Rings, Narosa Publishing House (Vol. I-1996. Vol. II-1999).

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MAL-522: MEASURE AND INTEGRATION THEORY

Marks for Major Test (External): 70

5 Credits (5-0-0) Internal Assessment: 30

Time: 3 Hours Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To acquaint the students with the topics of measurable functions, Lebesgue integral, Differentiation of monotonic functions and L^p spaces.

Unit - 1

Measurable functions and their equivalent formulations, Properties of measurable functions. Approximation of measurable functions by sequences of simple functions, Measurable functions as nearly continuous functions, Egoroffs theorem, Lusin's theorem, Convergence in measure and F. Riesz theorem for convergence in measure, Almost uniform convergence.

Unit - II

Shortcomings of Riemann Integral. Lebesque Integral of a bounded function over a set of finite measure and its properties, Lebesgue integral as a generalization of Riemann integral, Bounded convergence theorem, Lebesgue theorem regarding points of discontinuities of Riemann integrable functions, Integral of non-negative functions, Fatou's Lemma, Monotone convergence theorem, General Lebesgue Integral, Lebesgue convergence theorem.

Unit - III

Vitali's covering Lemma, Differentiation of monotonic functions, Functions of bounded variation and its representation as difference of monotonic functions. Differentiation of Indefinite integral. Fundamental Theorem of Calculus. Absolutely continuous functions and their properties.

Unit-IV

 L^p spaces, Convex functions, Jensen's inequalities, The Holder and Minkowski inequalities, Convergence and Completeness of L^p space, Riesz-Fisher Theorem, Bounded linear functional on L^p space, Riesz representation theorem.

Suggested Readings

- 1. G. De Barra, Measure Theory and Integration, Weiley Eastern Limited, 1981.
- 2. P.K.Jain and V.P.Gupta, Lebesgue Measure and Integration, New Age International (P) Limited Published, New Delhi, 1986 (Reprint 2000).
- 3. H.L.Royden, Real Analysis, Macmillan Pub. Co. Inc. 4th Edition, New York, 1993.
- 4. R. G. Bartle, The elements of Integration and Lebesgue Measure, John Wiley and Sons, 1995
- 5. Walter Rudin, Principles of Mathematical Analysis (3rd edition) McGraw-Hill, Kogakusha, 1976, International student edition.

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MAL-523: METHODS OF APPLIED MATHEMATICS

Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

5 Credits (5-0-0) Time: 3 Hours

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize the students with basics of Fourier Transforms and its applications, Curvilinear Co-ordinates, probability distributions, multiple correlation and sampling

distributions.

Unit - I

Fourier Transforms - Definition and properties, Fourier transform of some elementary functions, convolution theorem, Application of Fourier transforms to solve ordinary & partial differential equations.

Unit - II

Curvilinear Co-ordinates: Co-ordinate transformation, Orthogonal Co-ordinates, Change of Co-ordinates, Cartesian, Cylindrical and spherical co-ordinates, expressions for velocity and accelerations, ds, dv and ds² in orthogonal co-ordinates, Areas, Volumes & surface areas in Cartesian, Cylindrical & spherical co-ordinates in a few simple cases, Grad, div, Curl, Laplacian in orthogonal Co-ordinates, Contravariant and Co-variant components of a vector, Metric coefficients & the volume element.

Unit - III

Sample spaces, random variables, Mathematical expectation and moments, Binomial, Poisson, Geometric, Uniform and Exponential distributions.

Unit - IV

Normal & Gamma distributions. Multiple Regression, Partial and Multiple Correlation, t, F and Chi-square distributions, weak law of large numbers and Central Limit Theorem.

Suggested Readings

- 1. Sneddon, I. N., The Use of Integral Transforms.
- 2. Schaum's Series, Vector Analysis.
- 3. Gupta, S.C. and Kapoor, V.K., Fundamentals of Mathematical Statistics

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MAL-524: ORDINARY DIFFERENTIAL EQUATIONS-II

Marks for Major Test (External): 70

5 Credits (5-0-0) Internal Assessment: 30
Time: 3 Hours Total Marks: 100

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Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize the students with linear systems, adjoint systems, non-linear systems and with some motivating problems of calculus of variation.

Unit - I

Linear systems, fundamental set and fundamental matrix of a homogeneous system, Wronskian of a system. Abel - Liouville formula, Adjoint systems, Reduction of the order of a homogeneous system.

Unit - II

Systems with constant coefficients, Method of variation of constants for a non-homogeneous system, Periodic solutions, Floquet theory for periodic systems, Linear differential equations of order n, Lagrange's identity, Green's formula (Relevant topics from the book by Coddington and Levinson and by S.L.Ross).

Unit - III

Nonlinear differential equations, Plane autonomous systems and their critical points, Classification of critical points-rotation points, foci, nodes, saddle points. Stability, asymptotical stability and unstability of critical points, Almost linear systems, Perturbations, Simple critical points, Dependence on a parameter, Liapunov function, Liapunov's method to determine stability for nonlinear systems, Limit cycles, Bendixson non-existence theorem, Statement of Poincare-Bendixson theorem, Index of a critical point (Relevant topics from the books of Birkhoff & Rota, and by Ross).

Unit - IV

Motivating problems of calculus of variations, Shortest distance, Minimum surface of revolution, Brachistochrone problem, Isoperimetric problem, Geodesic, Fundamental lemma of calculus of variations, Euler's equation for one dependent function and its generalization to 'n' dependent functions and to higher order derivatives, Conditional extremum under geometric constraints and under integral constraints. (Relevant topics from the book by Gelfand and Fomin)

Suggested Readings

- 1. E.A. Coddington and N. Levinson. Theory of Ordinary Differential Equations, McGraw Hill, NY, 1955.
- 2. G. Birkhoff and Rota, G.C. Ordinary Differential Equations, John Wiley and sons inc., NY, 1978.
- 3. S.L. Ross. Differential Equations, John Wiley and sons inc., NY, 1984.
- 4. J.M. Gelfand and Fomin, S.V., Calculus of Variations, Prentice Hall, Englewood, Cliffs, New Jersy, 1963.
- 5. Boyce, W.E. and Diprima, R.C., Elementary Differential Equations and Boundary Value Problems, John Wiley and sons Inc., NY, 1986.
- 6. Philip Hartman, Ordinary Differential Equations, John Wiley & Sons, NY (1964).

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MAL-525: COMPLEX ANALYSIS-II

5 Credits (5-0-0) Time: 3 Hours Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize the concepts of analytic continuation, properties of entire functions and

conformal mapping.

Unit - I

Analytic Continuation; Spaces of Analytic functions, Hurwitz's theorem, Montel's theorem, Uniqueness of direct analytic continuation, Uniqueness of analytic continuation along a curve, power series method of analytic continuation. Monodromy theorem and its consequences,

Unit - II

Entire function; Canonical products, Weierstrass' factorisation theorem, Exponent of Convergence, Order of an entire function, Jensen's formula, Borel's theorem. Hadamard's factorization theorem, Hadamard's three circles theorem.

Unit - III

The range of an analytic function. Bloch's theorem. The Little Picard theorem. Schottky's theorem. Montel Caratheodory and the Great picard theorem.

Unit - IV

Conformal mapping; Riemann mapping theorem, Harmonic function on a disk, Dirichlet problem. Green's function. Harnack's inequality and theorem, Univalent functions. Bieberbach's conjecture (Statement only) and the 1/4 theorem.

Meromorphic Function; Gamma function and its properties, Riemann Zeta function, Riemann's

functional equation. Runge's theorem, Poisson-Jensen formula.

Suggested Readings

- 1. H.A. Priestly, Introduction to Complex Analysis, Clarendon Press, Oxford, 1990.
- 2. J.B. Conway, Functions of one Complex variable, Springer-Verlag, International student-Edition, Narosa Publishing House, 1980.
- 3. L.V. Ahlfors, Complex Analysis, McGraw-Hill, 1979.
- Mark J. Ablowitz and A.S. Fokas, Complex Variables: Introduction and Applications, Cambridge University Press, South Asian Edition, 1998.
- 5. S. Ponnusamy, Foundations of Complex Analysis, Narosa Publishing House, 1997.
- 6. J.W. Brown and R.V. Churchill, Complex Variables and Applications, McGraw Hill, 1996.

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MAL-526: ADVANCED NUMERICAL METHODS

Marks for Major Test (External): 70

5 Credits (5-0-0) Internal Assessment: 30 Time: 3 Hours Total Marks: 100

Note: Attempt five questions in all. The question paper will consist of **four** sections. **Question No. 1** will contain **seven** short answer type questions without any internal choice covering the entire syllabus and shall be **compulsory**. Each of the four sections (**I-IV**) will contain two questions and the students are required to attempt **one** question from each section. **All questions carry equal marks**.

Unit-I

Interpolation and Approximation

Interpolation: Introduction of Gauss' Central Difference Formulae, Stirling's Formula, Bessel's Formula without proof, Everett's Formula, Relation between Bessel's and Everett's Formulae. Hermite's Interpolation Formula, Divided Differences and Their Properties, Newton's General Interpolation Formula, Interpolation by Iteration, Inverse Interpolation, Double Interpolation. Approximation: Norms of functions — Best Approximations: Least squares polynomial approximation—Approximation with Chebyshev polynomials—Piecewise Linear & Cubic Spline approximation.

Unit-II

Numerical Differentiation and Integration

Numerical Differentiation: Errors in Numerical Differentiation, Cubic Splines Method, Differentiation Formulae with Function Values, Maximum and Minimum Values of a Tabulated Function.

Numerical Integration: Boole's and Weddle's rules, use of Cubic splines, Romberg integration, Newton-Cotes integration formula, Euler-Maclaurin formula, Adaptive Quadrature method. Gaussian integration, Numerical evaluation of Singular integrals, Numerical evaluation of double and triple integrals with constant and variable limits and its application, Solution of integral equations.

Unit-III

Iterative Methods for Linear and Nonlinear System

Iterative Method for System of Linear Equations: General iterative method. Jacobi and Gauss-Seidel method. Relaxation method. Necessary and sufficient conditions for convergence. Speed of convergence. S.O.R. and S.U.R. methods. Determination of eigenvalue by iterative methods. Ill conditioned system. Solution of tridiagonal system,

Iterative Method for System of Non-linear Equations: Complex root of non-linear equation, solution of simultaneous non-linear equations.

Unit-IV

Numerical solution of ordinary differential equations

Initial value problems: Runge Kutta methods of fourth order, Multistep method- The Adams-Moulton method, stability, Convergence and Truncation error for the above methods. Milne's method, Cubic spline method, Simultaneous and higher order equations,

Boundary Value Problems: Second order finite difference, Shooting method and Cubic spline methods, Numerov's method, Mixed BVPs.

Suggested Readings:

- 1. C.F. Gerald and P.O. Wheatley: Applied Numerical Methods, Low-priced edition, Pearson Education Asia (2002), Sixth Edition.
- 2. D. Kincaid and W. Cheney, Numerical Analysis: Mathematics of Scientific Computing, 3rd Edn., AMS (2002).
- 3. D.V. Griffiths and I.M. Smith, Numerical Methods for Engineers, Blackwell Scientific Publications (1991).

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- 4. John H Mathews, Numerical Methods for Mathematics, Science and Engineering, Prentice Hall of India (1994).
- 5. K. E. Atkinson, Introduction to Numerical Analysis, 2nd Edn., John Wiley (1989).
- 6. M.K. Jain: Numerical Solution of Differential Equations, 4th Edition, New Age (2018).
- 7. M.K.Jain, S.R.K.Iyengar, R.K.Jain, Numerical Methods for Scientific and Engineering, Computation, 7th Edition, New Age (2019).

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MAP-527: COMPUTING LAB-MATLAB

1.5 Credits (3-0-0) Time: 3 Hours Marks for Major Test (External): 70
Internal Assessment: 30
Total Marks: 100

Note: The question paper will consist of **Two** sections Theory and Practical. **Question No.1 based on theory** will contain **Four**short answer type questions without any internal choice covering the entire syllabus and shall be **compulsory**. Each of the two sections will contain two questions and the students are required to solve two questions practically taking **one** question from each section. **All questions carry equal marks**.

Unit-I

MATLAB Basics: working in the command window, Arithmetic Operations, Elementary Math Built-in Functions, Variable names, script files, Matrices and Arrays, Input to a Script file, Output commands-The disp Command, The *fprintf* Command, the save and load commands, Importing and Exporting data. two-dimensional plots, formatting a plot. Multiple plots on the same page.

Operations with Arrays: Creating, Concatenating, and Expanding Matrices, Removing Rows or Columns from a Matrix, Reshaping and Rearranging Arrays, Multidimensional Arrays, Array Indexing, Mathematical Operations with Arrays, Systems of Linear Equations and solutions.

Unit-II

Programming in MATLAB: Relational and logical operators, Conditional statements: if-end, if-else-end, if-else-end Structures. Theswitch-case Statement. **LOOPS**: for-end, while-end loops, Nested loops and nested conditional statements, thebreak and continue commands. Creating a function file, local and global variables.

Symbolic math: Symbolic objects and symbolic expressions, Creating symbolic objects, creating symbolic expressions, the find sym command and the default symbolic variable, Changing the form of an existing symbolic expression.

Suggested Readings:

- 1. Amos Gilat: MATLAB® An Introduction with Applications, Fourth Edition, JOHN WILEY & SONS, INC, 2011.
- 2. Stephen J. Chapman, MATLAB® Programming for Engineers, Fourth Edition, Thomson, 2008
- 3. MATLAB® Mathematics, www.mathworks.com.
- 4. DingyüXue and YangQuan Chen, Solving Applied Mathematical Problems with Matlab®, Chapman & Hall/CRC, 2009.
- 5. Moler C B. Numerical computing with MATLAB. MathWorks Inc, 2004

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M.Sc. (Mathematics) 3rd Semester

MAL-631: TOPOLOGY

5 Credits (5-0-0) Time: 3 Hours Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize the students with basics of a topological space, compactness, connectedness, separation axioms and product spaces..

Unit - I

Definition and examples of topological spaces. Closed sets. Closure. Dense subsets. Neighbourhoods. Interior, exterior and boundary points of a set. Accumulation points and derived sets. Bases and sub-bases. Subspaces and relative topology. Alternate methods of defining a topology in terms of Kuratowski Closure Operator and Neighbourhood Systems. Continuous functions and homeomorphism.

Unit - II

Compactness. Continuous functions and compact sets. Basic properties of compactness. Compactness and finite intersection property. Sequentially and countably compact sets. Local compactness and one point compactification. Compactness in metric spaces. Equivalence of compactness, countable compactness and sequential compactness in metric spaces.

Unit - III

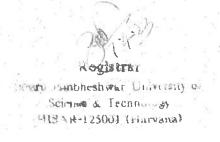
Connected spaces. Connectedness on the real line. Components. Locally connected spaces. First and Second Countable spaces. Lindelof 's theorem. Separable spaces. Second Countability and Separability. Separation axioms. T_0 , T_1 , and T_2 spaces. Their characterization and basic properties.

Unit - IV

Regular and normal spaces. Urysohn's Lemma. T_3 and T_4 spaces. Complete regularity and Complete normality. $T_{3/1/2}$ and T_5 spaces. Product topological spaces, Projection mapping. Tychonoff product topology in terms of standard sub-base and its characterizations.

Suggested Readings

- 1. W.J.Pervin, Foundations of General Topology, Academic Press Inc. New York, 1964.
- 2. J.L.Kelley, General Topology, Van Nostrand, Reinhold Co., New York, 1995.
- 3. James R. Munkres, Topology, A First Course, Prentice Hall of India Pvt. Ltd., New Delhi, 2000
- 4. George F.Simmons, Introduction to Topology and Modem Analysis, McGraw-Hill Book . Company, 1963.
- J.Dugundji, Topology, Allyn and Bacon, 1966 (Reprinted in India by Prentice Hall of India Pvt. Ltd.).
- 6. K.D. Joshi, Introduction to General Topology, Wiley Eastern Ltd., 1983.



MAL-632: PARTIAL DIFFERENTIAL EQUATIONS

Marks for Major Test (External): 70

Internal Assessment: 30

Time: 3 Hours Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize the students with linear and non-linear partial differential equations in R^n and various methods to obtain the solution of partial differential equations.

Unit - I

Solution of Partial Differential Equations Transport Equation-Initial value Problem. Non-homogeneous Equation. Laplace's Equation-Fundamental Solution, Mean Value Formulas, Properties of Harmonic Functions, Green's Function, Energy Methods.

Unit - II

Wave Equation-Solution by Spherical Means, Non-homogeneous Equations, Energy Methods. Poisson's formula, Kirchoff's formula, D. Alembert's formula, Uniqueness of Solution Domain of Dependence of Solution.

Unit - III

Heat Equation-Fundamental Solution, Solution of initial value problem, Non Homogeneous Equation, Mean Value Formula.

Nonlinear First Order PDE-Complete Integrals, Envelopes, Characteristics, Hamilton-Jacobi Equations, Hamilton's ODE, Hopf-Lax Formula, Weak Solutions, Uniqueness.

Unit - IV

Representation of Solutions-Separation of Variables, Similarity Solutions (Plane and Travelling Waves, Solitons, Similarity under Scaling), Fourier and Laplace Transform, Hopf-Cole Transform, Hodograph and Legendre Transforms, Potential Functions.

Suggested Readings

5 Credits (5-0-0)

- 1. L.C. Evans, Partial Differential Equations, Graduate Studies in Mathematics, Volume 19. AMS, 1998.
- 2. Sneddon I. N., Elements of Partial Differential Equations, McGraw Hill International

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MAL-633: MECHANICS OF SOLIDS-I

5 Credits (5-0-0) Time: 3 Hours Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize students with basics of Cartesian Tensor, theory of elasticity including strain/displacement relations, equilibrium and constitutive equations, Hooke's law to develop stress-strain relationships for different types of materials, basic properties of materials to solve problems related to isotropic elasticity.

Unit - I

Cartesian Tensor: Coordinate transformation, Cartesian Tensor of different order, Sum or difference and product of two tensors. Contraction theorem, Quotient law, Symmetric & Skewsymmetric tensors, Kronecker tensor, alternate tensor and relation between them, Scalar invariant of second order tensor, Eigen values & vectors of a symmetric second order tensor, Gradient, divergence & curl of a tensor field.

Unit - II

Analysis of Strain: Affine transformations. Infinitesimal affine deformation. Geometrical interpretation of the components of strain. Strain quadric of Cauchy. Principal strains and invariants. General infinitesimal deformation. Saint- Venant's equations of Compatibility.

Analysis of Stress: Stress tensor. Equations of equilibrium. Transformation of coordinates.

Unit - III

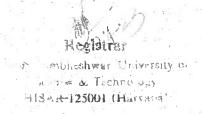
Stress quadric of Cauchy. Principal stress and invariants. Maximum normal and shear stresses. Equations of Elasticity: Generalised Hooke's law. Homogeneous isotropic media.

Unit - IV

Elastic moduli for isotropic media, Equilibrium and dynamic equations for an isotropic elastic solid. Strain energy function and its connection with Hooke's law. BeItrami-MicheII compatibility equations. Saint- Venant's principle.

Suggested Readings

- 1. I.S. Sokolnikoff, Mathematical Theory of Elasticity, Tata McGraw Hill Publishing Company Ltd., New Delhi, 1977.
- 2. Shanti Narayan, Text Book of Cartesian Tensors, S. Chand & Co., 1950.
- 3. S. Timoshenko and N. Goodier, Theory of Elasticity, McGraw Hill, New York, 1970.
- 4. A.E.H. Love, A Treatise on the Mathematical Theory of Elasticity Dover Publications, New York.
- 5. Y.C. Fung. Foundations of Solid Mechanics, Prentice Hall, New Delhi.



MAP-634: Computing Lab-II (MATLAB PROGRAMMING & APPLICATIONS)

Marks for Major Test (External): 70

1.5 Credits (3-0-0)

Internal Assessment: 30

Time: 3 Hours

Total Marks: 100

Objectives: The objective of the course is to familiarize the students with the working of the

MATLAB software:

User-Defined Functions and Function Files: Main Features of a Function file, Saving a Function File, Using a User-Defined Function, Comparison between Script Files and Function Files, **Anonymous and Inline Functions:** Anonymous Functions, Inline Functions. **Functions:** Using Function Handles for Passing a Function into a Function, Using a Function Name for Passing a Function into a Function. Subfunctions, Nested Functions.

Polynomials: Value of a Polynomial, Roots of a Polynomial, Addition, Multiplication and Division of Polynomials, Derivatives of Polynomials. Curve Fitting with Polynomials, The polyfit Function, Curve Fitting with Functions other than Polynomials.

Applications in Numerical Analysis: Solution of an Equation with one Variable, Minimum or a Maximum of a Function, Numerical Integration, Ordinary Differential Equations.

Three Dimensional Plots: Line Plots, Mesh and Surface Plots, Plots with Special Graphics, The View Command.

Symbolic Math: Solving Algebraic Equations, Differentiation, Integration, Solving an Ordinary Differential Equation, Plotting Symbolic Expressions, Numerical Calculations with Symbolic Expressions.

Numerical Methods - Interpolation: Lagrange's interpolation formula, Newton Gregory forward interpolation formula, Newton Gregory backward interpolation formula. Solution of a system of Linear Equations: (Unique solution case only): Gauss — Elimination Method, Gauss — Jordan Method. Solution of Ordinary Differential Equations: Euler's Method, Euler's Modified Method, Runge Kutta Second and Fourth order Method.

Suggested Books:

- 1. Amos Gilat, MATLAB- An Introduction with Applications, Fourth Edition, 2011, John Wiley & Sons, Inc.
- 2. www.mathworks.com, MATLAB Programming Fundamentals, The MathWorks, Inc.
- 3. Stephen J. Chapman, MATLAB Programming for Engineers, Fourth Edition, 2008, Thomson Learning.
- 4. Dingyü Xueand Yang Quan Chen, Solving Applied Mathematical Problems with MATLAB, 2009, Chapman & Hall/CRC.

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MAL-636: FLUID MECHANICS

5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: The objective of this paper is to make the students familiar with concepts of fluid mechanics and the properties of an ideal fluid flow past a rigid body.

Unit - I

Basics of Fluid Kinematics: General consideration of fluid, Lagrangian and Eulerian approach, Substantial derivative, Stream lines, Path lines, Streak lines, Divergence of a flow field, Translation, deformation and rotation of fluid element, Irrotational and rotational motions. Vortex lines, Reynolds Transport Theorem, Equation of Continuity. Euler's equation of motion, Bernoulli's theorem, Kelvin's circulation theorem, Vorticity equation.

Unit - II

Energy equation for an incompressible flow. Boundary conditions, Kinetic energy of liquid, Axially symmetric flows, Motion of a sphere through a liquid at rest at infinity, Liquid streaming past a fixed sphere, Force on a sphere, Equation of motion of a sphere.

Unit - III

Vorticity and Rotation, The Velocity potential ϕ , Stream functions ψ , Stokes stream functions. Uniform flow, Sources, Sinks and doublets, Images in a rigid impermeable infinite plane and in impermeable spherical surfaces, Conformal mapping, Milne-Thomson Circle theorem, Application to fluid mechanics, Blasius theorem, Joukovskii transformation, Joukovskii Aerofoils.

Unit - IV

Two-dimensional irrotational motion produced by motion of circular, co-axial and elliptic cylinders in an infinite mass of liquid, Vortex motion and its elementary properties, Kelvin's proof of permanence, motion due to rectilinear vortices.

Suggested Readings

- 1. W.H. Besaint and A.S. Ramsey, A Treatise on Hydromechanics, Part II, CBS Publishers, Delhi, 1988.
- 2. F. Chorlton, Textbook of Fluid Dynamics, C.B.S. Publishers, Delhi, 1985.
- 3. S.W. Yuan, Foundations of Fluid Mechanics, Prentice Hall of India Private Limited, New Delhi, 1976.
- 4. M.E.O'Neil and F.Choriton, Ideal and Incompressible Fluid Dynamics, John Wiley & Sons.
- 5. Y.A. Cengel and JM Cimbala, Fluid Mechanics: Fundamentals and Applications, 3rd Ed, Mc Graw Hill.2014.

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MAL-637: ADVANCED DISCRETE MATHEMATICS

Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

5 Credits (5-0-0) Time: 3 Hours

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To study some important results of discrete mathematics with their applications.

Unit - I

Formal Logic - Statements, Symbolic, Representation and Tautologies, Quantifiers, Proposition Logic. Lattices - Lattices as partially ordered sets, Their properties, Lattices as Algebraic systems, Some special Lattices, e.g., complete, complemented and Distributive Lattices. Sets Some Special Lattices e.g., Bounded, Complemented & Distributive Lattices.

Unit - II

Boolean Algebra - Boolean Algebra as Lattices, Various Boolean Identities, The Switching Algebra example, Join - irreducible elements, Atoms and Minterms, Boolean Forms and Their Equivalence, Minterm Boolean Forms, Sum of Products canonical Forms, Minimization of Boolean Functions, Applications of Boolean Algebra to Switching Theory (using AND, OR and NOT gates).

Unit - III

Graph Theory - Definition of Graphs, Paths, Circuits, Cycles and Subgraphs, Induced Subgraphs, Degree of a vertex, Connectivity, Planar Graphs and their properties, Euler's Formula for Connected Planar Graph, Complete and Complete Bipartite Graphs,

Unit - IV

Trees, Spanning Trees, Minimal Spanning Trees, Matrix Representation of Graphs, Euler's theorem on the Existence of Eulerian Paths and circuits, Directed Graphs, Indegree and outdegree of a vertex, Weighted undirected Graphs, Strong Connectivity and Warshall's Algorithm, Directed Trees, Search Trees, Tree Traversals.

Suggested Readings

- 1. J.P. Tremblay & R. Manohar, Discrete Mathematical Structures with Applications to Computer Science, McGraw Hill Book Co., 1997.
- 2. Seymour Lepschutz, Finite Mathematics (International edition 1983), McGraw-Hili Book Company, New York.
- 3. C.L. Liu, Elements of Discrete Mathematics, McGraw-Hili Book Co.
- 4. N.Deo, Graph Theory with Applications to Engineering and Computer Sciences, Prentice Hall of India.

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M.Sc. (Mathematics) 4TH Semester MAL-641: FUNCTIONAL ANALYSIS

5 Credits (5-0-0) Time: 3 Hours

Marks for Major Test (External): 70 **Internal Assessment: 30**

Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objective: To familiarize the students with the topics of Normed linear spaces, Conjugate spaces,

Equivalent norms and Inner product spaces.

Unit - 1

Normed linear spaces, metric on normed linear spaces, Holder's and Minkowski's inequality, completeness of quotient spaces of normed linear spaces. Completeness of lp, LP, Rn, Cⁿ and C[a, b]. Bounded linear transformation. Equivalent formulation of continuity. Spaces of bounded linear transformation. Continuous linear functional, conjugate spaces.

Unit - 1I

Hahn Banach extension theorem (Real and Complex form), Riesz Representation theorem for bounded linear functionals on L^P and C[a, b]. Second Conjugate spaces, Reflexive spaces, uniform boundedness principle and its consequence, open mapping theorem and its application, projections, closed graph theorem.

Unit - III

Equivalent norms, weak and strong convergence, their equivalence in finite dimensional spaces. Compact operators and its relation with continuous operators, compactness of linear transformation on a finite dimensional space, properties of compact operators, compactness of the limit of the sequence of compact operators.

Unit - IV

Inner product spaces, Hilbert spaces, Schwarz's inequality, Hilbert space as normed linear space, convex sets in Hilbert spaces. Projection theorem, orthonormal sets, Bessel's inequality, Parseval's identity, Conjugate of a Hilbert space.

Suggested Readings

- 1. H.L.Royden, Real Analysis Macmillian Publishing Co., Inc, New York 4th Edition 1993.
- 2. E.Kreyszig, Introductory Functional Analysis with Applications, John Wiley & Sons, New
- 3. A.E. Taylor, Introduction to Functional Analysis, John Wiley and Sons, New York, 1958.
- 4. K. Yosida, Functional Analysis, 3rd edition Springer Verlag, New York, 1971.
- 5. Walter Rudin, Functional Analysis, Tata McGraw Hill Publishing Company Ltd., New Delhi, 1973.

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MAL-642: DIFFERENTIAL GEOMETRY

5 Credits (5-0-0) Time: 3 Hours Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To apply the concepts and techniques of differential geometry of curves and surfaces; understand the curvature and torsion of a space curve and how to analyze and solve problems, First and Second fundamental forms of a surface; compute the mean and Gauss curvature of a surface; find geodesics on a given surface and its torsion.

Unit - I

Curves with torsion: Tangent, Principal Normal, Curvature, Binormal, Torsion, Serret Frenet formulae (Relevant sections of Weatherburn's book).

Unit - Il

Locus of centre of Curvature, Locus of centre of Spherical Curvature, Surfaces, Tangent plane, Normal, Envelope, Characteristics, Edge of regression (Relevant sections of Weather burn's book).

Unit - III

Curvilinear Co-ordinates; First order magnitudes, Directions on a surface, The Normal, Second order magnitudes, Derivative of unit normal (Relevant sections of Weatherburn's book).

Unit - IV

Principal directions and curvatures, First and Second curvatures, Geodesic property, Equations of geodesics, Surface of revolution, Torsion of a geodesic (Relevant sections of Weatherburn's book).

Suggested Readings

1. C.E., Weatherburn, Differential Geometry of Three Dimensions

2. M. Lipschultz, Differential Geometry, Schaum Outlines

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MAL-643: MECHANICS OF SOLIDS-II

5 Credits (5-0-0)

Marks for Major Test (External): 70 **Internal Assessment: 30**

Total Marks: 100 Time: 3 Hours

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize the students with Two-dimensional elastostistic, problems, fundamentals of Viscoelasticity, Torsion of cylindrical bars, propagation of waves in an elastic

solids and variational methods used in deformation of elastic materials.

Unit - I

Two-dimensional Problems: Plane stress. Generalized plane stress. Airy stress function. General solution of Biharmonic equation. Stresses and displacements in terms of complex potentials. The structure of functions of $\phi(z)$ and $\psi(z).$ First and second boundary value problems in plane elasticity, Thick-walled tube under external and internal pressures.

Unit - II

Viscoelasticity: Spring & Dashpot, Maxwell & Kelvin Models, Three parameter solid, Correspondence principle & its application to the Deformation of a viscoelastic Thick-walled tube in Plane strain.

Unit - III

Torsion: Torsion of cylindrical bars. Tortional rigidity. Torsion and stress functions. Lines of shearing stress. Simple problems related to circle, ellipse and equilateral triangle.

Waves: Propagation of waves in an isotropic elastic solid medium. Waves of dilatation and distortion. Plane waves. Elastic surface waves such as Rayleigh and Love waves.

Unit - IV

Variational methods - Theorems of minimum potential energy. Theorems of minimum complementary energy. Reciprocal theorem of Betti and Rayleigh. Deflection of elastic string and elastic membrane. Solution of Euler's equation by Ritz, Galerkin and Kantorovich methods.

Suggested Readings

- 1. I.S. Sokolnikoff, Mathematical Theory of Elasticity, Tata McGraw Hill Publishing Company Ltd., New Delhi.
- 2. Y.C. Fung, Foundations of Solid Mechanics, Prentice Hall, New Delhi.
- 3. S. Timoshenko and N. Goodier, Theory of Elasticity, McGraw Hill, New York.
- 4. W. Flugge, Viscoelasticity, Springer Verlag.
- 5. Martin H. Sadd., Elasticity Theory, Applications and Numerics AP (Elsevier).

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MAL-644: INTEGRAL EQUATIONS

5 Credits (5-0-0)
Time: 3 Hours

Marks for Major Test (External): 70 Internal Assessment: 30

Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: To familiarize the students with the concepts of integral equations and various methods for the solutions of different type of integral equations.

Unit - I

Definition of Integral Equations and their classification. Relation between integral and differential equations Fredholm integral equations of second kind with separable kernels. Eigen Values and Eigen functions. Reduction to a system of algebraic equations. An approximate Method. Method of successive approximations. Iterative scheme. Condition of convergence and uniqueness of series solution. Resolvent kernel and its results. Fredholm theorems.

Unit - II

Solution of Volterra's integral equations by iterative scheme. Successive approximation. Resolvent kernel. Integral transform methods: Fourier transform, Laplace transform, Convolution integral, Application to Volterra integral equations with Convolution type kernels, Abel's equations.

Unit - III

Symmetric kernel. Complex Hilbert space. Orthonormal system of functions, Fundamental properties of eigen values and eigen functions for symmetric kernels. Expansion in eigen function and bilinear form, Hilbert Schmidt theorem, Solution of integral equations with symmetric kernels

Unit - IV

Singular Integral Equations - Inversion formula for singular integral equation with kernel of type (h(s) - h(t) - a, 0 < a < 1). Dirac Delta Function. Green's function approach to reduce boundary value problems of a self-adjoint differential equation with homogeneous boundary conditions to integral equation forms. Auxiliary problem satisfied by Green's function. Modified Green's function.

Suggested Readings

- 1. R.P. Kanwal, Linear Integral Equation. Theory and Techniques, Academic Press, New York, 1971.
- 2. S.G. Mikhlin, Linear Integral Equations (translated from Russian), Hindustan Book Agency, 1960.
- 3. Abdul J. Jerri, Introduction to Integral Equations with Applications.
- 4. Hildebrand. F.B Methods of Applied Mathematics

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MAL-645: ADVANCED FLUID MECHANICS

Marks for Major Test (External): 70

5 Credits (5-0-0)

Internal Assessment: 30

Time: 3 Hours

Total Marks: 100

Note: The examiner is requested to set nine questions in all taking two questions from each unit and one compulsory question (Question No. 1). The compulsory question will consist of seven short answer type questions, each of two marks and will be distributed over the whole syllabus. The candidate is required to attempt five questions selecting one from each unit and the compulsory question.

Objectives: The objectives of this paper is to make familiar with the flow properties of real fluids and their applications in science and technology.

Unit - I

Stress components in a real fluid, stress tensor, Symmetry of the stress tensor, Stresses in a fluid at rest, Relations between rectangular components of stress in transformed coordinate system, Connection between stresses and velocity gradients. Viscous fluid, Navier-Stokes equations of motion. Laminar Flows, Exact solution of Navier-Stokes equations: Couette flows and Generalized Couette flow between two parallel plates, Plane Poiseuille flow, Hagen-Poiseuille flow.

Unit - II

Flow through tubes of uniform cross section in the form of circle, annulus, ellipse and equilateral triangle under constant pressure gradient. Unsteady flow over a flat plate: Stokes First & second Problem. Dynamical similarity: Dimensional Analysis and Buckingham π -theorem. Reynolds number, Wever Number, Mach Number, Froude Number, Eckert Number, Application of pi-theorem to viscous and compressible fluid flow.

Unit - III

Boundary Layer Flow: Prandtl's boundary layer approximation, boundary layer thickness, displacement thickness, momentum thickness, boundary layer equations in two-dimensions, Flat Plate Boundary Layer-Blasius solution, Karman integral equations. Boundary Layers with Pressure Gradients: Separation of boundary layer.

Unit - IV

Compressible flow: Stagnation properties. Wave motion in a gas: Speed of Sound, Equation of motion of a gas, Variation of fluid velocity with flow area, Subsonic, Sonic and Supersonic flows of a gas. Isentropic gas flows: Property relations for isentropic flow of ideal gases, Flow through a nozzle; Converging Nozzles, Converging—Diverging Nozzles.

- Suggested Readings
 1. F. Chorlton, Textbook of Fluid Dynamics, C.B.S. Publishers, Delhi, 1985.
 - 2. H. Schlichting, Boundary Layer Theory, McGraw Hill Book Company, New York, 1979.
 - 3. A.D. Young, Boundary Layers, AIAA Education Series, Washington DC, 1989.
 - 4. S.W. Yuan, Foundations of Fluid Mechanics, Prentice Hall of India Private Limited, New Delhi, 1976.
 - 5. Y.A. Cengel and JM Cimbala, Fluid Mechanics: Fundamentals and Applications, 3rd Ed. Mc Graw Hill.2014.

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MAL-648: COMPUTING LAB-3 1.5 Credits (0-0-3)

Marks for Major Test (External): 70 Internal Assessment: 30 Total Marks: 100

Objectives: The objective of the course is to familiarize the students with the working of the LATEX software:

Overview, Special Characters, Text, Making Tables, Bibliography with Bibtex, Math Mode, Equations and arrays, Specific operators of Mathematics and structure formations -Derivatives, Integrals, del operator, product and sum operator. Making special parts, Format for technical writing - Article, Report. Cover page, Abstract, other front matter, Back matter, graphics, Importing pictures.

Suggested Readings

1. Harvey J. Greenberg, A Simplified Introduction to Latex.

2. Latex Companion, 2nd Edition, Frank Mittelbach, Michel Goossem, Johannes Braams, David Carlisle, Chris Rowley.

3. Guide to Latex, Helmut Kopka and Patrick W. Dal

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Program Specific Outcomes for Post Graduate Programme in the subject of Mathematics

After successful completion of the program, a student will be able to:

PO1: Have a basic understanding and knowledge of different core areas of Mathematics such as algebra, analysis, calculus, differential equations, mechanics, numerical analysis, and in some of the other elective areas. Demonstrate understanding of the concepts /theories/methods from such areas of Mathematics, PO2: Have a broad background in Mathematics and develop the essential mathematical reasoning, knowledge, skills, and aptitude to pursue further studies and research in Mathematics, PO3: Communicate mathematics effectively and precisely by written, computational and graphical means, PO4: Apply knowledge, understanding, methods, techniques, and skills of Mathematics to analyze, evaluate and solve problems of Mathematics and/or the mathematical problems having applications in engineering/science/technology/life sciences/social sciences to enhance career prospects in different fields.

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(Through Open Distance Learning)



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REAL ANALYSIS

(MAL-512)

M.Sc. Mathematics



DIRECTORATE OF DISTANCE EDUCATION

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Author: Dr. Vizender Singh

Assitant Professor and Course Coordinator

M.Sc. Mathematics

Directorate of Distance Education

Guru Jambheshwar University of Science & Technology

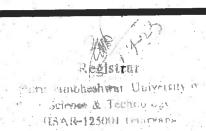
Hisar, Haryana-125001.

Vetter: Dr. Pankaj Kumar, Associate Professor

Department of Mathematics,

Guru Jambheshwar University of Science & Technology

Hisar, Haryana-125001.





MAL-512: M. Sc. Mathematics (Real Analysis)

Lesson No. 1

Written by Dr. Vizender Singh

Lesson: Sequences and Series of Functions -I

Structure:

- 1.0 Learning Objectives
- 1.1 Introduction
- 1.2 Sequences and Series of Functions
- 1.3 Check Your Progress
- 1.4 Summary
- 1.5 Keywords
- 1.6 Self-Assessment Test
- 1.7 Answers to check your progress
- 1.8 References/ Suggested Readings

1.0 Learning Objective

- The learning objectives of this lesson are to consider sequences and series whose terms are functions rather than real numbers. These sequences and series are useful in obtaining approximations to a given function.
- The study aims at two different notations of convergence for a sequence of functions: Point wise convergence and uniform convergence.
- To study that for a sequence of variable terms most important question to be answered is that whether and to what extent, properties belonging to terms, viz. boundedness, continuity, integrability and differentiability, etc., are transferred to limit function of corresponding sequence (series).
- To study under what conditions these properties are transferred to limit function.

1.1 Introduction

So far in earlier graduate classes, we have considered, most exclusively, sequence and series whose terms are real numbers. It was only in particular case that the terms depend upon variable. In this lesson, we shall consider sequence and series whose terms depends upon

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variable, i.e., those whose terms are real valued functions defined on interval as domain. The sequences and series are denoted by $\{f_n\}$ and $\sum f_n$ respectively.

1.2 Point-wise Convergence and Uniform Convergence

Definition 1.2.0 Let $\{f_n\}$, n = 1, 2, 3,... be a sequence of functions, defined on an interval I, $a \le x \le b$. If there exits a real valued function f with domain I such that

$$f(x) = \lim_{n \to \infty} \{f_n(x)\}, \quad \forall \ x \in I$$

Then the function f is called the limit or the point-wise limit of the sequence $\{f_n\}$ on [a, b], and the sequence $\{f_n\}$ is said to be point-wise convergent to f on [a, b].

Similarly, if the series $\sum f_n$ converges for every point $x \in I$, and we define

$$f(x) = \sum_{n=0}^{\infty} f_n(x), \quad \forall x \in [a, b]$$

the function f is called the sum or the point-wise sum of the series $\sum f_n$ on [a, b].

Definition 1.2.1. If a sequence of functions $\{f_n\}$ defined on [a, b], converges point-wise to f, then to each f > 0 and to each f = f = f0, there corresponds an integer f1 such that

$$|f_n(x) - f(x)| < \epsilon, \quad \forall \ n \ge N$$
 (1.1)

Remark 1.2.3.

a) The limit of differentials may not equal to the differential of the limit.

Consider the sequence $\{f_n\}$, where $f_n(x) = \frac{\sin nx}{\sqrt{n}}$, (x real).

It has the limit

$$f(x) = \lim_{n \to \infty} f_n(x) = 0$$

$$f'(x) = 0$$
, and so $f'(0) = 0$

But

$$f_n'(x) = \sqrt{n} \cos nx$$

so that

$$f'_n(0) = \sqrt{n} \to \infty \text{ as } n \to \infty$$

Thus at x = 0, the sequence $\{f'_n(x)\}$ diverges whereas the limit function f'(x) = 0.

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b) Each term of the series may be continuous but the sum function f may not.

Consider the series

$$\sum_{n=0}^{\infty} f_n \text{ , where } f_n(x) = \frac{x^2}{(1+x^2)^n} \text{ (x real)}$$

At x = 0, each $f_n(x) = 0$, so that the sum of the series f(0) = 0.

For $x \neq 0$, it forms a geometric series with common ratio $1/(1 + x^2)$, so that its sum function f(x) = 1.

Hence,

$$f(x) = \begin{cases} 1, & x \neq 0 \\ 0, & x = 0 \end{cases}$$

which is not continuous at x = 0.

Definition 1.2.4. A sequence of functions $\{f_n\}$ is said to converge uniformly on an interval [a, b] to a function f if for any $\epsilon > 0$ and for all $x \in [a, b]$ there exists an integer N (independent of x but dependent on ϵ) such that for all $x \in [a, b]$

$$|f_n(x) - f(x)| \le \varepsilon, \quad \forall \ n \ge N$$
 (1.2)

It is obvious that every uniformly convergent sequence is point-wise convergent, and the uniform limit function is same as the pointwise limit function. But the converse is not true. However non-point-wise convergence implies non-uniform convergence.

Definition 1.2.5. A series of functions $\sum f_n$ is said to converge uniformly on [a, b] if the sequence $\{S_n\}$ of its partial sums, defined by

$$S_n(x) = \sum_{i=1}^n f_i(x)$$

converges uniformly on [a, b].

OR

A series of functions $\sum f_n$ converges uniformly to f on [a, b] if for $\epsilon > 0$ and all $x \epsilon = [a, b]$ there exists an integer N (independent of x and dependent on ϵ) such that for all x in [a, b]

$$|f_1(x) + f_2(x) + \dots + f_n(x) - f(x)| \le \epsilon$$
, for $n \ge N$

Cauchy's Criterion for Uniform Convergence.





Theorem 1.2.6. The sequence of functions $\{f_n\}$ defined on [a, b] converges uniformly on [a, b] if and only if for every $\varepsilon > 0$ and for all $x \in [a, b]$, there exists an integer N such that

$$|f_{n+p}(x) - f_n(x)| < \epsilon, \quad \forall \ n \ge N, \ p \ge 1$$
 ...(1.3)

Proof. Let the sequence of functions $\{f_n\}$ uniformly converge on [a, b] to the limit function f, so that for a given $\epsilon > 0$, and for all $x \in [a, b]$, there exist integers n_1 , n_2 such that

$$|f_n(x) - f(x)| \le \varepsilon/2, \quad \forall n \ge n_1$$

and

$$|f_{n+p}(x) - f(x)| < \epsilon/2, \ \forall \ n \ge n_2, p \ge 1$$

Let $N = \max (n_1, n_2)$.

$$|f_{n+p}(x) - f_n(x)| \le |f_{n+p}(x) - f(x)| + |f_n(x) - f(x)|$$

$$< \varepsilon/2 + \varepsilon/2 = \varepsilon, \qquad \forall \quad n \ge N, \, p \ge 1$$

Conversely. Let the given condition hold so by Cauchy's general principle of convergence, $\{f_n\}$ converges for each $x \in [a, b]$ to a limit, say f and so the sequence converges pointwise to f.

For a given $\varepsilon > 0$, let us choose an integer N such that (1.3) holds. Fix n, and let $p \to \infty$ in (1). Since $f_{n+p} \to f$ as $p \to \infty$, we get

$$|f(x) - f_n(x)| \le \epsilon$$
 $\forall n \ge N, \text{ all } x \in [a, b]$

which proves that $f_n(x) \to f(x)$ uniformly on [a, b].

Other form of this theorem is:

The sequence of functions $\{f_n\}$ defined on [a, b] converges uniformly on [a, b] if and only if for every $\epsilon > 0$ and for all $x \in [a, b]$, there exists an integer N such that

$$|f_n(x)-f_m(x)|\leq \epsilon, ~~\forall~n,\, m\geq N$$

Theorem 1.2.7. A series of functions $\sum f_n$ defined on [a, b] converges uniformly on [a, b] if and only if for every $\varepsilon > 0$ and for all $x \in [a, b]$, there exists an integer N such that

$$|f_{n+1}(x) + f_{n+2}(x) + ... + f_{n+p}(x)| < \epsilon, \forall n \ge N, p \ge 1$$
 ...(1.4)

Proof. Taking the sequence $\{S_n\}$ of partial sums of functions $\sum f_n$, defined by

$$S_n(x) = \sum_{i=1}^n f_i(x)$$

and applying above theorem, we get the required result.



Example 1.2.8. Show that the sequence $\{f_n\}$, where

$$f_n(x) = \frac{nx}{1 + n^2 x^2}$$
, for $x \in [a, b]$.

is not uniformly convergent on any interval [a, b] containing 0.

Solution. The sequence converges pointwise to f, where f(x) = 0, \forall real x.

Let $\{f_n\}$ converge uniformly in any interval [a, b], so that the pointwise limit is also the uniform limit. Therefore for given $\epsilon > 0$, there exists an integer N such that for all $x \in [a, b]$, we have

$$\left| \frac{nx}{1+n^2x^2} - 0 \right| < \varepsilon, \quad \forall \ n \ge N$$

If we take $\varepsilon = \frac{1}{3}$, and t an integer greater than N such that $1/t \in [a, b]$, we find on taking n = t and x = 1/t, that

$$\frac{nx}{1+n^2x^2} = \frac{1}{2} \not< \frac{1}{3} = \in.$$

which is a contradiction and so the sequence is not uniformly convergent in the interval [a, b], having the point 1/t. But since $1/t \rightarrow 0$, the interval [a, b] contains 0. Hence the sequence is not uniformly convergent on any interval [a, b] containing 0.

Example 1.2.9. The sequence $\{f_n\}$, where

$$f_n(x) = x^n$$

is uniformly convergent on [0, k], k < 1 and only pointwise convergent on [0, 1].

Solution.

$$f(x) = \lim_{n \to \infty} f_n(x) = \begin{cases} 0, & 0 \le x < 1 \\ 1, & x = 1 \end{cases}$$

Thus the sequence converges pointwise to a discontinuous function on [0, 1]

Let $\varepsilon > 0$ be given.

For $0 \le x \le k \le 1$, we have

$$|f_n(x)-f(x)|=x^n<\epsilon$$

if



$$\left(\frac{1}{x}\right)^n > \frac{1}{\epsilon}$$

or if

$$n > \log (1/\epsilon)/\log(1/x)$$

This number, $\log (1/\epsilon)/\log (1/x)$ increases with x, its maximum value being

 $\log (1/\epsilon)/\log(1/k)$ in]0, k], k > 0.

Let N be an integer $\geq \log (1/\epsilon)/\log(1/k)$.

$$|f_n(x) - f(x)| < \epsilon, \qquad \forall \ n \ge N, \, 0 < x < 1$$

Again at x = 0,

$$|f_n(x) - f(x)| = 0 < \varepsilon,$$

$$\forall$$
 $n \ge 1$

Thus for any $\epsilon > 0$, \exists N such that for all $x \in [0, k], k < 1$

$$|f_n(x) - f(x)| \le \epsilon, \quad \forall n \ge N$$

Therefore, the sequence $\{f_n\}$ is uniformly convergent in [0, k], k < 1.

However, the number $\log (1/\epsilon)/\log (1/x) \to \infty$ as $x \to 1$ so that it is not possible to find an integer N such that $|f_n(x) - f(x)| < \epsilon$, for all $n \ge N$ and all x in [0, 1]. Hence the sequence is not uniformly convergent on any interval containing 1 and in particular on [0, 1].

Example 1.2.10. Show that the sequence $\{f_n\}$, where

$$f_n(x) = \frac{1}{x+n}$$

is uniformly convergent in any interval [0, b], b > 0.

Solution. The limit function is

$$f(x) = \lim_{n \to \infty} f_n(x) = 0 \qquad \forall x \in [0, b]$$

so that the sequence converges pointwise to 0.

For any $\varepsilon > 0$,

$$|f_n(x)-f(x)|=\frac{1}{x+n}\leq \epsilon$$

if $n > (1/\epsilon) - x$, which decreases with x, the maximum value being $1/\epsilon$.

Let N be an integer $\geq 1/\epsilon$, so that for $\epsilon > 0$, there exists N such that





$$|f_n(x) - f(x)| \le \varepsilon, \quad \forall n \ge N$$

Hence the sequence is uniformly convergent in any interval [0, b], b > 0.

Example 1.2.11. The series $\sum f_n$, whose sum to n terms, $S_n(x) = nxe^{-nx^2}$, is pointwise and not uniformly convergent on any interval [0, k], k > 0.

Solution. The pointwise sum $S(x) = \lim_{n \to \infty} S_n(x) = 0$, for all $x \ge 0$. Thus the series converges pointwise to 0 on [0, k].

Let us suppose, if possible, the series converges uniformly on [0, k], so that for any $\varepsilon > 0$, there exists an integer N such that for all $x \ge 0$,

$$|S_n(x) - S(x)| = nxe^{-nx^2} < \epsilon, \quad \forall n \ge N$$
 ...(*)

Let N_0 be an integer greater than N and $e^2\epsilon^2,$ then for x = 1/ $\sqrt{N_0}\,$ and n = $N_0,$

(*) gives

$$\sqrt{N_0/e} < \varepsilon \implies N_0 < e^2 \varepsilon^2$$

so we arrive at a contradiction. Hence the series is not uniformly convergent on [0, k].

Note: The interval of uniform convergence is always to be a closed interval, that is, it must include the end points. But the interval for pointwise or absolute convergence can be of any type.

M_n-Test for Uniform Convergence of Sequence

Theorem 1.2.12 Let $\{f_n\}$ be a sequence of functions, such that

$$\lim_{n\to\infty} f_n(x) = f(x), x \in [a, b]$$

and let

$$M_n = \sup_{x \in [a,b]} |f_n(x) - f(x)|$$

Then $f_n\!\to f$ uniformly on [a, b] if and only if $M_n\!\to 0$ as $n\!\to\!\infty.$

Proof. Let $f_n \to f$ uniformly on [a, b], so that for a given $\epsilon > 0$, there exists an integer N such that

$$\begin{split} |f_n(x) - f(x)| &< \epsilon, \qquad \forall \ n \geq N, \quad \forall \ x \in [a, b] \\ M_n &= \sup_{x \in [a, b]} |f_n(x) - f(x)| \leq \epsilon, \qquad \forall \ n \geq N \end{split}$$

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$$\Rightarrow$$
 $M_n \to 0$, as $n \to \infty$

Conversely. Let $M_n \to 0$, as $n \to \infty$, so that for any $\epsilon > 0$, \exists an integer N such that

$$|M_n-0| < \epsilon, \quad \forall n \ge N$$

$$\Rightarrow \qquad \qquad \sup_{x \in [a,b]} |f_n(x) - f(x)| \le \epsilon, \qquad \qquad \forall \ n \ge N$$

$$\Rightarrow \qquad |f_n(x)-f(x)| \leq \epsilon, \qquad \qquad \forall \ n \geq N, \ \ \forall \ x \in [a,b]$$

$$\Rightarrow$$
 f_n \rightarrow f uniformly on [a, b].

Example 1.2.13 Show that '0' is a point of non-uniform convergence of the sequence $\{f_n\}$, where $f_n(x) = 1 - (1 - x^2)^n$. in $(0, \sqrt{2})$

Solution. We have

$$\begin{aligned} M_n &= \sup \left\{ |f_n(x) - f(x)| : x \in]0, \sqrt{2} \right\} \\ &= \sup \left\{ (1 - x^2)^n : x \in]0, \sqrt{2} [\right\} \\ &\geq \left(1 - \frac{1}{n}\right)^n \qquad \left[\text{Taking } x = \frac{1}{\sqrt{n}} \in]0, \sqrt{2} \right] \\ &\to \frac{1}{n} \text{as } n \to \infty. \end{aligned}$$

Thus M_n cannot tend to zero as $n \rightarrow \infty$.

It follows that the sequence is non-uniformly convergent.

Also as $n\to\infty$, $x\to0$ and consequently 0 is a point of non-uniform convergence.

Example 1.2.14 Prove that the sequence $\{f_n\}$, where

$$f_n(x) = \frac{x}{1 + nx^2}$$
, x real

converges uniformly on any closed interval I.

Solution. Here pointwise limit,

$$f(x) = \lim_{n \to \infty} f_n(x) = \lim_{n \to \infty} \frac{x}{1 + nx^2} = 0, \quad \forall x \text{ in } I$$

$$M_n = \sup_{x \in I} |f_n(x) - f(x)| = \sup_{x \in I} \left| \frac{x}{1 + nx^2} \right|$$





$$y = \frac{x}{1 + nx^2}$$

$$\frac{dy}{dx} = \frac{1 - nx^2}{\left(1 + nx^2\right)^2}$$
 (Check)

For Maxima or Minima

$$\frac{dy}{dx} = 0$$

$$\Rightarrow \frac{1 - nx^2}{\left(1 + nx^2\right)^2} = 0$$

$$\Rightarrow x = \frac{1}{\sqrt{n}} \text{ (Solving)}$$

$$\frac{d^2y}{dx^2} = \frac{-2nx(3 - nx^2)}{(1 + nx^2)^3} \text{ (Check)}$$

$$\frac{d^2y}{dx^2}\Big|_{x = \frac{1}{\sqrt{n}}} = -\frac{\sqrt{n}}{2} < 0$$

Which shows that y is maximum when $x = \frac{1}{\sqrt{n}}$ and maximum value is

$$y_{\text{max}}|_{x=\frac{1}{\sqrt{n}}} = \frac{\frac{1}{\sqrt{n}}}{1+n\cdot\frac{1}{n}} = \frac{\frac{1}{\sqrt{n}}}{2} = \frac{1}{2\sqrt{n}}$$

Therefore,

$$M_n = \sup_{x \in I} |f_n(x) - f(x)| = \sup_{x \in I} \left| \frac{x}{1 + nx^2} \right| = \frac{1}{2\sqrt{n}} \to 0 \quad \text{as} \quad n \to \infty$$

Hence $\{f_n\}$ converges uniformly on I.

Example 1.2.15 Prove that the sequence $\{f_n\}$, where $f_n(x) = x^{n-1}$ (1-x) converges uniformly in the interval [0, 1].

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Solution. Here $f(x) = \lim_{n \to \infty} x^{n-1} (1 - x) = 0 \ \forall \ x \in [0, 1].$

Let
$$y = |f_n(x) - f(x)| = x^{n-1} (1-x)$$

Now y is maximum or minimum when

$$\frac{dy}{dx} = (n-1)x^{n-2}(1-x) - x^{n-1} = 0$$

$$x^{n-2}[(n-1)(1-x)-x]=0$$

or

$$x = 0$$
 or $\frac{n-1}{n}$.

A so
$$\frac{d^2y}{dx^2} = -ve$$
 when $x = \frac{n-1}{n}$

$$\therefore \qquad \mathbf{M_n} = \max \mathbf{y} = \left(1 - \frac{1}{n}\right)^{n-1} \left(1 - \frac{n-1}{n}\right) \to \frac{1}{e} \times 0 = 0 \text{ as } n \to \infty.$$

Hence the sequence is uniformly convergent on [0, 1] by M_n-test.

Example 1.2.16 Show that 0 is a point of non-uniform convergence of the sequence $\{f_n\}$, where $f_n(x) = 1 - (1 - x^2)^n$.

Solution. Here

$$f(x) = \lim_{n \to \infty} f_n(x) = \begin{cases} 0 & when \ x = 0 \\ 1 & when \ 0 < |x| < \sqrt{2} \end{cases}$$

Suppose, if possible, that the sequence is uniformly convergent in a neighborhood]0, k[of 0 where k is a number such that $0 < k < \sqrt{2}$. There exists therefore a positive integer m such that

$$|f_m(x) - f(x)| < \frac{1}{2}$$
, taking $\in = \frac{1}{2}$,

i.e., if
$$(1-x^2)^m < \frac{1}{2}$$
 for every $x \in]0, k[$.

Since $1-(1-x^2)^m \rightarrow 1$ as $x \rightarrow 0$, we arrive at a contradiction. Hence 0 is point of non-uniform convergence of the sequence.

Example 1.2.17 Test for uniform convergence the series $\sum_{n=0}^{\infty} xe^{-nx}$ in the closed interval [0, 1].





Solution. Here
$$f_n(x) = \sum_{n=1}^{n} xe^{-nx}$$

$$=\frac{xe^{x}}{e^{x}-1}\left(1+\frac{1}{e^{nx}}\right)$$

(Sum of first n terms of G.P.)

Now
$$f(x) = \lim_{n \to \infty} f_n(x) = \begin{cases} 0 & \text{where } x = 0 \\ \frac{xe^x}{e^x - 1} & \text{when } 0 < x \le 1 \end{cases}$$

We consider $0 < x \le 1$. We have

$$\begin{split} M_n &= \sup \; \{ |f_n(x) - f(x)| : x \in [0, 1] \} \\ &= \sup \; \left\{ \frac{x e^x}{(e^x - 1) e^{nx}} : x \in [0, 1] \right\} \\ &\geq \frac{1/n . e^{1/n}}{(e^{1/n} - 1) e} \qquad \left(\text{Taking } x = \frac{1}{n} \in [0, 1] \right) \end{split}$$

Now
$$\lim_{n \to \infty} \frac{1/n e^{1/xn}}{(e^{1/n} - 1)}$$
 $\left[\text{Form } \frac{0}{0} \right]$

$$= \lim_{n \to \infty} \frac{1/n e^{1/n} (-1/n^2) + (-1/n^2) e^{1/n}}{e \cdot e^{1/n} - (-1/n^2)}$$

$$= \lim_{n \to \infty} \frac{(1/n + 1)}{e} = \frac{(0 + 1)}{e} = \frac{1}{e}.$$

Thus M_n does not tend zero as $n \rightarrow \infty$.

Hence the sequence is non-uniformly convergent by M_n-test.

Here 0 is a point of non-uniform convergence.

Example 1.2.18 The sequence $\{f_n\}$, where, $f_n(x) = \frac{nx}{1 + n^2 x^2}$ is not uniformly convergent on any interval containing zero.

Solution. Here

$$\lim_{n\to\infty} f_n(x) = 0, \qquad \forall x$$





Now $\frac{nx}{1+n^2x^2}$ attains the maximum value $\frac{1}{2}$ at $x=\frac{1}{n};\frac{1}{n}$ tending to 0 as $n\to\infty$. Let us take an interval [a, b] containing 0.

Thus

$$\begin{aligned} \mathbf{M}_{\mathbf{n}} &= \sup_{\mathbf{x} \in [a,b]} |\mathbf{f}_{\mathbf{n}}(\mathbf{x}) - \mathbf{f}(\mathbf{x})| \\ &= \sup_{\mathbf{x} \in [a,b]} \left| \frac{\mathbf{n}\mathbf{x}}{1 + \mathbf{n}^2 \mathbf{x}^2} \right| \\ &= \frac{1}{2}, \text{ which does not tend to zero as } \mathbf{n} \rightarrow \infty. \end{aligned}$$

Hence the sequence $\{f_n\}$ is not uniformly convergent in any interval containing the origin.

Weierstrass's M-test for Uniform Convergence of Series of Function

Theorem 1.2.19 A series of functions $\sum f_n$ will converge uniformly (and absolutely) on [a, b] if there exists a convergent series $\sum M_n$ of positive numbers such that for all $x \in [a, b]$

$$|f_n(x)| \le M_n$$
, for all n

Proof Let $\varepsilon > 0$ be a positive number.

Since $\sum M_n$ is convergent, therefore there exists a positive integer N such that

$$|M_{n+1} + M_{n+2} + ... + M_{n+p}| < \epsilon \quad \forall \ n \ge N, p \ge 1$$
 ...(1.6)

Hence for all $x \in [a, b]$ and for all $n \ge N$, $p \ge 1$, we have

$$\begin{split} |f_{n+1}(x) + f_{n+2}(x) + \ldots + f_{n+p}(x)| &\leq |f_{n+1}(x)| + |f_{n+2}(x)| + \ldots + |f_{n+p}(x)| \qquad \ldots (1.7) \\ &\leq M_{n+1} + M_{n+2} + \ldots + M_{n+p} \qquad \text{(Using 1.6)} \\ &\leq \epsilon \qquad \qquad \ldots (1.8) \end{split}$$

(1.7) and (1.8) imply that $\sum f_n$ is uniformly and absolutely convergent on [a, b].

Note: The converse of this theorem in no true, i.e., non-convergence of $\sum M_n$ does not imply anything as far as $\sum f_n$ is concerned.

Example 1.2.20 Test for uniform convergence the series.

(i)
$$\sum \frac{x}{(n+x^2)^2}$$
, (ii) $\sum \frac{x}{n(1+nx^2)}$

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Solution. (i) Here
$$u_n(x) = \frac{x}{(n+x^2)^2}$$
.

Now $u_n(x)$ is maximum or minimum when $\frac{du_n(x)}{dx} = 0$

or
$$(n + x^2)^2 - 4x^2 (n + x^2) = 0$$

$$3x^4 + 2nx^2 - n^2 = 0$$

or
$$x^2 = \frac{n}{3} \text{ i.e. } x = \sqrt{\frac{n}{3}}.$$

It can be seen that $\frac{d^2u_n(x)}{dx^2}$ is -ve when $x = \sqrt{\frac{n}{3}}$.

Hence Max
$$u_n(x) = \frac{\sqrt{\frac{n}{3}}}{\left(n + \frac{n}{3}\right)^2} = \frac{3\sqrt{3}}{16n^{3/2}} = M_n.$$

Therefore

$$|u_n(x)| \leq M_n \ \forall \ n \geq N.$$

But $\sum M_n$ is convergent by p-series test.

Hence the given series is uniformly convergent for all values of x by Weierstrass's M test.

(ii) Here $u_n(x)$ is Maximum or minimum when $\frac{du_n(x)}{dx} = 0$, i.e.,

$$n(1 + nx^2) - 2n^2x^2 = 0$$
 or $x = \pm 1/\sqrt{n}$.

It can be easily shown that $x = \frac{1}{\sqrt{n}}$ makes $u_n(x)$ a maximum.

Hence Max $u_n(x) = \frac{1/\sqrt{n}}{n(1+1)} = \frac{1}{2.n^{3/2}} = M_n$. But $\sum M_n$ is convergent by p-series test.

Hence the given series is uniformly convergent for all values of x by Weierstrass's M-test.

Example 1.2.21 Consider $\sum_{n=1}^{\infty} \frac{x}{n(1+nx^2)}$, $x \in \mathbb{R}$.

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We assume that x is +ve, for if x is negative, we can change signs of all the terms. We have

$$f_n(x) = \frac{x}{n(1+nx^2)}$$

and

$$f_n'(x) = 0$$

implies $nx^2 = 1$. Thus maximum value of $f_n(x)$ is $\frac{1}{2n^{3/2}}$

Hence

$$f_n(x) \le \frac{1}{2n^{3/2}}$$

Since $\sum \frac{1}{n^{3/2}}$ is convergent, Weierstrass's M-Test implies that $\sum_{n=1}^{\infty} \frac{x}{n(1+nx^2)}$ is uniformly convergent for all $x \in \mathbb{R}$.

Example 1.2.22 Show that the series $\sum_{n=1}^{\infty} \frac{x}{(n+x^2)^2}$, is uniformly convergent for all x in R.

Solution. Here

$$f_n(x) = \frac{x}{(n+x^2)^2}$$

and so

$$f'_n(x) = \frac{(n+x^2)^2 - 2x(n+x^2)2x}{(n+x^2)^4}$$

Thus for maxima and minima, $f'_n(x) = 0$ gives

$$x^4 + x^2 + 2nx^2 - 4nx^2 - 4x^4 = 0$$

$$-3x^4 - 2nx^2 + n^2 = 0$$

or

$$3x^4 + 2nx^2 - n^{2+} = 0$$

or

$$x^2 = \frac{n}{3} \text{ or } x = \sqrt{\frac{n}{3}}$$

Also it can be easily seen that $f_n''(x)$ is -ve at $\sqrt{\frac{n}{3}}$. Hence maximum value of $f_n(x)$ is $\frac{3\sqrt{3}}{16n^2} = M_n$.

Since $M_n = \sum \frac{1}{n^2}$ is convergent by p-test, it follows by Weierstrass's M-Test that the given series is uniformly convergent.



Example1.2.23 The series $\sum \frac{x}{n^p + x^2 n^q}$ converges uniformly over any finite interval [a, b], for

(i)
$$p > 1$$
, $q \ge 0$

(ii)
$$0 2$$

Solution. (i) When p > 1, $q \ge 0$

$$x^{2} \ge 0 \quad \forall x \in [a, b]$$

$$\therefore n^{q} x^{2} \ge 0$$

$$\Rightarrow \qquad n^{p} + n^{q} x^{2} \ge n^{p} \quad \text{or}$$

$$\frac{1}{n^{p} + n^{q} x^{2}} \le \frac{1}{n^{p}}$$

$$\frac{x}{n^{p} + n^{q} x^{2}} \le \frac{x}{n^{p}}$$

Therefore

$$|f_n(x)| = \left| \frac{x}{n^p + x^2 n^q} \right| \le \frac{\alpha}{n^p} = M_n \ \forall x \in [a, b]$$

where $\alpha \ge \max\{|a|, |b|\}$.

The series $\sum M_n = \sum (\alpha / n^p)$ converges for p > 1 by p-test.

Hence by M-test, the given series converges uniformly over the interval [a, b].

(ii) When 0 , <math>p + q > 2.

 $|f_n(x)|$ attains the maximum value $\frac{1}{2n^{\frac{1}{2}(p+q)}}$ at the point, where $x = n^{\frac{p-q}{2}}$.

$$\therefore \qquad |f_n(x)| \leq \frac{1}{2n^{\frac{1}{2}(p+q)}} = M_n$$

The series $M_n = \sum \frac{1}{2n^{\frac{1}{2}(p+q)}}$ converges for p+q>2 by p-test. Hence by M test, the given series

converges uniformly over any finite interval [a, b].

Example1.2.24 Test for uniform convergence, the series

$$\frac{2x}{1+x^2} + \frac{4x^3}{1+x^4} + \frac{8x^7}{1+x^8} + \dots, -\frac{1}{2} \le x \le \frac{1}{2}$$





Solution. The nth term $f_n(x) = \frac{2^n x^{2^n-1}}{1+x^{2^n}}$

$$|f_n(x)| \le 2^n (\alpha)^{2^{n-1}}$$

where $|x| \le \alpha \le \frac{1}{2}$.

The series $\sum 2^n (\alpha)^{2^n-1}$ converges, and hence by M-test the given series converges uniformly on $\left[-\frac{1}{2},\frac{1}{2}\right]$.

Abel's Lemma

Lemmac1.2.25 If $v_1, v_2, ..., v_n$ be positive and decreasing, the sum

$$u_1v_1 + u_2v_2 + ... + u_nv_n$$

lies between A v1 and B v1, where A and B are the greatest and least of the quantities

$$u_1, u_1 + u_2, u_1 + u_2 + u_3, ..., u_1 + u_2 + ... + u_n$$

Proof. Write

$$S_n = u_1 + u_2 + ... + u_n$$

Therefore

$$u_1 = S_1, u_2 = S_2 - S_1, \dots, u_n = S_n - S_{n-1}$$

Hence

$$\begin{split} \sum_{i=1}^{n} & u_i v_i = u_1 \ v_1 + u_1 v_2 + \ldots + u_n v_n \\ & = S_1 \ v_1 + (S_2 - S_1) \ v_2 + (S_3 - S_2) \ v_3 + \ldots + (S_n - S_{n-1}) \ v_n \\ & = S_1 (v_1 - v_2) + S_2 (v_2 - v_3) + \ldots + S_{n-1} \ (v_{n-1} - v_n) + S_n v_n \\ & < A[v_1 - v_2 + v_2 - v_3 + \ldots + v_{n-1} - v_n + v_n] \end{split}$$

Similarly, we can show that

$$\sum_{i=1}^{n} u_i \ v_i > B \ v_1$$

Hence the result follows.





Abel's Test

Theorem 1.2.26 If $a_n(x)$ is a positive, monotonic decreasing function of n for each fixed value of x in the interval [a, b], and $a_n(x)$ is bounded for all values of n and x, and if the series $\sum u_n(x)$ converges uniformly on [a, b], then $\sum a_n(x)u_n(x)$ also converges uniformly.

Proof. Since $a_n(x)$ is bounded for all values of n and for x in [a, b], therefore there exists a number K > 0, independent of x and n, such that for all $x \in [a, b]$,

$$0 \le a_n(x) \le K$$
, (for $n = 1, 2, 3,...$) ...(1.9)

Again, since $\sum u_n(x)$ converges uniformly on [a, b], therefore for any $\epsilon > 0$, we can find and integer N such that

$$\left| \sum_{r=n+1}^{n+p} u_r(x) \right| < \frac{\varepsilon}{K}, \qquad \forall \ n \ge N, \ p \ge 1 \qquad \dots (1.10)$$

Hence using Abel's lemma, we get

$$\begin{vmatrix} n+p \\ \sum a_r(x)u_r(x) \\ r=n+1 \end{vmatrix} \le a_{n+1}(x) \qquad \max_{q=1,2,...,p} \begin{vmatrix} n+q \\ \sum u_r(x) \\ r=n+1 \end{vmatrix}$$

$$< K \frac{\varepsilon}{K} = \varepsilon, \text{ for } n \ge N, p \ge 1, a \le x \le b$$

 $\Rightarrow \sum a_n(x) u_n(x)$ is uniformly convergent on [a, b].

Example 1.2.27 Show that the series $\sum \frac{(-1)^n}{n} |x|^n$ is uniformly convergent in $-1 \le x \le 1$.

Solution. Since $|x|^n$ is positive, monotonic decreasing and bounded for $-1 \le x \le 1$, and the series $\sum \frac{(-1)^n}{n}$ is uniformly convergent being alternating series, therefore by Abel's test the series $\sum \frac{(-1)^n}{n} |x|^n$ is also convergent in $-1 \le x \le 1$.

Dirichlet's Test

Theorem 1.2.28 If $a_n(x)$ is a monotonic function of n for each fixed value of x in [a, b], and $a_n(x) \to 0$ uniformly for $a \le x \le b$, and if there is a number K > 0, independent of x and n, such that for all values of x in [a, b],

$$\left| \sum_{r=1}^{n} u_r(x) \right| \leq K, \quad \forall n$$

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then the series $\sum a_n(x) u_n(x)$ converges uniformly on [a, b].

Proof. Since $a_n(x)$ tends uniformly to zero, therefore for any $\epsilon > 0$, there exists an integer N (independent of x) such that for all $x \in [a, b]$

$$|a_n(x)| < \epsilon/4K$$
, for all $n \ge N$

Let $S_n(x) = \sum_{r=1}^n u_r(x)$, for all $x \in [a, b]$, and for all n,

$$\sum_{r=n+1}^{n+p} a_r(x) u_r(x) = a_{n+1}(x) \{S_{n+1} - S_n\} + a_{n+2}(x) \{S_{n+2} - S_{n+1}\} + \dots$$

$$+ a_{n+p}(x) \{S_{n+p} - S_{n+p-1}\}$$

$$= -a_{n+1}(x) S_n + \{a_{n+1}(x) - a_{n+2}(x)\} S_{n+1} + \dots$$

$$+ \{a_{n+p-1}(x) - a_{n+p}(x)\} S_{n+p-1} + a_{n+p}(x) S_{n+p}$$

$$= \sum_{r=n+1}^{n+p-1} \{a_r(x) - a_{r+1}(x)\} S_r(x) - a_{n+1}(x) S_n(x)$$

$$+ a_{n+p}(x) S_{n+p}(x)$$

$$\left| \sum_{r=n+1}^{n+p} a_r(x) u_r(x) \right| \le \sum_{r=n+1}^{n+p-1} a_r(x) - a_{r+1}(x) ||S_r(x)| + |a_{n+1}(x)||S_n(x)| + |a_{n+1}(x)||S_n(x)|| + |a_{n+1}(x)||S_n(x)||S_n(x)|| + |a_{n+1}(x)||S_n(x)|| + |a_{n+1}(x)||S_n(x)||S_n(x)|| + |a_{n+1}(x)||S_n(x)|| + |a_{n+1}(x)||S_n(x)|| + |a_{n+1}(x)||S_n(x)|| + |a_{n+1}(x)||S_n(x)|| + |a_{n+1}(x)||S_n(x)||S_n(x)|| + |a_{n+1}(x)||S_n(x)||S_n(x)|| + |a_{n+1}(x)||S_n(x)||S_n(x)|| + |a_{n+1}(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||S_n(x)||$$

$$+ |a_{n+p}(x)| |S_{n+p}(x)|$$

Making use of the monotonicity of an(x)

$$\sum_{r=n+1}^{n+p-1} |a_r(x) - a_{r+1}(x)| = |a_{n+1}(x) - a_{n+p}(x)|, \text{ for } a \le x \le b,$$

and the relation $|S_n(x)| \le K$, for all $x \in [a, b]$ and for all n = 1, 2, 3, ..., we deduce that for all $x \in [a, b]$ and all $p \ge 1$, $n \ge N$

$$\left| \sum_{r=n+1}^{n+p} a_r(x) u_r(x) \right| \le K |a_{n+1}(x) - a_{n+p}(x)| + \frac{\varepsilon}{4K} 2K$$

$$< K \frac{\varepsilon}{2K} + \frac{\varepsilon}{2} = \varepsilon.$$

Therefore by Cauchy's criterion, the series $\sum a_n(x)u_n(x)$ converges uniformly on [a, b].

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Example 1.2.29 Show that the series $\sum \frac{(-1)^{n-1}}{(n+x^2)}$ is uniformly convergence for all values of x.

Solution. Let
$$u_n = (-1)^{n-1}$$
, $v_n(x) = \frac{1}{n+x^2}$

Since $f_n(x) = \sum_{r=1}^n u_r = 0$ or 1 according as n is even or odd, $f_n(x)$ is bounded for all n.

Also $v_n(x)$ is a positive monotonic decreasing sequence, converging to zero for all real values of x.

Hence by Dirichlets test, the given series is uniformly convergent for all real values of x.

Example 1.2.30 Prove that the series $\sum (-1)^n \frac{x^2 + n}{n^2}$, converges uniformly in every bounded interval, but does not converge absolutely for any value of x.

Solution. Let the bounded interval be [a, b], so that \exists a number K such that, for all x in [a, b], |x| < K.

Let us take $\sum u_n = \sum (-1)^n$, which oscillates finitely, and

$$a_n = \frac{x^2 + n}{n^2} < \frac{K^2 + n}{n^2}$$

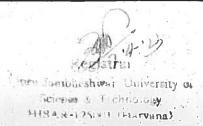
Clearly a_n is a positive, monotonic decreasing function of n for each x in [a, b], and tends to zero uniformly for $a \le x \le b$.

Hence by Dirchlet's test, the series $\sum (-1)^n \frac{x^2 + n}{n^2}$ converges uniformly on [a, b].

Again $\sum \left| (-1)^n \frac{x^2 + n}{n^2} \right| = \sum \frac{x^2 + n}{n^2} \sim \sum \frac{1}{n}$, which diverges. Hence the given series is not absolutely convergent for any value of x.

Example 1.2.31 Prove that if δ is any fixed positive number less than unity, the series $\sum \frac{x^n}{n+1}$ is uniformly convergent in $[-\delta, \delta]$.

Solution. Let
$$u_n(x) = x^n$$
, $v_n = \frac{1}{n+1}$





$$|x| \le \delta < 1$$
, we have $|f_n(x)| = |x + x^2 + ... + x^n|$ $\le |x| + |x|^2 + ... + |x|^n$ $\le \delta + \delta^2 + ... + \delta^n = \frac{\delta(1 - \delta^n)}{1 - \delta} < \frac{\delta}{1 - \delta}$.

Also $\{v_n\}$ is a monotonic decreasing sequence converging to zero.

Hence the given series is uniformly convergent by Dirichlet's test.

Example 1.2.32 Show that the series $\sum_{n=1}^{\infty} (-1)^{n-1} x^n$ converges uniformly in $0 \le x \le k < 1$.

Solution. Let $u_n = (-1)^{n-1}$, $v_n(x) = x^n$.

Since $f_n(x) = \sum_{n=1}^n u_n = 0$ or 1 according as n is even or odd, $f_n(x)$ is bounded for all n. Also

 $\{v_n(x)\}\$ is a positive monotonic decreasing sequence, converging to zero for all values of x in $0 \le x \le k < 1$. Hence by Dirichlet's test, the given series is uniformly convergent in $0 \le x \le k < 1$.

Example 1.2.33 Prove that the series $\sum \frac{\cos n\theta}{n^p}$ converges uniformly for all values of p > 0 in an interval $[\alpha, 2\pi - \alpha[$, where $0 < \alpha < \pi$.

Solution. When $0 , the series converges uniformly in any interval <math>[\alpha, 2\pi - \alpha]$, $\alpha > 0$. Take $a_n = (1/n^p)$ and $u_n = \cos n\theta$ in Dirchlet's test.

Now $(1/n^p)$ is positive monotonic decreasing and tending uniformly to zero for 0 , and

$$\left| \sum_{t=1}^{n} u_{t} \right| = \left| \sum_{t=1}^{n} \cos t\theta \right| = \left| \cos \theta + \cos 2\theta + \dots + \cos n\theta \right|$$

$$= \left| \frac{\cos((n+1)/2)\theta \sin(n/2)\theta}{\sin(\theta/2)} \right| \le \csc(\alpha/2), \ \forall \ n, \text{ for } \theta \in [\alpha, 2\pi - \alpha]$$

Now by Dirchlet test, the series $\sum (\cos n\theta/n^p)$ converges uniformly on $[\alpha, 2\pi - \alpha]$ where $0 < \alpha < \pi$. When p > 1, Weierstrass's M-test, the series converges uniformly for all real values of θ .

1.3 Check Your Progress

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Q.1. Define point-wise and uniform convergence, which one implies the other.



- Q.2. Fill in the blanks of the following results with your understanding:
- a) The limit of integrals is not equal to the integral of the limit.

Consider the sequence $\{f_n\}$, where

$$f_n(x) = nx(1-x^2)^n, \, 0 \le x \le 1, \, n=1,\, 2,\, 3, \dots$$

For
$$0 < x \le 1$$
, $\lim_{n \to \infty} f_n(x) = 0$

At
$$x = 0$$
, each $f_n(0) = 0$, so that $\lim_{n \to \infty} f_n(0) = \dots$

Thus the limit function $f(x) = \lim_{n \to \infty} f_n(x) = 0$, for $0 \le x \le 1$

$$\therefore \int_{0}^{1} f(x) dx = 0$$

Again,

$$\int_{0}^{1} f_{n}(x) dx = \int_{0}^{1} nx(1-x^{2})^{n} dx = \dots$$

so that

$$\lim_{n\to\infty} \left\{ \int_0^1 f_n(x) \ dx \right\} = \dots$$

Thus,

$$\lim_{n\to\infty} \left\{ \int_0^1 f_n \ dx \right\} \neq \int_0^1 f \ dx = \int_0^1 \left[\lim_{n\to\infty} \left\{ f_n \right\} \right] dx$$

Thus, the limit of integral is not equal to integral of limit.

b) Show that the sequence $\{f_n\}$, where

$$f_n(x) = nxe^{-nx^2} \,, \ \, x \geq 0 \ \, \text{is not uniformly convergent on } [0,k], \, k \geq 0$$

Solution. Here

$$f(x) = \lim_{n \to \infty} f_n(x) = \lim_{n \to \infty} nxe^{-nx^2}$$





$$= \lim_{n \to \infty} \frac{nx}{e^{nx^2}} \left[\frac{\infty}{\infty} Form \right]$$

$$= \lim_{n \to \infty} \frac{x}{x^2 e^{nx^2}} = \dots, \quad \forall x \ge 0$$

Further

$$M_n = \sup_{x \in [0,k]} |f_n(x) - f(x)| = |nxe^{-nx^2} - 0| = |y \text{ (say)}|$$

Now, we have

$$y = nxe^{-nx^2}$$

Then

$$\frac{dy}{dx} = \dots$$
 (Evaluate)

For Maxima or Minima

$$\frac{dy}{dx} = 0$$

$$\Rightarrow ne^{-nx^2}(1-2nx^2)=0$$

$$\Rightarrow$$
 $x = \frac{1}{\sqrt{2n}}$ (Solving)

$$\frac{d^2y}{dx^2} = \dots (Evaluate)$$

$$\frac{d^2y}{dx^2}\bigg|_{x=\frac{1}{2\sqrt{n}}} = -\frac{4n^2}{\sqrt{2n}}e^{-\frac{1}{2}} < 0$$

Which shows that y is maximum when $x = \frac{1}{\sqrt{2n}}$ and maximum value is

$$y_{\text{max}}|_{x=\frac{1}{\sqrt{2n}}} = n \frac{1}{\sqrt{2n}} e^{-n} \cdot \frac{1}{2n} = \dots$$

Therefore,

25 |



$$M_{n} = \sup_{x \in I} |f_{n}(x) - f(x)| = \sup_{x \in I} \left| nxe^{-nx^{2}} \right| = \left(\frac{n}{2e}\right)^{\frac{1}{2}} \to \infty \quad \text{as} \quad n \to \infty$$

Therefore the sequence is not uniformly convergent on [0, k].

1.4 Summary of Lesson

The chapter starts with definition of Point-wise convergence and Uniform convergence. It is concluded that Uniform convergence \Rightarrow Point-wise convergence, but the converse it not true. Also the Point-wise and Uniform limits are same for any sequence and series of functions. The Uniform convergence of several examples is checked by definition method, followed by M_n -test to check convergence of sequence of functions. Further Cauchy criterion for Uniform convergence is proved. Next, the Weierstrass M-test, Abel's test and Dirichlet's test are proved with several illustrative examples.

1.5 Key Words

- 1. Sequence and Series of real numbers.
- 2. Cauchy Criterion for convergence.
- 3. p-test for convergence of series of real numbers.
- 4. Alternating series test.

1.6 Self-Assessment Test

- Q.1 Show by definition method that the sequences $\{nx(1-x^2)^n\}$ and $\{n^2x(1-x^2)^n\}$ are not Uniformly convergent on [0, 1].
- Q.2 Show that the series: $(1-x^2) + x(1-x^2) + x^2(1-x^2) + \dots$ is not Uniformly convergent on [0, 1].
- Q.3 Use M_n-test to check the Uniform convergence of the following sequences:

$$(i) \quad \left\{ \frac{\sin nx}{\sqrt{n}} \right\}, 0 \le x \le 2\pi$$

$$(ii) \ \left\{\frac{x}{n+x}\right\}, 0 \le x \le k$$

- Q.4 Use Weierstrass's M-test to prove that the series $\sum n^{-x}$ is uniform convergent in $[1+\delta,\infty), \delta>0$.
- Q.5 Use Abel's or Dirichlets's tests to check the uniform convergence of series:

$$\{i\} \quad \sum \frac{\log n}{n^x}, \quad x \ge 1 + \alpha > 1$$





$$\{ii\}$$
 $\sum_{n=1}^{\infty} \frac{\left(-1\right)^n}{\sqrt{n}} \sin\left(1+\frac{x}{n}\right)$, over any closed and bounded subset of R.

1.7 Answers to check your progress

A.1 The reader is suggested to study definition at beginning of chapter.

A.2 The following are answer in series to the blanks in

2(a)
$$0, \frac{n}{2n+2}, \frac{1}{2}.$$

2(b) 0,
$$ne^{-nx^2}(1-2nx^2)$$
, $-2xne^{-nx^2}(3-2nx^2)$, $\left(\frac{n}{2e}\right)^{\frac{1}{2}}$

8 References/ Suggested Readings

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Table of Contents for M.Sc. (Mathematics) Through Distance Learning w.e.f. 2021-22

Total: 116 credits

M.Sc. (Mathematics) 1ST Semester

MAL-511 Algebra

5 Credits (5-0-0)

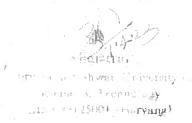
Time: 3 Hours

Marks for Major Test (External): 70

Marks for Internal Exam: 30

Total:100

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2	Central series and Field extensions I	26
3	Field Extensions-II and Constructions	48
4	Field Extensions-III	70
5	Galois Theory and Finite Fields	92



MAL-512: REAL ANALYSIS

5 Credits (5-0-0) Time: 3 Hours

Marks for Major Test (External): 70 Internal Assessment: 30

Total Marks: 100

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MAL-513: MECHANICS

5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70 Internal Assessment:30 Total Marks:100

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3	Generalized co-ordinates and Lagrange's Equations	49-67
4	Hamilton's Equations of Motion	68-97
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MAL-514: ORDINARY DIFFERENTIAL EQUATIONS-I

5 Credits (5-0-0) Time: 3 Hours

Marks for Major Test (External): 70
Internal Assessment: 30

Total Marks: 100

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MAL-515: COMPLEX ANALYSIS-I

5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70 Internal Assessment: 30

Total Marks: 100

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3	Complex Integration	26
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MAL-516: PROGRAMMING WITH FORTRAN (THEORY)

Marks for Major Test (External): 70

Internal Assessment: 30 5 Credits (5-0-0)

5 Credits (5-v-v)		Internal Assessment: 50
Time: 3 Hours		Total Marks: 100
C. N.	Legger Title	PC No

Lesson Title	PG. No.
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	y.
Steps to Solve a Mathematical Problem with Computer	31-55
Basic Concepts of Fortran	56-85
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M.Sc. (Mathematics) 2ND Semester MAL-521: ABSTRACT ALGEBRA

5 Credits (5-0-0) Time: 3 Hours Marks for Major Test (External): 70 Internal Assessment: 30

Total Marks: 100

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MAL-522: MEASURE AND INTEGRATION THEORY

Marks for Major Test (External): 70

5 Credits (5-0-0)

Internal Assessment: 30

Time: 3 Hours

Total Marks: 100

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	8	2
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MAL-523: METHODS OF APPLIED MATHEMATICS

Marks for Major Test (External): 70

5 Credits (5-0-0) **Internal Assessment: 30** Time: 3 Hours

Total Marks: 100

Sr No.	Lesson Title	PG. No.
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3	Curvilinear Co-ordinates	61 - 91
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MAL-524: ORDINARY DIFFERENTIAL EQUATIONS-II

Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

5 Credits (5-0-0) Time: 3 Hours

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MAL-525: COMPLEX ANALYSIS-II

5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70 Internal Assessment: 30

Total Marks: 100

Sr. No.	Lesson Title	PG. NO.
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2	Entire Function	17
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MAL-526: Advanced Numerical Methods (5.0 Credit)

5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

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2	Norms and Approximation of the functions	27
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MAL-631: TOPOLOGY

5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70 Internal Assessment: 30

Total Marks: 100

Sr. No.	Lesson Title	PG No.
1.	Topological Space	1
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MAL-632: PARTIAL DIFFERENTIAL EQUATIONS

Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

5 Credits (5-0-0) Time: 3 Hours

> PG No. **Lesson Title** Sr. No. 3 Preliminaries Solution of Linear Partial Differential Equations 22 2 54 Green's Function 3 82 Solution of Wave Equation 4 109 Other Techniques to Represent Solution 5

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MAL-633: MECHANICS OF SOLIDS-I

5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70 Internal Assessment: 30

Total Marks: 100

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MAL-636: FLUID MECHANICS

(w.e.f. 2020-2021)

Semester 3rd

5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

Sr. No.	Lesson Title	PG. No.
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3	Kinematics of Fluids	58
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MAL-637: ADVANCED DISCRETE MATHEMATICS

5 Credits (5-0-0) Time: 3 Hours Marks for Major Test (External): 70 Internal Assessment: 30

Total Marks: 100

Sr. No.	Lesson Title	PG·No.
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M.Sc. (Mathematics) 4TH Semester

MAL-641: FUNCTIONAL ANALYSIS

5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70 Internal Assessment: 30

Total Marks: 100

Sr. No.	Lesson Title	PG. No.
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1	Normed Linear Spaces	1
2	Banach Space and Its Examples	20
3	Space of Linear Transformations	35
4	Conjugate Spaces and Hahn Banach Theorem	47
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MAL-642: DIFFERENTIAL GEOMETRY

5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70 **Internal Assessment: 30 Total Marks: 100**

Sr. No.	Lesson Title .	PG. No.
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5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70 Internal Assessment: 30

Total Marks: 100

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MAL-644: INTEGRAL EQUATIONS 5 Credits (5-0-0)
Time: 3 Hours

Marks for Major Test (External): 70 Internal Assessment: 30

Total Marks: 100

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MAL-645: ADVANCED FLUID MECHANICS

Semester 4th

5 Credits (5-0-0)

Time: 3 Hours

Marks for Major Test (External): 70

Internal Assessment: 30

Total Marks: 100

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