PG Pool (Index and Syllabus)

Table PG01: Pool of VALUE ADDED COURSES

Semester 1

* Detailed Syllabus will be provided in due course of time

** Nomenclature of course are filled as provided by departments

Table PG02: Pool of VALUE ADDED COURSES

Semester 3

Sr No.	Name of Course	Department	Page No.
1.	**Indian Budgetary System**	**Economics**	*
2.	Research Ethics	Psychology	43
3.	Gender and Development	Social Work (UTD)	45
4.	**History of Physics**	**M. Sc. Physics**	*
5.	Vedic Mathematics	Mathematics	*
6.	Ecology and Literature	English	47
7.	Hindustaan ki Adabi aur Tehzeebi Rawayat	Urdu	50
8.	Tribal knowledge system in India	Political Science andPublic Policy (Administration & Governance) (UTD)	52
9.	Culture and Cinema	Media Studies	54
10.	Energy Resources	Environmental Science	55
11.	Stress Management Techniques	Physical Education	*
12.	Tribal Knowledge system in India	Political Science & Public Policy	*
13.	Understanding Heritage	History	*
14.	**Sociology of Food****	**Sociology**	*
15.	**Green Energy and Water Crediting Techniques: Geographical Perspective**	**Geography**	*
16.	Art of Balanced Living	Indian Knowledge & Languages	*
17.	Prayvaran Aur Hindi Sahitya	Hindi	57
18.	**Human Genetic Syndromes****	**Zoology**	58
19.	Biodiversity and its conservation	Botany	*
20.	Biosafety, Bioethics and IPR issues	Biotechnology	*
21.	Environmental Studies	Computer Science	59
22.	Professional Practice	M. Design in Interior Design (UTD)	61
23.	Business Ethics	Management	*
24.	E-filing of returns	Commerce	*
25.	Personal Finance	Applied Economics	63
26.	Circular Economy	Applied Economics	65
27.	Cyber Security	Computer Science (M.Sc/M.Sc. AI & DS)	67
28.	Human Value & Community Outreach	Computer Science (M.C.A.)	69

* Detailed Syllabus will be provided in due course of time

** Nomenclature of course are filled as provided by departments

Table PG03: Pool of Skill Enhancement Courses

Semester 2

S.No.	Name of Course	Department	Page No.
1.	Introduction to Research methodology	Economics	71
2.	Digital Economics	Economics	72
3.	**Data Analysis with Statistical Software-1**	**Applied Economics**	73
4.	Counselling Skills & Techniques	Psychology	74
5.	**Counselling in Social Work**	**Social Work(UTD)**	76
6.	Radiation Physics	M. Sc. Physics	78
7.	Computational Techniques using MATLAB	Mathematics	80
8.	Communication skill for Health Care Provider	Physiotherapy (UTD)	*
9.	Creative Writing and Fundamentals	English	82
10.	Script Nigaari	Urdu	84
11.	Audio-Visual Editing	Advertising & Public Relations (UTD)	*
12.	Effective Leadership	Political Science & Public Policy	86
13.	Photoshop and Illustrator	Media Studies	88
14.	Introduction to JyotishShastra	Indian Knowledge &Languages	*
15.	Basics of Remote Sensing andGIS	EnvironmentalScience	89
16.	Yoga for Wellness and Personal Fitness Training	Physical Education	*
17.	Effective Leadership	Political Science and Public Policy (Administration& Governance)	*
18.	**Basics of Archaeology****	**History**	93
19.	**Basics of Social Research****	**Sociology**	95
20.	Reading and Interpretation of Maps	Geography	97
21.	Technique of SanskritTranslation	Sanskrit/ Indian Knowledge & Languages	*
22.	Hindi Bhasha Ka Rachnatamak Savroop	Hindi	100
23.	Economic Zoology	Zoology	102
24.	Genomics	Botany	103
25.	Molecular Medicine and Diagnostics	Biotechnology	*
26.	Programming in Python**	Computer Science	105
27.	M. Design in Interior Design (UTD)	Social Media Marketing	108
28.	Chemistry	Industrial Chemistry	*
29.	Production andOperations Management	Management	110
30.	EntrepreneurialSkills and Business Plan Development	Commerce	*
31.	Leadership andManagement Skills	Commerce	*

32.	Problem Solving andPython	Computer Science (MCA)	112
33.	Python Programming**	Computer Science (M.Sc/M.Sc. AI & DS)	114
34.	Personality & Skill Development	Neuroscience	315

* Detailed Syllabus will be provided in due course of time

** Nomenclature of course are filled as provided by department

Table PG04: Pool of Skill Enhancement Courses

Semester 3

Sr. No.	Name of Course	Department	Page No.
1.	Tourism Economics	Economics	*
2.	Banking and Financial Institutions in India	Economics	*
3.	**Data Analysis with Statistical Software-II**	**Applied Economics**	*
4.	Basic of Statistics using SPSS	Psychology	117
5.	Development Communication	Social Work(UTD)	119
6.	**Programming in Physics using MATLAB**	**M.Sc. Physics**	*
7.	LaTex	Mathematics	*
8.	Python for Statistical Analysis	Mathematics	*
9.	Spoken English	English	121
10.	Naamaa Nigaari aur Idaarat	Urdu	125
11.	Graphics and Multimedia	Advertising &Public Relations (UTD)	*
12.	Applied Political Science	Political Science and Public Policy	127
13.	Audio visual Editing	Media Studies	*
14.	Techniques of SanskritTranslation	Hindu Studies/Indian Knowledge & Languages	*
15.	Global Environmental Issues	EnvironmentalScience	*
16.	Archives and Museum	History	*
17.	**Social Entrepreneurship**	**Sociology**	*
18.	Computer aided geographicalgraphs and diagrams	Geography	*
19.	Bhashayi Dakshta	Sanskrit/ Indian Knowledge & Languages	*
20.	Maukhik Bhashiye Dakshita	Hindi	129
21.	Medical Physiology	Zoology	131
22.	Restoration Ecology	Botany	*
23.	Food Biotechnology	Biotechnology	*
24.	Numerical Ability Enhancement Skills	ComputerScience	132
25.	Online MOOC Course**	M. Design in Interior Design(UTD)	134
26.	Management	Design Thinking	*
27.	Commerce	Business Communication & PresentationSkills	*
28.	Commerce	Advanced Exceland Data Analysis	*
29.	Computer Science (MCA)	Mobile Application andDevelopment	136
30.	Computer Science (M.Sc/M.Sc. AI & DS)	Numerical Ability Enhancement Skill	138

Table PG05: Pool of Multidisciplinary Courses

Sr. no.	Name of dept.	Sem	Courses	Page No.
1	Commerce	1	Entrepreneurship and Innovation Management	140
		2	International Business and Cross-Cultural Management	142
		3	Financial Analysis for Stock Market	*
		4	Income Tax: Assessment and Procedure	*
2	Computer Sciences (M.Sc./M.Sc. AI & DS)	1	Fundamentals of Computer Science	144
		2	Web TechnologiesFundamentals	146
		3	Programming with C	148
		4	Cloud Computing	150
3	Geography	1	Fundamental of Geography (Theory)	*
		2	**Geography of Haryana**	152
		3	**Geography in Everyday Life**	*
		4	**Urban EnvironmentChallenges**	*
4	Psychology	1	Behavioral & PersonalityDynamics	154
		2	Psychology of Happiness & Peace	156
		3	Climate Change & Mental Health	158
		4	Vulnerabilities of Contemporary Indian Society	160
5	Hindi	1	Hindi Yatra Sahitya	162
		2	Gandhi Darshan Avam Hindi Sahitya	164
		3	Bhartiya Avam PaschatyaRangmanch	166
		4	Hindi Sahitya: VividhVimarsh	168
6	Physics	**1**	**Modern Physics**	169
		2	**Spectroscopic Techniques**	171
		3	**Synthesis and Characterization Harvesting**	*
		4	**Renewable Energy and Energy Harvesting**	*
7	Chemistry	1	Chemistry of Materials	173
		2	Drug Design and Discovery	*
		3	Medical Chemistry	*
8	Urdu	1	Urdu Lisanyat	175
		2	Urdu Qawaid	177
		3	Urdu Novel	179
		4	Tarjuma Nigaari	181

9	History	1	**History & Culture of Haryana**	183
		2	**Historical Applications of Tourism****	185
		3	Environmental History ofIndia	*
		4	Women in Indian History	*
11	Physical Educations	1	Sports Management and Administration	*
		2	Sports Economics andFinance	*
		3	Legal Aspects of Sports	*
		4	Global Perspectives in Sports OR Entrepreneurship in Sports (Theory + Practical)	*
12	Psychology	1	Behavioural & Personality Dynamics	187
		2	Psychology of Happiness & Peace	188
		3	Climate Change & Mental Health	190
		4	Vulnerabilities of Contemporary Indian Society	
13	Mathematics	1	Aptitude Reasoning-I	192
		2	Aptitude Reasoning-II	193
		3	Fundamental of Mathematics	*
		4	Fundamentals of Statistics	*
14	Economics	1	Introduction to Economics	194
		2	Financial Institutions andMarkets	195
		3	Contemporary EconomicIssues in India	*
		4	Indian Economic Policy	*
15	Management	1	Human ResourceManagement	196
		2	Marketing Management	198
		3	Strategic Management	*
		4	Entrepreneurship and Innovation	*
16	Social Work	**1**	**Social Outreach of Community Engagement**	200
		2	**Environmental concerns ofsocial Work**	202
		3	**NGO Management**	204
		4	**Corporate social Responsibility & SocialEntrepreneurship**	206
17	English	1	Literature and Cinema	208
		2	Introduction to Phonetics	210
		3	Modern Indian English Novel	212
		4	Women's Writing	215

18	Advertising & Public Relations (UTD)	1	Concept and Importance of Public Relations	*
		2	Crisis Communication and its Applications	*
		3	Basics of AdvertisementDesigning	*
		4	Digital Marketing andBranding	*
19	Political Science and Public Policy (Administration & Governance)	1	Public Policy in India	218
		2	Citizenship in Global Perspective**	221
		3	An Introduction of Indian Constitution**	223
		4	Governance: Emerging Issues and Challenges**	225
20	Political Science & Public Policy	1	Political Sociology	227
		2	Political Economy	229
		3	Geo-Politics	231
		4	Foreign Policy in India	*
21	Media Studies	1	Introduction to Communication	233
		2	Writing for Media	234
		3	Media and Society	236
		4		*
22	Hindu Studies/ Indian Knowledge & Languages	1	Paatanjal Yogasutra	*
		2	Introduction to Natyashastra	*
		3	Ayurveda and Holistic Health	*
23	Environmental Science	1	Pollution and Climate Change	237
		2	Natural Resources Management	239
		3	Natural Hazards and Disaster Management	241
		4	Environment, Development &Sustainability	*
24	Sociology	1	Understanding Sociology & Indian Society**	243
		2	**Rural Society: Structure and Change****	245
		3	**Contemporary Problems inIndia**	*
		4	**Gender and Society**	*
25	Sanskrit/ Indian Knowledge & Languages	1	Sanskrit Typing and ShortHand	*
		2	Sanskrit Composing and Proof Reading & Epigraphy	*
		3	Temple culture	*
26	Zoology	1	Population Genetics & Evolution-I	311
		2	Population Genetics &Evolution-II	312
		3	Aquaculture-I	313
		4	Aquaculture-II	*

27.	Botany	1	Principles of Plant Pathology	247
		2	Conservation Biology	248
		3	Biophysical & Biochemical Techniques	*
		4	Plant Tissue Culture	*
28.	Biotechnology	1	Introduction to Biotechnology**	249
		2	Biology of Infectious Diseases**	250
		3	Microbial Biotechnology	*
		4	Molecular Genetics	*
29.	M. Design in Interior Design (UTD)	1	Importance of Interior design: Daily Lifestyle	251
		2	Critical and Historic Studies:Styling, Texture and Textiles	253
		3	Introduction of Ergonomics	255
		4	Theory Seminar: Theory of Interior Design	257
30	Applied Economics	1	Contemporary Economic Issues in India	259
		2	Data Analysis with Statistical Softwares	261
		3	International Trade	*
		4	Global Economy- Challenges& Prospects	*
31	Computer Science (MCA)	1	Digital Electronics	263
		2	Discrete Mathematics Or Modelling Simulation	265
		3	Probability and Statistics Or Fundamental of Electrical &Electronics Science	270
		4	Cloud Edge and Fog Computing	274
32	Dept. Of Media Studies (M.A. APR)	1	Concept & Importance of Public Relations	279
		2	Crisis Communication and itsApplications	281
		3	Basis of AdvertisementDesigning	282
33	Dept. of Neuroscience	1	Introduction to Neuroscience	316
		2	Neuropsychology	317

* Detailed Syllabus will be provided in due course of time
** Nomenclature of course are filled as provided by department

Table PG06: Pool of Ability Enhancement Courses (AEC)

Semester 1

Course Code	Nomenclature of Course	RUN BY DEPARTMENT	Page No.
PG-AEC1-1	English Communication Skills Level-1	Dept. of English and other foreign Language/Dept. of English	283
PG -AEC1-2	Tarseel-e-aama, Nazariya, Ibtida Irtiqa	Dept. of English and other foreign Language/Dept. of Urdu	285
PG -AEC1-3	Hindi Bhasha ka Rachnatamak Abhivyakti-1	Dept. of Indian Knowledge andLanguage/ Dept. of Hindi	287
PG -AEC1-4	Introduction to German Culture and Language	Dept. of Indian Knowledge andLanguage/ Dept. of German	*
PG -AEC1-5	Introduction to Japanese Culture & amp; Language	Dept. of Indian Knowledge andLanguage/ Dept. of German	*
PG -AEC1-6	Communication Skills	Dept. of Management	*
PG -AEC1-7	Basic Spoken Sanskrit	Dept. of Indian Knowledge andLanguage/ Dept. of Sanskrit	*

* Detailed Syllabus will be provided in due course of time

** Nomenclature of course are filled as provided by department

Table PG07: Pool of Ability Enhancement Courses (AEC)

Semester 2

Course Code	Nomenclature of Course	RUN BY DEPARTMENT	Page No.
PG -AEC2-1	English Language Teaching	Dept. of English and other foreign Language/ Dept. of English	297
PG -AEC2-2	Sahafat	Dept. of English and other foreign Language/ Dept. of Urdu	301
PG –AEC2-3	Hindi Bhasha ka Rachnatamak Abhivyakti-2	Dept. of Indian Knowledge and Language/ Dept. of Hindi	303
PG –AEC2-4	German Grammar I	Dept. of Indian Knowledge and Language/ Dept. of German	*
PG –AEC2-5	Japanese Grammar-I	Dept. of Indian Knowledge and Language/ Dept. of German	*
PG –AEC2-6	Corporate Leadership& Networking Skills	Dept. of Management	*
PGAEC2-7	Advanced Spoken Sanskrit	Dept. of Indian Knowledge and Language/ Dept. of Sanskrit	*

* Detailed Syllabus will be provided in due course of time

** Nomenclature of course are filled as provided by department

241/ECO/VA101	Sustainable Development

Maximum Marks:50 **Written exam:35**
Credits:2 **Internal assessment:15**
Note:

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3*5=15 marks).
3. For the remaining three questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit I

Introduction

Sustainable Development- Definition, Principles of Sustainable Development: History and emergence of the concept of Sustainable Development, Environmental issues and crisis, Sustainable Development programs and policies.

Unit II

SDGs & MDGs

Evolution Of Millenium and Sustainable development Goals, Millenium Development Goals, Sustainable Development Goals.

Value Added Course from the department for pool of the Courses in the University
(All the departments will offer value added course for the students of same or different Departments.

These courses are offered by Department of Psychology

Semester 1

Human values and ethics

VAC-1 Human Values & Ethics **(241/MPSY/VA 101)** **Maximum Marks: 50**
Credits:2 (Hrs./Week: 2) **Theory Examination: 35**
Internal Assessment: 15
Time: 2 hrs.

Note: The students will be required to attempt three questions in all. Question No. I will be compulsory comprising of 8 short answer type questions of 3 marks each and will cover the entire syllabus. The answer should be in 100-200 words. The students are required to attempt five short answer type questions out of 8,i.e., 5X 3 = 15 marks. In addition to it, Question Nos. II to V will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 10 marks each i.e. 2 X 10 = 20 marks thus making it the total weight age to 35 marks. Two questions to be attempted. One from each unit.

Course Outcomes:-

- Students will demonstrate a comprehensive understanding of the importance of human values and Ethics in their personal lives and professional careers.
- Students will develop critical thinking abilities to assess how family, society, and educational institutions shape the incorporation of human values, clarifying their individual roles in fostering moral development.
- Students will be able to apply human values and ethics in real life settings and will be able to deal with the ethical challenges prevalent in the institutions.

Unit I

Human Values: Meaning, Origin and its functions; Types of values, Importance of human values in Public and Private life. Role of Family, Society and Educational Institutions in inculcating human values, Sources of human values.

Unit II:

Ethics: Meaning, nature and characteristics of ethics; Morals v/s ethics; Types of ethics in public and private relationships, Principles of ethical behaviour, Role of family and institution in building of ethics, Importance of Human ethics in modern society.

Challenges for ethical practices in institutions: Ragging, suicide and need for educational counselling, violence and peaceful protest, conflict resolution.

Suggested readings:

1. Prof.D.R.Kiran "*Professional Ethics and Human Values*"
2. A Textbook On Professional Ethics And Human Values. (2007). India: New Age International (P) Limited.
3. Prof.A.R.Aryasri, DharanikotaSuyodhana "*Professional Ethics and Morals*" Maruthi Publications.
4. A.Alavudeen, R.KalilRahman and M.Jayakumaran "*Professional Ethics and Human Values*" -Laxmi Publications.
5. PSR Murthy "*Indian Culture, Values and Professional Ethics*" BS Publication

Innovative Thinking & Positivity

Credits: 2 (Hrs/week:2)

M.Sc. - Psychology

Semester- I

Maximum Marks: 50
Theory Examination: 35
Internal Assessment: 15
Max. Time: 2 hrs.

Session	Topic	Unit/Content Summary	CO No.
1	New Awakening	Meeting and sharing views	Attaining the ability to move within
2	Self-Exploration	Understanding the mind and its functioning and also learning techniques to enhance the powers of the mind	**Learn to enhance the powers of the mind, understand the Consciousness and know the Supreme Consciousness. Apply the methods to control and steer the thoughts towards positive and constructive.**
3	Don't Overthink ,Be positive anyway	Understanding the thought process cycle to change the attitude by changing the thought and learning to overcome fear in the form of various situations in life (exam phobia, etc.)	**Overcome exam phobia or fear and develop optimism and positive mental attitude towards life. Identify the signs of fear and practice overcoming them.**
4	Thought Process	Attaining the ability to check the quality of thoughts and change them by knowing the thought process cycle, hence bringing transformation in attitude,behaviour, personality and destiny.	**Attain the ability to check the quality of thoughts and change them by knowing the thought process cycle, hence bringing transformation in attitude, behavior, personality and destiny. Adopt these methods in personal situations.**
5	Supreme Consciousness	Knowing the self and knowing the Supreme Power and learning to establish a connection between the Consciousness and the Supreme Consciousness	**Learn to enhance the powers of the mind, understand the Consciousness and know the Supreme Consciousness. Apply the methods to control and steer the thoughts towards positive and constructive.**
6	Meditation-Appointment with self	Knowing the self and knowing the Supreme Power and learning to establish a connection between the Consciousness and the Supreme Consciousness	**Understand how to lead life with a solution-oriented approach to handle tough situations and learn meditation as a remedy to all our problems. Practice meditation.**
7	Exam Fabia	Understanding the thought process cycle to change the attitude by changing the thought and learning to overcome fear in the form of various situations in life (exam phobia, etc.)	**Overcome exam phobia or fear and develop optimism and positive mental attitude towards life. Identify the signs of fear and practice overcoming them.**
8	My Inner Powers	Understanding the mind and its functioning and also learning techniques to enhance the powers	**Learn to enhance the powers of the mind, understand the Consciousness and know the Supreme Consciousness. Apply the methods**

		of the mind	**to control and steer the thoughts towards positive and constructive.**
9	Guided Project	Guided Project will Be Done	
10	Stress free living	Learning to lead a stress-free life by learning the art of conflict resolution and handling situations with ease, calm and a stable mind	**Learn to identify signs of stress and lead a stress-free life by learning the art of conflict resolution. Developing strategies of diffusing tension and develop emotional maturity.**
11	How to Calm down and control Anger	Building harmony in all relationships with the right thinking and by renouncing fault-finding nature	**Attain the power to maintain calm and composure in situations of crisis by managing the anger level and developing self-control.Identify anger triggers/buttons to handle their anger ,interpret and judge the situation and act or behave appropriately.**
12	Developing Pleasing Personality	Enhancing outer personality by knowing inner personality.	**Learn** to handle challenges and obstacles happily
13	Conflict Resolution- Lets win-win	Learning to lead a stress-free life by learning the art of conflict resolution and handling situations with ease, calm and a stable mind	**Learn to identify signs of stress and lead a stress-free life by learning the art of conflict resolution. Developing strategies of diffusing tension and develop emotional maturity.**
14	Revision		
15	Revision		

Brief Description of Self-learning components by students: (through books/resource material etc.): Books present in the Thought Lab and NCU Library, positive affirmations guided commentaries for meditation.

Books Recommended : Text Books 1. Happiness Unlimited by B.K. Sister Shivani 2. Inside Out by B. K. Dadi Janki 3. Everyone can Meditate by Brahma Kumaris 4. Slaying the three dragons of Doubt, Worry and Fear by B.K. Anthony Strano 5. Just a Moment by Brahma Kumaris4 6. Refresh and Heal yourself through Meditation by B.K. Pari 7. Divine Values of a better world by B.K. Jagdish Chander 8. Science and Spirituality by B.K. Jagdish Chander 9. How to make Life Blissful by B.K. Jagdish Chander 10. How to think by B.K Pari 11. Complete RajYoga by B.K. Jagdish Chander 12. Secrets of Mind Power by Harry Lorayne 13. An experimental approach to mastering Meditation by Rona Schweitz 14. Spirituality and Mental Health by Dr.Avdesh Sharma 15. Time Management and Personality Development by John Adair, Melanie Allen 16. Improve your Memory - Power of Third Eye by Chander Shekhar 17. Realistic Positive Thinking by Sandeep Maheshwari in Hindi 18. Power of Subconscious Mind by Joseph Murphy

Master of Social Work
Semester - I
Social Justice, Human Rights and Social Work

VAC-01
Credits: 2 (Hrs./Week: 3)

Maximum Marks: 50
Theory Examination: 35
Internal Assessment: 15

Note: The students will be required to attempt three questions in all. Question No. I will be compulsory comprising of 8 short answer type questions of 3 marks each and will cover the entire syllabus. The answer should be in 100-200 words.The students are required to attempt five short answer type questions out of 8,i.e., 5X 3 = 15 marks. In addition to it, Question Nos. II to V will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 10 marks each i.e. 2 X 10 = 20 marks thus making it the total weight age to 35 marks. Two questions to be attempted. One from each unit.

Course Outcomes:

- Understand human rights frameworks and apply them to address inequality and injustice.
- Gain practical skills to advocate for social justice and address systemic issues in various contexts.
- Understand personal and professional biases and promote ethical practices in social work and related fields.

Unit-I
Social Justice: Concepts and Dimensions

- Definition and Concepts of Social Justice
- Historical Evolution of Social Justice
- Dimensions of Social Justice: Economic, Social, Political
- Social Justice as a Core Value in Social Work

Unit-II
Human Rights: Concepts and Historical Context

- Concept and Definition of Human Rights
- Theories and Philosophy of Human Rights
- Key Human Rights Declarations (e.g., Universal Declaration of Human Rights) • Human Rights Issues

Unit-III
National Institution for Upholding Social Justice and Constitutional Rights

- Overview of the Indian Constitution and its Role in Social Justice
- Indian Legal System
- Statutory bodies/organs for justice

- Other instruments – PIL, Legal Literacy Aid, RTI

Unit-IV

Social Justice and Advocacy in Social Work

- Human Rights Perspectives in Social Work Practice
- Human Rights Activism
- Civil Society Activism (Case Studies)

Suggested Readings:

Clapham, A. (2015). *Human rights: A very short introduction* (2nd ed.). Oxford University Press.
Reichert, E. (2003). *Social work and human rights: A foundation for policy and practice*. Columbia University Press.
Krishna, P. S. (2017). *Social exclusion and justice in India*. Taylor & Francis.
Jodhka, S. S. (2015). *Caste in contemporary India*. Routledge.
Kummitha, R. (2015). Social exclusion: The European concept for Indian social reality. *Social Change, 45*(1), 1–23. https://doi.org/10.1177/0049085714561218
Singh, A. K. (2014). *Human rights and social justice*. VL Media Solutions.
Sandel, M. J. (2010). *Justice: What's the right thing to do?* (Reprint ed.). Farrar, Straus and Giroux.
Clayton, M., & Williams, A. (Eds.). (2004). *Social justice*. Blackwell Publishers.
Centre for Development of Human Rights (CDHR). (2004). *The right to development: A primer*. Sage Publications.
Janusz, S. (Ed.). (2003). *New dimensions and challenges for human rights*. In *Manual on human rights* (pp. 1-xx). Rawat Publications.
Reichert, E. (2003). *Social work and human rights: A foundation for policy and practice*. Columbia University Press.
Baxi, U. (2002). *The future of human rights*. Oxford University Press.
Ife, J. (2001). *Human rights and social work: Towards rights-based practice*. Cambridge University Press.
Chandra, A. (2000). *Human rights activism and role of NGOs*. Rajat Publications.
Bakshi, P. M. (1999). *The constitution of India*. Universal Law Publishing Co. Pvt. Ltd.
Nirmal, C. J. (1999). *Human rights in India – Historical, social and political perspectives*. Oxford University Press.
Hebsur, R. K. (Ed.). (1996). *Social interventions for social justice*. Tata Institute of Social Sciences.
Quataert, J., & Wildenthal, L. (Eds.). (2021). *The Routledge history of human rights*.

Routledge. **Useful links**

https://www.un.org/en/global-issues/human-rights

Ministry of Social Justice and Empowerment: https://socialjustice.gov.in/

Semester-I

Value Added Course

COURSE ID: 241/PHY/VA101

INDIAN SCIENCE HISTORY

Marks (Theory): 35 **Credits: 2**

Marks (Internal Assessment): 15 **Time: 3 Hours**

Note: The examiner will set 9 questions, asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist of at least 4 parts covering entire syllabus. The question paper is expected to contain problems to the extent of 20% of total marks. The examinee will be required to attempt 5 questions; selecting one question from each unit and the compulsory.

Course Outcomes:

After successful completion of the course on Indian Science History, a student will be able to:

- *Gain familiarity with the biographies of Indian scientists and the various challenges they faced in the evolution of Indian science.*
- *Learn the contribution of Indian scientists in the different disciplines of science.*

Unit-I

Physics: Bibliography of Indian scientists in the field of Physics, Work and life of CV Raman and Bhabha, History of Indian rocket technology, Indian Missile Man, History of Bose-Einstein Condensation, Contribution of Chandrasekhar and Saha in astrophysics, Evolution of Nuclear power in India, ISRO contributions.

Unit-II

Bibliography of Scientists in the field of Chemical Sciences, Contribution made by the Chemists of Ancient India like Nagarjuna and Kanada. Shanti Swaroop Bhatnagar - "Father of Research Laboratories" in India, contribution to industrial research and role in establishments of CSIR, Founder of India's first pharmaceutical company, research on pharmaceuticals.

Unit-III

Mathematics: Bibliography and contribution of Indian Mathematicians: Aryabhatta, Brahmagupta, Bhaskara I, Bhaskara II, Srinivasa Ramanujan, Shakuntala Devi, Manjul Bhargava, Akshay Venkatesh. Statistics.

Unit-IV

Geography: Contribution of Varahamihira, Brahmagupta, Bhaskaracharya, Aryabhata and Ancient Indian Literature to the development of scientific knowledge in geography, knowledge management in ancient India, protection of traditional knowledge, need and significance for protecting traditional knowledge.

References/Books:

1. Science India, Scientific Magazines by Vijnana Bharati. For details visit: https://scienceindiamag.in.
2. Everyman's Science by ISCA. For details visit: http://www.sciencecongress.nic.in.
3. Evolution of Geographical Thought, Husain, M., 2012, Rawat Publications.
4. Knowledge Traditions and Practices of India (a text book) 2012, Kapil Kapoor, Michel Danino.
5. E-resources: http://nptel.ac.in/courses/121106003.
6. Probability and Statistical Inference, Mukhopadhyay, N., 2000. Marcel Dekker, Inc. New York.

M.Sc. MATHEMATICS 1st SEMESTER

Mathematics in Everyday Life

VAC-01 Maximum Marks: 50

Credits: 2 External Examination: 35

Max. Time: 3 hrs Internal Assessment: 15

Course ID: 241/MAT/VA101

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of seven short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Students will have to attempt one question from each unit. Each question shall carry equal marks.*

Course Learning Outcomes:

CLO1 Perform basic arithmetic operations and apply them in daily activities.

CLO2 Understand and use algebraic expressions and equations in problem-solving.

CLO3 Apply geometric concepts in real-world contexts.

CLO4 Interpret and analyze statistical data.

Unit-I

Basic Arithmetic and Number Operations: Introduction to numbers and operations, Fractions, decimals, percentages, Ratios and proportions.

Interest calculations: Simple and Compound interest, Loans and EMIs

Unit-II

Algebra in Daily Life: Basic algebraic expressions and equations, solving linear equations, understanding functions and graphs.

Unit-III

Geometry in the Real World: Basic geometric shapes and properties, Basics of differentiation and integration, T-ratios and practical applications.

Unit-IV

Introduction to Statistics: Basic statistical concepts, mean, median, mode, Data collection and representation (charts, graphs, tables), Probability and basic concepts.

Reference Books:

1. "Mathematics for Everyday Life" by David E. Newton
2. "Basic Mathematics" by Serge Lang
3. Online resources and educational platforms (Khan Academy, Coursera)
4. Practical Mathematics Workbooks and Case Studies

VALUE ADDITION COURSES

VAC-1 INDIAN VALUES AND INTERPERSONAL DIALOGUE

SEMESTER 1 **Maximum Marks: 50**

Theory: 35

Internal Assessment: 15

Course Objectives

CO	Description
CO-1	To help students explore ethical and cultural dimensions of their lives.
CO-2	To provide a forum for students to pause, revisit their assumptions and beliefs, and become mindful of their thoughts, emotions and actions.
CO-3	To cultivate ethical values and participate in the creation of a society based on acceptance, compassion, and justice.

Course Outcomes

On completing **Indian Values and Interpersonal Dialogue** the students shall be able to realize following program outcomes:-

CO	Description
CO-1	Students will develop an overview of indigenous philosophies
CO-2	Understanding the richness of Indian heritage leading to greater sensitivity
CO-3	Appreciate the traditions of diversity, discussions, debates and knowledge transmission

Unit 1:

Ethical Communication

(a) Dialogue Engagement

(b) Research Habit

(c) Honest and fair

(d) Practice Civility

Unit 2:

Excerpt from Mahabharata (Dice)

Unit 3:

Diaries/ Travelogues

Amrit Lal Vegad: *Narmada: River of Beauty*

Che Guevera: *Motorcycle Diaries*

Instructions to the Paper-Setter and Students:

All questions are compulsory to attempt.

Question no. 1 will be of short notes. Write short notes on any 4 out of 6 (8 marks)

Unit 1

Question no. 2 will be an essay type question (9 marks)

Unit 2

Question no. 3 will be an essay type question (9 marks)

Unit 3

Question no. 4 will be an essay type question (9 marks)

VAC-1

Urdu Adab ka taaruf Max Marks:35

Objective:

اس پرچے کا مقصد یہ ہے کہ:

۱۔اردو ادب کی تاریخ سے واقف ہو جائے۔

۲۔مختلف زبانوں میں اردو کے مقام کو سمجھ سکے۔

۳۔دبستان دہلی اور دبستان لکھنو کی خدمات سے واقف ہو جائے

Course Outcome:

اس کورس کی مکمل تدریس کے بعد طلباء اس قابل ہو جائیں گے کہ:

اس کورس کی تکمیل کے بعد طلبا اس بات سے واقف ہوں گے کہ:

۱۔اردو ادب کے آغاز و ارتقاء کی تاریخ کیا ہے۔

۲۔مختلف زبانوں کے درمیان اردو نے اپنا کیا مقام قائم کیا ہے۔

۳۔اردو کی ترقی میں دبستان دہلی اور دبستان لکھنو نے کیا خدمات انجام دی ہیں۔

unit-1

اردو کی ابتدائی تاریخ

unit-2

مختلف زبانوں کے درمیان اردو کا مقام

unit-3

دبستان دہلی

unit-4

دبستان لکھنو

کتب برائے مطالعہ

۱۔اردو ادب کی تاریخ، ڈاکٹر ضیاء الرحمان صدیقی

۲۔اردوادب کی تاریخ،سید محمد عصیم

۳۔اردوادب کی تاریخ،عظیم الحق جنیدی

Instructions to the Paper-Setter and Students:

All questions are compulsory to attempt.

Unit-1 There will be two questions of which one is to be opted of 7 marks.

Unit-2 There will be two questions of which one is to be opted 8 marks.

Unit-3 There will be two questions of which one is to be opted 10 marks.

Unit-4 There will be two questions of which one is to be opted 10 marks.

Semester I

VAC-1: Arts and Aesthetics in India

241/PPAG/VA101	Arts and Aesthetics in India
Semester-I	Maximum Marks: 50
Credits per week: 2	Theory Examination: 35
Time: 2 hours	Internal Assessment: 15

Course Outcome:

Remembering: Recall significant examples and characteristics of Indian architectural and painting styles.

Understanding: Explain the historical and cultural contexts of various Indian architectural structures and paintings.

Analyzing: Differentiate and analyze various forms of Indian classical and folk dances.

Evaluating: Assess the traditional techniques of Indian textile production and their relevance in contemporary fashion.

Note for External Examiner:

1. **Five Questions will be set in all and students will be required to attempt 3 questions.**
2. **Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).**
3. **For the remaining four questions, students will attempt 1 out of 2 questions from each of the two units (10 marks each).**

UNIT- I

a) Architecture

b) Painting

UNIT- II

a) Dance

b) Textile

Suggested readings

1. Arnason, H. H. A History of Modern Art: Painting, Sculpture, Architecture, Photography.
2. London: Thames and Hudson 1998.
3. Asher, Catherine B. Architecture of Mughal India. Cambridge University Press, 1992. Huntington, Susan L. and Huntington John C. The Art of Ancient India: Buddhist, Hindu, Jain.

4. New Delhi: Motilal Banarsidass, 2014.

5. Mitter, Partha. Indian Art. Oxford: Oxford University Press, 2001.

6. Chandra, Satish. History of Medieval India 800-1700, New Delhi: Orient Longman, 2007. Deva, Krishna. Temples of North India, New Delhi: National Book Trust, 1969.

7. Singh, Upinder. A History of Ancient and Early Medieval India: From the Stone Age to the 12th Century, Delhi: Pearson Longman, 2009.

8. Srinivasan, K.R., Temples of South India, New Delhi: National Book Trust, 1972.

9. Chakravorty Pallabi and Gupta, Nilanjana (ed). Dance Matters: Performing India on Local and Global Stages, Delhi: Routledge, 2010.

10. Ashok Ranade, Hindustani Music (National Book Trust, 2000)

11. Foster, Hal, Rosalind E. Krauss, Yve-Alain Bois, B. H. D. Buchloh, and David Joselit. Art since 1900: modernism, antimodernism, postmodernism, London and New York: Thames and Hudson, 2004.

12. Graphic Art in India Since 1850, New Delhi: Lalit Kala Akademi, 1985.

13. Jain, Kajri. Gods in the Bazaar: The Economies of Indian Calendar Art. Duke University Press, 2007.

14. Metcalf, Thomas. An Imperial Vision: Indian Architecture and Britain's Raj. University of California Press 1992.

15. Mirzoeff, Nicholas. The Visual Culture Reader. London: Routledge, 2002.

16. Mitter, Partha, Art and Nationalism in Colonial India, 1850–1922, Cambridge University Press, Cambridge, 1994

17. Mitter, Partha, The Triumph of Modernism: India's Artists and the Avant-Garde, 1922–1947, New Delhi: Oxford University Press, 2007.

18. Panikkar, Shivaji, ed., Twentieth-Century Indian Sculpture: The Last Two Decades, Marg, Mumbai, 2000.

MA(JMC)
SEMESTER -1

Name of Subject: **Indian Dialogue Tradition**		Maximum Theory Marks: 50 (15+ 35)
Subject Code: VAC-01	Course ID: 241/JMC/VA-101	

Instructions for External Examiner: This question paper shall be divided in two sections. Examiner is requested to set section A as compulsory question containing 7 marks and from the entire syllabus (can be either objective or subjective). Section B will be in choice from two of the questions from each unit. The students will be required to attempt one question from each unit. All questions from each unit will carry equal marks.

Objective: Foster a deep understanding of dialogue within the context of Indian culture and communication. Explore the evolution of dialogic communication from ancient to modern times, delving into Bharat Muni's Natyashastra and the profound concept of dialogue in Indian texts, fostering an appreciation for cultural nuances and historical perspectives.

Course Outcomes:

1. Students will gain insights into Indian culture's integral connection with communication.
2. They will analyze and interpret dialogues from classical texts, including those between Acharya Shankar and Mandan Mishra, Nachiketa and Yam, Yagyavalkya and Maitreyi, Yagyavalkya and Gargi, and Ashtavakra and Acharya Bandi, cultivating a rich understanding of dialogic communication throughout history.

COURSE CONTENTS:

Unit 1: Understanding of Dialogue	
1.1 Concept of Dialogue 1.2 Type of Dialogue 1.3 Introduction to Dialogic communication from Ancient to Modern era 1.4 Relevance of Dialogue in Modern Era	
Unit 2: Dialogues in Indian Text	
2.1 Acharya Shankar vs Mandan Mishra 2.2 Nachiketa vs Yama 2.3 Yagyavalkya vs Maitreyi and Gargi 2.4 Ashtavakra vs Acharya Bandi	

Suggested Readings:

1. The Natyashastra" by Bharata Muni
2. "Dialogues from the Upanishads" by Swami Sivananda
3. "Vedanta: Voice of Freedom" by Swami Vivekananda
4. Dialogue in Indian Tradition John B. Chethimattam

M.SC. ENVIRONMENTAL SCIENCE – SEMESTER- I
SUBJECT NAME: ENVIRONMENTAL SCIENCES: THEORY INTO PRACTICE
Course code: VAC-01
Course ID: 241/EVS/VA101

NO. OF CREDITS: 3

L	T	P			
2	0	0	**TE**	:	50
			Total	:	50

Note: 1. Nine questions will be set in all. All questions will carry equal marks.
2. Question no. 1 which will be short answer type, covering the entire syllabus will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each unit I to IV. The candidates will be required to attempt question no.1and four more questions.

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

CO1. Develop foundation on principles of Environmental Science and concept of structure and function of different compartments of the Environment.
CO2. Gain scientific perspective of the issues confronting our present-day environment
CO3. Enable to analyze the national and global environmental issues relating to atmosphere, water, soil and land use, biodiversity, and natural resources (global warming, climate change, mineral extraction and energy resources, environmental impact assessment and environmental audit).

Unit 1

Introduction to Environmental studies: Definition, scope and importance, Need for public awareness, Institutions in Environment, People in Environment. Natural resources: Renewable and Non-renewable resources. Natural resources and associated problems, Role of an individual in the conservation of natural resources, Concept of sustainability and sustainable development.

Unit II

Biodiversity and its conservation: Introduction- definition, Types of diversity: genetic, species and ecosystem biodiversity. Value of biodiversity: Consumptive use, productive use, social, ethical and aesthetic values. Biodiversity at global, national and local levels. India as a mega diversity nation, Hot spots of biodiversity. Threats to biodiversity: habitat loss, poaching of wildlife, man- wildlife conflicts. Endangered and endemic species of India. Conservation of biodiversity: In- situ and Ex-situ conservation of biodiversity.

UNIT III

Ecosystems: Concept of ecosystem, Structure and function of ecosystem, Producers, consumers and decomposers. Energy flow in an ecosystem: food chain, food web and ecological succession Case studies of the following ecosystems: a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

UNIT IV

Environmental Pollution: Air pollution: definition, causes, effects and Control measures. Water

pollution: definition, causes, effects and control measures. Soil pollution: Causes of soil degradation, effects and control measures. Noise pollution: Causes, effects and control measures. Nuclear hazards. Global warming: Depletion of ozone layer, green house effect. Solid waste management: Causes, effects and control measures of urban and industrial wastes. Disaster management: Floods, Earthquakes, Cyclones, Landslides.

UNIT V

Social issues and the Environment: Environmental movements: Chipko, Appiko, Silent valley, Bishnois of Rajasthan. Rain water harvesting, watershed management, Human right, Rights of animals. Reduce, Reuse and Recycle. Environment protection Act, Wildlife protection Act, Forest conservation Act, Public awareness, using an Environmental Calendar of Activities.

UNIT VI

Human Population and the Environment: Population explosion: Family welfare programme, methods of sterilization, urbanization, environment and human health, infectious diseases, water-related diseases, risks due to chemicals in food, cancer. HIV/AIDS, Woman and child welfare.

References:

1. Agarwal, K.C. (2001) Environmental Biology, Nidi Publ. Ltd. Bikaner.
2. Bharucha Erach (2003), The Biodiversity of India of India, Mapin Publishing Pvt. Ltd., Ahmedabad- 380013, India, Email: mapin@ivenet,net (R)
3. Gadgil, Madhav (2001) Ecological Journeys, The Science and Politics of conservation in India. Permanent Black.
4. Cunningham, W.P.Cooper, T.H. Gorhani, E & Hepworth, M.T.(2001). Environmental Encyclopedia, Jaico Publ. House, Mumbai, 1196p
5. Dcc A.K., Environmental Chemistry, Wiley Eastern Ltd.
6. Down to Earth, Centre for Science and Environemnt (R)
7. Hawkins R.E, REncyclopedia of Indian Natural Histry, Bombay Natural History Society, Bombay(R)
8. Environmental Geography- SavindraSingh, New Delhi.
9. Environmental Geography- Saxena H.M., Rawar Publications, Jaipur
10. Environmental Geography-Sinha S.P., New Delhi Gleeson,B. and Low, N.(eds) 1999. Global Ethics and Environment, London, Rputledge.
11. World Commission on environment and development. 1987. Our Common Future, Oxford University Press.
12. Fundamnetals of Ecology. Philadelphia: Saunders.

VAC-1	Understanding Popular Culture

Credit:2(Hrs/Week : 2) **Maximum Marks: 50**
241/HIS/VA107 **Theory Examination: 35**
Internal Assessment: 15
Time: 3 Hour

Course Outcomes: The paper examines some popular cultures expressed in different mediums like visual, oral and cultural. In the process of their evolution, these cultures eclectically draw from traditions, articulate anxieties, and even give rise to new traditions. The paper endeavours to equip students with understanding such phenomena historically, with special reference to India. It is imperative that the students use electronic devices to view, record, and document the subject matter.

Unit 1: Understanding Popular Culture: Some Issues
Defining popular culture and understanding it historically
Unit 2: Some Aspects of Popular Culture
Folk art, calendar art, Fairs, Festivals and Rituals, Performance: Theatre; music; folk tales/songs/swang and Nautanki: Identifying themes.
Unit 3 : The Audio-Visual: Cinema and television:
Indian cinema: Mapping the influence of the national struggle for independence (1930s and 40s); Idealized nationalism (1950s), disillusionment and the anti-establishment mood (1970s and 80s); documentary films Expressions of popular culture in television.
Unit 4: The Global Scenario
Popular culture in a globalized world: The impact of the Internet and audio-visual media

Essential Readings:
- Dissanayake, W. and K. M. Gokul Singh, Indian Popular Cinema, Trentham Book, London
- John Storey, Cultural Theory and Popular Culture, London, 2001
- Oberoi, Patricia, Freedom and Destiny: Gender, Family and Popular Culture in India, Delhi, 2009
- Christopher Princy, Camera Indica: The Social Life of Indian Photographs, Chicago, 1998

Suggested Readings:
- Pankaj Rag, Dhuno ke Yatri, Rajkamal, New Delhi, 2006 (Hindi)
- Ramanujan, A.K. Folktales from India A Selection of Oral Tales from Twenty-two Languages.
- Ramaswamy, V. 'Women andthe 'Domestic' in Tamil Folk Songs' in KumkumSangari and Uma Chakravarti, eds., From Myths to Markets: Essays on Gender, Shimla, 1999 Singh, Lata (ed.), Theatre in Colonial India: Playhouse of Power, New Delhi, 2009

Semester-I

VAC-1 Sociology of Sanitation

Credit-2 **Maximum Marks –50**

241/SOC/SE301 **Theory – 35**

Internal Assessment – 15

Time – 2 hours

The students will be required to attempt three questions in all. Question No. I will be compulsory comprising of 8 short answer type questions of 3 marks each and will cover the entire syllabus. The answer should be in 100-200 words.The students are required to attempt five short answer type questions out of 8,i.e., 5X 3 = 15 marks. In addition to it, Question Nos. II to V will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 10 marks each i.e. 2 X 10 = 20 marks thus making it the total weight age to 35 marks .Two questions to be attempted. One from each unit.

Course Outcomes:

- Students will learn about sociology of sanitation
- Students will be able to understand various programme of sanitation

Unit I

Sociology of Sanitation: Concepts and Genesis, importance of Sociology of Sanitation, Historical Development of Sanitation,

Unit II

Sanitation in India: Policies and Programmes of Sanitation, Globalization and Sanitation, issues and Challenges in Sanitation.

Readings

Akram, Mohmmad (2015) Sociology of Sanitation, Kalpaz Publications, New Delhi,

Bagela, S. (2015) Swachhata Ka Samajshasta, Kalpaz Publications, New Delhi

Jha, Hetukar (2016): Sanitation in India: A Historico-Sociological Survey, Kalpaz Publications, New Delhi

Nagla, B.K. (2015): Sociology of Sanitation, Kalpaz Publications, New Delhi,

Pais, Richard (2015) Sociology of sanitation, Kalpaz Publications, New Delhi

Pathak, Bindeshwar (2015) Sociology of Sanitation, Kalpaz Publications, New Delhi

Saxena, Ashis (2015): Sociology of Sanitation: Themes and Perspectives, Kalpaz Publications, New Delhi

Visaria, Leela (2015) Sanitation in India with focus on Toilets and Disposal of Human Excreta, Gyan Publishing House, New Delhi

Madan, G.R. (1973), Social Problems, Allied Publications, Bombay.

Monterio, J.P. (1966), Corruption : Control of mal-administration, Bombay : Mankatalss.

Punit, A.E. (1982), Profiles of poverty in India, Delhi, B.R. Publishing Corporation.

Randhawa, M.S. (1991), The Rural and Urban Ages, New Delhi, National Book Organization House.

Sethna, M.J. (1966), Socio-legal Aspects of Anti-social Behaviour, Bombay, N.M. Tripathi Pvt. Ltd.

Singh, Tarlok (1969), Poverty and Social Change, Bombay, Orient Longman.

Srinivas, M.N. (1972), Social Change in Modern India, New Delhi, Orient Longman

Gurugram University Gurugram, Haryana (India)

PG Program: (Semester-I) **Geography** Subject VAC-1 Paper Syllabus
(as per NEP 2020 w.e.f. session 2024-25)

WATER CONSERVATION TECHNIQUES: GEOGRAPHICAL PERSPECTIVE

Paper Code: **VAC-01 (Theory and Practical Paper)**
Course Id: 24/GEO/VA101

Credit: 02 (1+0+2) L+T+P Hrs/Week	**Total Marks**	**50**
Time: 3 Hours Theory	End Semester Exam: Internal Assessment: Attendance	20 Marks 5 Marks
Note: Theory Exam: as the instructions mentioned under **Practical Exam:** as the instructions mentioned under Practical Exam Time: 3 Hours	Practical Exam: Internal Assessment: Attendance	20 Marks 5 Marks

Course Outcomes (COs):

CO-01: Create a better understanding on water resource fundamentals learning.

CO-02: Recognize the problems and mitigation strategies of water resource conservation.

CO-03: To become acquainted with traditional and modern methods and techniques of water Conservation with a geographical perspective.

CO-04: The Students will be able to understand and analyze the issues and concepts of different Methods and Techniques used in any area with a practical field survey.

Theory

UNIT-I

Nature, scope and significance of Geography of water resources**;** Global hydrological cycle; controlling factors. Infiltration and evapo-transpiration. Run off estimation; Principles of water harvesting and watershed management, Subsurface water, Groundwater, aquifers, Factors controlling groundwater recharge**.**

UNIT-II

Water Crises; Problems associated with over-exploitation of Ground water, Problems related to water use : Salinity Alkalinity and Water logging; Water Conservation strategies; Forestation; Flood management; Interlinking of rivers, Crop Selection and water conservation; Role of Remote Sensing and GIS in water conservation; National water policy.

UNIT-III

Methods and techniques of water conservation: Traditional (Pond, Lake, Nada/Nadi, Bawari, Taanka/Kundi, Jhalra, Khadin, Toba, Kui, Ahar Pynes, Johad, Kund, Baoli, Bhandara Phad etc.) and Modern (Check Dams, Watershed management, drip irrigation, Rainwater harvesting, Canal, Water reuse and water treatment etc.); Degradation of traditional water conservation techniques.

Practical

UNIT-IV

Field work based report on the status of Water conservation techniques of any area.

Note: Theory Exam:

1. The Question no. 1 of the question paper is compulsory. It will contain five short answer type of questions having one mark each (Total 5 marks) covering entire Theory units (Unit-1, 2 & 3).
2. The question paper will comprise two questions from each Unit (Unit-1, 2 & 3) total six question in all. Candidates are required to attempt one question from each unit having five marks each.

Note: Practical Exam:

1. The question paper unit four will comprise practical part. Candidates (s) are required to prepare a comprehensive report based on Field work. Candidates will be required to prepare report precisely on the specified Analysis of field survey.
2. This Field work report will be of 15 marks.
3. Viva Voce will be of Maximum 5 Marks

Suggested Readings:

- Andrew A Dzurik,(2002): 'Water Resources Planning,' Rowman & Littlefield Publishers, Inc., Savage, Maryland.
- Brooks, K.N., (2012) Falliott, P.F. and Magner. J.A.: 'Hydrology and the Management of Watershed,' Wiley Blackwell, Oxford.
- Cech, T.V. (2009) : 'Principles of Water Resources : History, Development, Management and Policy (3rd Ed.), John Wiley and Sons, Hoboken, New Jersey.
- Gulhati, N.D. (1972) : 'Development of Interstate Rivers : Law and Practice in India,' Allied Publishers, Bombay.
- Gurjar, R.K. and Jat, B.C. (2013): Water Resource Geography (in Hindi), Rawat Publications, Jaipur.
- Husain Majid (1994) : 'Resource Geography,' Anmol Publication Pvt. Ltd., New Delhi.
- Krutilla, John V (1958) and Eckstein, O : 'Multiple Purpose River Development : Studies in Applied
- Mattern, J.R. (1984) : 'Water Resources Distribution, Use and Management,' John Wiley, Maryland.
- Mishra, S.P. (2007): Jal Sansadhan : Prabhandhan evm Sanrakshan (in Hindi), Avishkar Publishers, Jaipur.
- Murthy J.V.S. (1994) : 'Watershed Management in India,' Wiley Eastern Ltd., New Delhi.
- Neil S. Grigg (1996) : 'Water Resources Management,' McGraw Hill Book Co., New York.
- Newson M (1992) : 'Land, Water and Development : River Basin System and Their Sustainable Management, Routledge, London.
- Pinder G.F. (2006) and Celia M.A. : 'Subsurface Hydrology,' Wiley, Hoboken, Jew Jersey.
- Rao. K.L. (1979) : 'India's water Wealth,' Orient Longman, New Delhi.
- Singh R.A. and Singh S.R. (1979): 'Water Management : Principles and Practices,' Tara Publication, Varanasi.
- Todd, D.K., Larry, W.M. (2004): Groundwater Hydrology, John Wiley & Sons.

VAC-01 हिंदी साहित्य और भारतीय ज्ञान परंपरा

पूर्णांक- 35+15=50

Course Id- 241/HIN/VA101

पाठ्यक्रम का उद्देश्य:

* भारतीय ज्ञान परंपरा का परिचय देना।

* भारत की गौरवशाली परंपरा का ज्ञान प्रदान करना।

पाठ्यक्रम अध्ययन के परिणाम :

* विद्यार्थी भारत की गौरवशाली परंपरा से परिचित होंगे।

* विद्यार्थी भारत की प्राचीन और आधुनिक शिक्षा पद्धति का विश्लेषण कर सकेंगे।

* विद्यार्थी भारतीय ज्ञान परंपरा और हिंदी साहित्य की समझ के आधार पर जीवन की समस्सयाओं से मुक्ति का समाधान प्राप्त कर सकेंगे।

पाठ्यक्रम:

इकाई 1 : भारतीय ज्ञान परंपरा की अवधारणा

* भारतीय ज्ञान परंपरा : अवधारणा और आयाम

* भारतीय ज्ञान परंपरा का संक्षिप्त इतिहास

इकाई 2 : * वेद और उपनिषदों का संक्षिप्त परिचय

* हिंदी साहित्य में भारतीय ज्ञान परंपरा की भूमिका व इतिहास

* हिंदी साहित्य का पूर्व मध्यकाल

इकाई 3 : * प्राचीन शिक्षा पद्धति और विद्यापीठ

* हिंदी साहित्य में विभिन्न भारतीय संप्रदाय व मत

* नव्य दर्शन और आधुनिक भारत

* भारतीय ज्ञान परंपरा की प्रासंगिकता

निर्देश-1. पाठ्यक्रम में निर्धारित प्रत्येक खंड में कम से कम एक दीर्घ प्रश्न अवश्य पूछा जाएगा। पूछे गए प्रश्नों की संख्या चार होगी, जिसमें से परीक्षार्थी को कुल दो प्रश्न करने होंगे। प्रत्येक प्रश्न के लिए 8 अंग निर्धारित है। पूरा प्रश्न कुल 16 अंकों का होगा।

2. पूरे पाठ्यक्रम में से कुल छः लघुत्तरी प्रश्न पूछें जाएंगे, जिनमे से परीक्षार्थी को 150 शब्दों में किन्हीं चार प्रश्नों का उत्तर देना होगा। प्रत्येक प्रश्न तीन अंक का होगा। पूरा प्रश्न 12 अंकों का होगा।

3. पूरे पाठ्यक्रम में से 7 वस्तुनिष्ठ अनिवार्य प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न एक-एक अंक का होगा।

पुस्तकें-* भारतीय ज्ञान परंपरा और विचारक : शुक्ल, रजनीश कुमार, प्रभात प्रकाशन, नई दिल्ली

* भारतबोध का नया समय : द्विवेदी, संजय, यश प्रकाशन, नई दिल्ली

* संतों के संवाद: उदय प्रताप सिंह, राष्ट्रीय पुस्तक न्यास, भारत नई दिल्ली

* भक्ति का संदर्भ : देवी शंकर अवस्थ,ी वाणी प्रकाशन, नई दिल्ली।

* सात भारतीय संत- जीवन दर्शन और संदेश, डॉ. बलदेव वंशी, राष्ट्रीय पुस्तक न्यास, भारत नई दिल्ली

* रामचरितमानस : तुलसीदास, गीताप्रेस गौरखपुर

* निर्गुण संतों के स्वप्न, डेविड एन. लॉरेंजन, अनुवाद धीरेन्द्र बहादुर सिंह, राजकमल प्रकाशन, नई दिल्ली

ZOOLOGY: SEMESTER-I

CourseType	Course Code	Name of theCourse	Credit	Contact Hours/Week	Internal Assessment marks	End Term Marks	Max. Marks	Exam Duration
VAC-01 **2 credit**	**241/ZOO/VA101**	**Animal Diversity & Conservation**	**2**	**2**	**15**	**35**	**50**	**3 hrs.**

Course Learning Outcomes (CLO)

1. Biological diversity provides immediate benefits to society such as recreation and tourism
2. It will generate initiative among students for conservation of our rich natural resources and diversified life forms.
3. It gives jobs opportunities for people by establish training research programmes that have been launched for conservation and sustainable use of bio diversity.
4. Expand the knowledge of researchers to explore diversity of animal, its protection from extinction and their habitat from destruction

Instructions for Paper-Setter

1. Five questions will be set in all. All questions will carry equal marks.
2. Question No. 1, which will be short answer type covering the entire syllabus, will be compulsory. The remaining four questions will be set unitwise selecting two questions from each Unit . The candidate will be required to attempt question No. 1 and two more questions selecting one question from each unit.

UNIT	TOPICS	CONTACT HOURS
I	Wildlife: Definition, significance. Techniques of animal counts (Examples of Tiger count), Wildlife zones of the India, Wildlife Tourism, Biodiversity: Concept, threats to biodiversity, its Conservation (objectives and strategies), biodiversity indices	15
II	Concept and objectives of Protected areas: Important Protected Areas of India (Biosphere reserve, National Park & Wildlife sanctuaries) Red Data Book, IUCN Categories of wildlife species	15

Learning Resources

1. Techniques for wildlife Census in India by W.A. Rogers (A field manual); Wildlife Institute of India, Dehradun.
2. Wildlife Wealth of India by T.C. Majupuria; Tecpress Services, L.P., 487/42-SOL-Wattenslip, Pratunam Bangkok, 10400, Thailand
3. The Book of Indian Animals by S.H. Prater, BNHS-Publication, Bombay.
4. Wildlife in India by V.B. Saharia. Natraj Publishers, Dehradun.
5. E.P. Gee, The Wildlife of India.

Value Added Course

BOTANY: SEMESTER-I								
Course Type	**Course Code**	**Name of the Course**	**Credit**	**Contact Hours/Week**	**Internal Assessment marks**	**End Term Marks**	**Max. Marks**	**Exam Duration**
VAC-01 **2 credit**	**241/BOT/VA101**	**Plants for Human Welfare**	**2**	**2**	**15**	**35**	**50**	**3 hrs.**

Course Learning Outcomes (CLO)

1. Explain the origin of agriculture and centres of origin of various crops
2. Identify the plant sources of foods, modern and traditional medicines, spices, oil, fibres, dyes, gum and timbers.
3. Learn about plant sources of psychoactive compounds, ornamental plants and identification of common food adulterants

Instructions for Paper-Setter

1. Nine questions will be set in all. All questions will carry equal marks.
2. Question No. 1, which will be short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more questions selecting one question from each unit.

UNIT	TOPICS	CONTACT HOURS
I	**Plants and Civilization:** Origin of agriculture **Origin crop plants:** Idea about centre of origin of common crop plants **Minor Cereals, Major cereals Pseudocereals and pulses** **Spices and condiments (**Saffron, Clove, Cardamom, Ginger, Turmeric, Cinnamon, Capsicums, Asafetida, Coriander, Fennel, Fenugreek**)**	8
II	**Medicinal plants:** Importance of medicinal plants – role in human health care 24 **Traditional knowledge and utility of some common medicinal plants**-*Sarpgandha, Isabgol,Vasaka, Neem, Bhiringraj, Amla, Harrad, Bahera, Arjun ,Punarnava , Brahmi, Kasondi, Ghritkumari, Quinine and Eucalyptus* **Psychoactive plants – general account and classification**	8
III	**Nutritive and medicinal value of some fruits and vegetables** (Guava, Sapota, Orange, Mango, Banana, Lemon, Pomegranate, Moringa, Cabbage) **Beverages** (Coffee, Tea, Chocolate, Cola) **Common ornamental plants** **Common food adultrants**	7
IV	**Common timber yielding plants and minor forest products** **General account of Fibers, dyes, tannins, gums and resins** **Insecticides from plants** Pyrethrum and Rotenone	7

Learning Resources

1. Kochar, S.L. 1981. Economic Botany in the Tropics. Macmillan India Ltd., Delhi.
2. Hill, A.F. 1952. Economic Botany (2nd Ed.) McGraw Hill, New York.
3. Cobley, L.S. and Steele, W.M. 1976. An Introduction to the Botany of Tropical Crops (2nd Ed.) Longmans, London.
4. Simmonds, N.W. 1976. Evolution of Crop Plants Longman, London, New York.
5. SambaMurthy, AVS and Subrahmanyam, N.S. 1989. A Text Book of Economic Botany. Wiley Eastern Ltd.,Delhi
6. Schery, R.W. 1972. Plants for Man. Prentice Hall. Englewood Cliffs, N.J. USA
7. Simpson B. B. M. C. Ogorzaly 2001. Economic botany: plants of our world, 3rd ed. McGraw-Hill, New York, New York, USA.

Course code	VAC-01				
Category	Value-added Course				
Course title	Introduction of Interior Design Materials (Basics)				
Course ID	241/DESID/VA101				
Scheme and Credits	L	T	P	Credits	
	2	0	0	2	
Class work	15 Marks				
Exam	35 Marks				
Total	50 Marks				
Duration of Exam	3 Hours				

COURSE OBJECTIVES

The objective of the "Introduction to Interior Design Materials (Basics)" course is to provide students with a fundamental understanding of various materials used in interior design, including their properties, applications, and sustainability considerations, enabling students to select and specify materials appropriate for different design projects, consider the environmental impact of their choices, and communicate effectively with clients, contractors, and suppliers, ultimately creating functional, aesthetically pleasing, and sustainable interior spaces that meet users' needs and enhance their well-being.

UNIT-1

- Introduction to Basics of Construction.
- Brick Masonry & Stone Masonry.
- Arches & Lintels.

UNIT-2

- Doors & Windows.
- Staircase & False Ceiling.
- Partition & Paneling & finishes used in interior design.

UNIT-3

- Introduction to Services.
- Damp Protection & Termite Protection.
- Fire protection, Paints & Polishes.

COURSE OUTCOMES:

CO1	Students will be able to identify and describe the basic properties and applications of various interior design materials, including textiles, finishes, and building materials.
CO2	Students will be able to evaluate the sustainability and environmental impact of different materials, and select materials that meet project requirements and user needs while minimizing environmental harm.
CO3	Students will be able to effectively communicate and specify materials for interior design projects, using industry-standard terminology and formats, and collaborating with clients, contractors, and suppliers to achieve successful project outcomes.

Suggested Text Books:

1. M. Pratap Rao. *"Interior Design: Principles and Practice"*
2. Chris Grimley and Mimi Love. *"The Interior Design Reference & Specification Book"*
3. Joseph Dechiara, Julius Panero, and Martin Zelnik. *"time-saver standards for interior design"*

Suggested Reference Books

1. "Materials for Interior Environments" by Corky Binggeli
2. "Interior Design Materials and Specifications" by David Kent Ballast
3. "The Materials of Interior Design" by Susan M. Winchip
4. "Interior Design Materials: A Guide to Specifications and Applications" by Richard L. Fischer
5. "Sustainable Materials for Interior Design" by Lynne E. Williamson
6. "Interior Design: Materials, Technologies, and Resources" by Margaret A. Majewski
7. "The Interior Designer's Handbook of Professional Practice" by ASID (American Society of Interior Designers)
8. "Interior Design Illustrated" by Francis D.K. Ching and Corky Binggeli

***Additional references/ reading material could be suggested by the subject faculty**

VALUE ADDED COURSES (VAC)

Course Code VAC-01			Course Title Green Chemistry				Course ID 241/CHE/VA/101				
L	T	P	L	T	P	Total Credits	MARKS				
(Hrs)			Credits				TI	TE	PI	PE	Total
2			2			2	15	35	-	-	50
							-	-			

Examination Duration:	**Theory**: 3 Hrs
Course Objectives	1. To understand the principles and practices of green chemistry. 2. To learn about the development of environmentally friendly chemical processes. 3. To gain knowledge on the use of renewable resources and sustainable technologies in chemistry. 4. To explore the impact of green chemistry on industry and the environment.
Course Outcomes:	After the completion of this course, student will be able to: 1. Understanding of the fundamental principles of green chemistry. 2. Ability to design and develop sustainable chemical processes. 3. Knowledge of renewable resources and their applications in green chemistry. 4. Skills to evaluate the environmental impact of chemical processes. 5. Understanding of the industrial applications and future aspects of green chemistry.

COURSE SYLLABUS

Note: 1. Question no. 1 is compulsory, which contains short answer type questions and to be set from the entire syllabus.

2. Eight questions will be set, two from each of the sections A, B, C & D. The candidates are required to attempt four questions in all selecting at least one question from each section. All questions shall carry equal marks.

3. The question paper must be set in consonance with course outcomes.

Unit No.	Contents	Contact Hrs
I	**Introduction to Green Chemistry** Definition and principles of green chemistry, Twelve principles of green chemistry, History and evolution of green chemistry, Benefits of green chemistry, Green chemistry metrics: Atom economy, E-factor, Role of green chemistry in sustainable development	8
II	**Green Synthesis and Catalysis** Green solvents: Supercritical fluids, Ionic liquids, Water, Green reagents and catalysts, Biocatalysis in green chemistry, Microwave and ultrasonic-assisted synthesis, Photocatalysis and electrocatalysis, Case studies of green synthesis in industry	8
III	**GREEN TECHNOLOGY**	7

	Reactions under aqueous medium: Enhancement of selectivity, efficiency and industrial applicability. Solvent free reactions in solid & liquid phase, Ionic liquids; Supercritical fluids, Microwave and Ultrasound assisted reactions; photochemical reactions using sunlight. Atom economy.	
IV	**Future trends of Green Chemistry** Heterogeneous catalysis: Use of zeolites, silica, alumina, clay, polymers, cyclodextrin and supported catalyst; Phase-transfer catalysis; Biocatalysis using enzymes; Biomass conversion to fine chemicals. Flow techniques; combinatorial green chemistry.	7
Suggested Books:	1. New Trends in Green Chemistry, V.K. Ahluwalia and M. Kidwai, Kluwer Academic Publishers. 2. Handbook of Green Chemistry and Technology, James Clark and Duncan Macquarrie, Blackwell Publishing 3. An Introductory Text on Green Chemistry, Indu Tucker Sidhwani and Rakesh K. Sharma, Wiley Publishers	
	Assessment and Evaluation	
Theory	Internal Assessment: 25 Marks	• Class Participation: 05 Marks • Seminar/Presentation/ Assignment: 05 Marks • Mid Term Exam: 15 Marks
	External Assessment: 50 Marks (03 Hours)	• End Term Exam: 50 Marks

Management Lessons Through Ancient Wisdom

241/MBA/VA101

Credits: 2
External Marks: 35 (TE)
Internal Marks: 15 (TI)
Type of Course: Value Added Course

Course Objectives:

The objective of this course is to introduce ideas of holistic personality development to live a balanced life, along with training the students on various life skills. These skills will help the students in making a smooth transition from their college life to the 'real world'.

Course Outcomes:

On the completion of this course the student will be able to:

CO1: Identify and understand some of the commonly felt problems that individuals, organizations and the society faces.

CO2: Apply the usefulness of life skills in resolving identified problems through the application of effective decision making and leadership skills.
CO3: Analyze human behavior vis a vis ethical standards, values and ideals at individual and group level.
CO4: Evaluate how alternative views and paradigms of management could be developed by equipping oneself with life skills.

DETAILED SYLLABUS:

UNIT-I

Life Skills - Playing the Game: Patience, Strategic Planning, Socialization, Mental Prowess, Empathy, Literacy, Hand-Eye Coordination, Observation.

Personality Development: Manage stress, Resolve conflict, improve time management, listen actively, make better decisions, developing emotional intelligence, developing reading habit, Developing and Expressing empathy.

UNIT-II

Key to relationships: Open communication: Listening and feeling heard, Importance of listening and being heard, Working through disagreements, Mutual intimacy, Trust.

Ceiling on desire: curbing excessive talk, curbing excessive desires and expenditure, control on consumption of food, and check on waste of energy.

UNIT-III

Managing Negativity, Stress and Time: Art of overcoming Grudges, Skills to Clear the Clutter, Dropping Negative Thoughts about oneself and Others, Improving Toleration, Avoid Toxic Relationships.

Leadership: Relationship building, Agility and adaptability, Innovation and creativity, Employee motivation, Decision-making, Conflict management, Negotiation, Critical Thinking.

UNIT-IV

The power of One: A Better You, Family Ties, get along better with family members, explore work options, prepare for a career, sharpen skills useful in business, Take the Lead.

Community Service Project: A Visit to a NGO with an aim to serve the community.

SUGGESTED READINGS:

1. Geus, A. (1997), "The Life Span of a Company: Chapter 1 in The Living Company", Nicholas Brealey Publishing, London, pp. 7 – 19.
2. Beer, S. (1994). "May the Whole Earth be Happy: Loka Samastat Sukhino Bhavantu", Interfaces, 24 (4), 83 – 93.
3. Mahadevan, B. (2013). "Spirituality in Management: Sparks from the Anvil", IIMB Management Review, 25 (2)
4. Reconciling the "world outside" with the "world within" The conceptualization of God – Universe – Living Beings.
5. Houston, D.J. and Cartwright K.E. (2007), "Spirituality and Public Service". Public Administration Review, Jan. – Feb., 2007, 88 – 102.
6. Payne, S.G. (2010). "Leadership and spirituality: Business in the USA", The International Journal of Leadership in Public Services, 6 (2), 68 – 72.
7. Poole, E. (2007). "Organizational Spirituality – A literature review", Journal of Business Ethics, 84, pp. 577 – 588.
8. Bhattathiri, M.P. "Bhagavad Gita and Management"
9. Mahadevan, B. (2009). "Shrimad Bhagavad Gita – Ideas for Modern Management", One day Seminar on "Towards a New Paradigm of Business management: Alternative Perspectives from Ancient Indian Wisdom", IIM Bangalore, December 12, 2009.
10. Mahadevan, B., (2013). "Inspirational Leadership: Perspectives from Gītā", Chapter 13 in Sanskrit and Development of World Thought, Kutumba Sastry V. (Ed.), D K Print World, New Delhi, pp 199 - 210.
11. Mehrotra, R. (2010). "Work Builds, Charity Destroys", Chapter 8 in Ennoble, English course book, Second Year Pre-University, The Karnataka Text Book Society, pp. 63 – 70.
12. Michaelson, C. (2009). "Teaching Meaningful Work: Philosophical Discussions on the Ethics of Career Choice", Journal of Business Ethics Education, 6, pp. 43 – 68.

Mapping Matrix of Course : 24MGVAC1
Table 1: CO-PO & CO-PSO Matrix for the Course: Management Lessons Through Ancient Wisdom

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2
CO1	3	2	2	3	2	3	2	2	2	2

Name of Subject: Business Ethics Based on Indian Knowledge System	Maximum Marks:50 (TE+TI+PE+PI=35+15+0+0)
Course ID: 241/COM/VA107	Time Allowed: 1.5 hours
Credits: 4 (L-T-P=2-0-0)	Course Type: Value Added Course

Instructions for Paper Setter: The question paper shall be divided into two sections. Section 'A' shall comprise seven short answer type questions from the syllabus carrying one mark each, which shall be compulsory. The answer to each question should not normally exceed 100 words. Section 'B' shall comprise 8 questions (2 questions from each unit). The students will be required to attempt five questions by selecting one question from each unit. All questions will carry equal marks. All the questions must be mapped with Course Outcomes (COs) and specified in the question paper against each question.

Course Outcomes: After completing the course, students will be able to:

CO1: Understand the foundational concepts of the Indian Knowledge System (IKS) and their relevance to business ethics.

CO2: Analyze ethical dilemmas using insights from Indian philosophical texts.

CO3: Apply ethical principles derived from Indian traditions to modern business practices.

CO4: Develop ethical leadership and management skills integrating insights from the Indian Knowledge System (IKS).

Course Content:

Unit 1: Introduction to Business Ethics: Concept of business ethics: Need, factors, principles, and ethical values for success in business, Ethical problems faced by managers, Arguments against business ethics, Ethics and the Indian value system, Business ethics and law, Ethics in the context of globalization, Sustainability as a goal of business ethics, Environmental perspective of business ethics, Theories of Business Ethics: Normative ethical theories, virtue ethics, discourse ethics, feminist ethics.	10 Lectures
Unit 2: The Indian Perspective on Ethics: Values: Meaning and types, features, Norms, beliefs, and moral standards, Code of ethics: Role, benefits, contents, steps for an effective code of ethics, Four goals of life: Dharma, Artha, Kama, Moksha, Karma Yoga and teachings from the Bhagavad Gita, Vedantic view of life and ethics, Ethical teachings from the Ramayana and Mahabharata, Views of Gandhi, Aurobindo, and Vivekananda on ethics.	10 Lectures
Unit 3: Ethics at the Workplace and Ethical Leadership: Importance of work place ethics; Guidelines for managing ethics at the workplace, Factors influencing workplace ethics, Forms of discrimination; Ethical arguments against discrimination, Types of discrimination practices and prevention of other types of harassment, Ethical issues for leaders	10 Lectures
Unit 4:Ethical Issues: Marketing, HR, Finance, IT, Medical services.	10 Lectures

Suggested Readings:

1. "Business Ethics" by Andrew Crane and Dirk Matten
2. "Introduction to Indian Knowledge Systems" by B. Mahadevan
3. "The Bhagavad Gita" (translated by Eknath Easwaran or other versions)
4. "The Upanishads" (translated by Eknath Easwaran or other versions)

5. "Ethics in the Ramayana" by Satya P. Agarwal
6. “Business Ethics & Human Values” by Hundepar, S.G
7. “Ethics in Management and Indian Ethos” by Ghosh, Biswanath
8. "Business Ethics: An Indian Perspective" by A.C. Fernando
9. "Ethics and Business: An Indian Perspective" by Rituparna Raj

Instructions for Internal Examiner: The internal assessment should be spread evenly throughout the semester and must include at least 3 independent components including a mid-term exam. Below are the suggested components for 15 marks. A teacher has a choice to change these components as per the need except for the mid-term exam. All the questions of mid-term Exams need to be mapped with Course Outcomes (COs) and need to be specified in the question paper against each question.

S. No.	**Course Assessment Components**	**Marks/Weightage (%)**
1	Assessment 1: Class Participation **(CP)** And Individual Assessment	05
2	Assessment 2: Mid-Term Exam (MTE)	10
3	Assessment 3: Case Analysis / Presentation **(CAP)/** Group Project (**GP**) / Role Play / Live Projects/ Simulation / Worksheet Assessment	-
	Internal Assessment **(IA) (1+2+3)**	15 (30%)
	End-Term Examination (**EE**)	35 (70%)
Total Marks (IA+EE)		**50**

Mapping Matrix of Course: 241/COM/VA107
CO-PO & CO-PSO Matrix for the Course: Business Ethics Based on Indian Knowledge System

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2
CO1	3	3	2	2	2	1	1	2	3	2
CO2	2	2	2	3	2	2	1	2	2	3
CO3	3	2	3	3	2	2	2	2	3	3
CO4	2	1	2	3	3	2	3	3	2	3
Average	2.5	2	2.25	2.75	2.25	1.75	1.75	2.25	2.5	2.75

Semester- I

241/AE/VA101	Sustainable Development	L	T	P	C
		2	0	0	2

Maximum Marks:50 **Written exam:35**

Credits:2 **Internal assessment:15**

Note:

1. Five Questions will be set in all and students will be required to attempt 3 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the two units (10 marks each).

Course Objectives

This course has been designed with the objective to inculcate the knowledge of sustainable development with a view to balance the economic, environmental and social needs. This course is designed to train the learners to undertake major initiatives in the efficient management of natural resources with special focus on Sustainable Development Goals.

Course Outcomes

CO1: Gain knowledge about the evolution of the concept of sustainable development.

CO2: Learn the policies and programs for sustainable development

CO3: Knowledge of SDGs and MDGs

Unit I

Introduction **Teaching Hours:12**

Sustainable Development- Definition, Principles of Sustainable Development: History and emergence of the concept of Sustainable Development, Environmental issues and crisis, Sustainable Development programs and policies.

Unit II

SDGs & MDGs **Teaching Hours:12**

Evolution Of Millenium and Sustainable development Goals, Millenium Development Goals, Sustainable Development Goals.

Suggested Readings:

- The Sustainability Revolution: Portrait of a Paradigm Shift by Edwards, Andres R.,New Society Publishers, 2005.
- Sustainable development in India: Stocktaking in the run up to Rio+20: Report prepared by TERI for MoEF,2011.
- Report of the Department for Policy Coordination and Sustainable Development (DPCSD), United Nations Division for Sustainable Development.

241/AE/VA102	Report Writing	L	T	P	C
		2	0	0	2

Max. Marks: 50 **Written Exam:35**

Credits: 2 **Internal Assessment: 15**

Note:

1. Five Questions will be set in all and students will be required to attempt 3 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).
3. For the remaining Four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Course Objective: To equip students with comprehensive skills in report writing and research ethics, including the creation and documentation of research reports, proper citation practices, ethical considerations in research, and effective presentation techniques.

Course Outcomes

CO1: Mastery in writing research reports and proposals.
CO2: Proficiency in formatting and documenting research work.
CO3: Ability to avoid plagiarism and apply proper citation methods.
CO4: Competence in preparing and delivering effective PPT presentations.

Unit-I

Report Writing **Teaching Hours:12**

Research report – Types of reports- Research proposal, research report; Steps in report writing; Format of the research report; Principles of writing; Documentation; use of tables and graphs, citations and references, chapterization – contents of chapter, Classification and tabulation, Graphical representation, Research presentation.

Unit-II

Research Ethics **Teaching Hours:12**

Avoiding plagiarism, Quotations: short, medium, long, Internet Citations, Foot note, end note., Publication: Instructions: spacing, numbering, heading, margin, ibid. etc. How to prepare a PPT presentation

Suggested Readings

- Ary, D., Jacob, L.C & Sorensen, C.(2010). Introduction to research in education, 8th 5th International edition: USA. Wadsworth Cenage Leaning
- Best, J. W. & Kahn J. V. (2005). Research in Education, New Delhi: Prentice Hall.
- Burns, R.B. (1991) Introduction to Research in Education, New Delhi: Prentice Hall.
- Good, C.V. & Douglas, E. S. (1954). Methods in Social Research, New York: Mc Graw Hill.

- Kerlinger, F.N. (1973). Foundation of Behavioral Research, New York: Holt Rinehart and Winston
- Koul, L. (1988). Methodology of Educational Research, New Delhi, Vikas Publications.
- Neuman, W.L. (1997) Social Research Methods: Qualitative and Quantitative Approaches, Boston: Allyn and Bacon.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Age International Publishers.
- Cohen, L. & Lawrence, M. (1980). Research methods in education, London: Groom Helm

BLOCKCHAIN TECHNOLOGY

Semester	1			
Course code	VAC-1			
Category	Value Added Course			
Course title	**Blockchain Technology**			
Course ID	241/CS/VA101			
Scheme and Credits	L	T	P	Credits
	2	0	0	2
Theory Internal	15 Marks			
Theory External	35 Marks			
Total	50 Marks			
Duration of Exam	3 hours			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no.2 to 9 will be of 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE OUTCOMES:

At the end of this course, students will demonstrate the ability to

CO1: Recognizing goals of Blockchain.

CO2: Understanding the basics of Blockchain, notation of Distributed Systems in Blockchain, and analyzing various problems.

CO3: Smart Contracts, transactions in Blockchain and Permissioned Blockchain.

CO4: Analyzing usage of Blockchain in finance.

CO5: Security issues in Blockchain.

UNIT - I

Introduction to Blockchain: Overview of blockchain, need for blockchain, history of centralized services, trusted third party, Distributed consensus in open environments, Distributed Vs Decentralized Network, 51 % attack theory, Public blockchains, Private blockchains, Blockchain Architecture and working, Mining, Limitations of blockchain, Applications of blockchain.

UNIT - II

Models for blockchain: GARAY model, RLA Model, Proof of Work (PoW), HashcashPoW,

PoW Attacks and the monopoly problem, Proof of Stake (PoS), hybrid models (PoW+PoS), Proof of Burn and Proof of Elapsed Time.

UNIT - III

Permissioned Blockchain: Permissioned model and use cases, Design issues for Permissioned blockchains, State machine replication, Consensus models for permissioned blockchain, Distributed consensus in closed environment, Paxos, RAFT Consensus, Byzantine general problem, Byzantine fault tolerant system, Lamport-Shostak-Pease BFT Algorithm, BFT over Asynchronous systems.

UNIT - IV

Blockchain in Financial Service: Digital Currency, Cross border payments, Steller and Ripple protocols, Project Ubin, Know Your Customer (KYC), Privacy Consents, Mortgage over Blockchain, Blockchain enabled Trade, We Trade – Trade Finance Network, Supply Chain Financing, Insurance.

Blockchain Security: Security properties, Security considerations for Blockchain, Intel SGX, Identities and Policies, Membership and Access Control, Blockchain Crypto Service Providers, Privacy in a Blockchain System, Privacy through Fabric Channels, Smart Contract Confidentiality.

Text Books and Reference Books:

1. Blockchain: Blueprint for a New Economy, by Melanie Swan.
2. Blockchain: The blockchain for beginner's guide to blockchain technology and leveraging blockchain programming, by Josh Thompsons
3. Blockchain Basics by Daniel Drescher, Apress.

Semester 3

RESEARCH ETHICS

VAC-2 Research Ethics **(241/MPSY/VA 301)** Maximum Marks: 50
Credits:2 (Hrs./Week: 2) Theory Examination: 35
Internal Assessment: 15 Max.
Time: 2 Hrs.

Note: The students will be required to attempt three questions in all. Question No. I will be compulsory comprising of 8 short answer type questions of 3 marks each and will cover the entire syllabus. The answer should be in 100-200 words. The students are required to attempt five short answer type questions out of 8,i.e., 5X 3 = 15 marks. In addition to it, Question Nos. II to V will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 10 marks each i.e. 2 X 10 = 20 marks thus making it the total weight age to 35 marks. Two questions to be attempted. One from each unit.

Course Outcomes:-

- Students will demonstrate a comprehensive understanding of fundamentals of Research, Plagiarism, Falsification, and Fabrication.
- Students will adhere to ethical guidelines in psychological research, ensuring integrity and responsibility in conducting studies.
- Students will develop critical thinking skills to analyze the nature of moral judgements and the challenges faced due to emerging technologies.

Unit-I

Ethics: definition; importance of research ethics; objectives and ethical issues in research ethics. Ethical principles of research; nature of moral judgements: cognitive and affective; Ethical Challenges in Emerging Technologies.

Unit-II

Scientific conducts: Ethics concerning science and research; Intellectual honesty and Research Integrity.

Scientific misconduct: Falsification, Fabrication and Plagiarism.

Suggested readings:

1. Bird,A. (2006). Philosophy of Sciences. Routledge
2. MacIntyre, Alasdair (1967). A Short History of Ethics. London
3. P.Chandah. (2018). Ethics in Competitive Research: Do not get Scooped; do not get plagiarized.
4. National Academy of Sciences, National Academy of Engineering and Institute of Medicine (2009)., National On being a Scientist: A guide to responsible conduct in Research : third edition, National Academies Press
5. Resnik, D. B. (2011*), What is Ethics in research & why is it important.* National Institute of Environmental Health Sciences, 1-10 Retrieved from http://www.niehs.nih.gov/research/resources/bioethics/whatisindex.efm

Master of Social Work
Semester -

Master of Social Work

Semester - III
Gender and Development

VAC-02
Credits: 2 (Hrs./Week: 2)

Maximum Marks: 50
Theory Examination: 35
Internal Assessment: 15

Note: The students will be required to attempt three questions in all. Question No. I will be compulsory comprising of 8 short answer type questions of 3 marks each and will cover the entire syllabus. The answer should be in 100-200 words.The students are required to attempt five short answer type questions out of 8,i.e., 5X 3 = 15 marks. In addition to it, Question Nos. II to V will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 10 marks each i.e. 2 X 10 = 20 marks thus making it the total weight age to 35 marks. Two questions to be attempted. One from each unit.

Course Outcomes:

- Gain an understanding of key gender and development concepts and theories
- Evaluate the implications of gender inequalities on development outcomes at local, national, and global levels.

Unit-I
Gender: Conceptual Understanding

- Sex, Gender and Patriarchy
- Feminist Theories – Radical, Marxist, Socialist, Eco Feminism
- Women's Social, Economic and Political Status in India

Unit-II
Gender and Development: Concept and Approaches

- Approaches to Gender and Development WID, WAD and GID ● Indicators of Gender and Development

Unit-III

Gender Issues in the Development Practice

- Gender Inequality and Social Development • Gender Barriers to Women's Economic Development
- Gender Barriers to Political Involvement

Unit-IV
Policies and Programme for Gender and Development

- Constitutional Safeguards, legislations, Policies and Programmes for Women
- Institutional Structure: Ministry of Women and Child Development, NCW and Role of Community-Based Organizations

Suggested Readings:

Bhasin, Kamala, 2005, Understanding Gender, Women Unlimited.

Baltiwala, S. 2013, 'Engaging with Empowerment: An Intellectual and Experiential

Journey' New Delhi: Women Unlimited.
Bhauri Amit (2005), Development with Dignity, National Book Trust, India.

John, Mary (2008) Women's Studies in India: A Reader, Pengiun Books India. Agarwal,

Bina.(2015) Gender Challenges- Vol I, II, III (2013), Oxford University Press Sen, A.

(1999). *Development as Freedom*. Oxford University Press.

Connell, R. W. (2012). *Gender in World Perspective* (2nd ed.). Polity Press.
Desai, A., & Thakkar, U. (2001) *Women in Indian Society,* National Book Trust, India
Geetha, V. (2002). *Theorizing Feminism*, Stree. ISBN: 8185604452
Kabeer, N. (1994). *Reversed Realities: Gender Hierarchies in Development Thought*. Verso.
Seth, Meera (2001) *Women and Development,* Sage Publications **Internet**

Sources:

Ministry of Women and Child Development
https://wcd.nic.in/womendevelopment/nationalpolicy-women-empowerment

UN Women https://www.unwomen.org/en/un-women-strategic-plan-2022-2025/policies-andinstitutions

VALUE ADDITION COURSE- VAC-2

ECOLOGY AND LITERATURE

SEMESTER 3

Maximum Marks: 50

Theory: 35

Internal Assessment: 15

Course Objectives

CO	Description
CO-1	To raise awareness among students towards the urgent predicament of Environmental and Ecological crisis and the need for reducing our carbon footprint upon fast depleting, ravaged ecological reserves.
CO-2	To develop a heightened ecological consciousness among students, leading to more responsible ecological behaviour.
CO-3	To view environmental concerns as raised through plays, stories and poems.

Course Outcomes

On completing **Ecology and Literature** the students shall be able to realize following program outcomes:-

CO	Description
CO-1	The course will highlight the urgency of environmental crisis, making students conscious and aware of the role each one of us plays.
CO-2	Students will be trained into environmental sensitivity and responsible Ecological behaviour.

CO-3	Students will be encouraged to respond to incidents of habitat destruction, deforestation, etc., and realise the need for our urgent intervention.

Unit I: Negotiating environmental issues creatively

• William Wordsworth: 'In April Beneath The Scented Thorn'

• Rabindranath Tagore: 'The Waterfall'

• Gieve Patel: 'On Killing a Tree'

Unit II: Eco-critical literary representations

• Mary Oliver: 'Sleeping in the Forest'

• AK Ramanujan: 'A Flowering Tree'

• Mamang Dai: 'Small Towns and the River'

Instructions to the Paper setter and the students:

All questions are compulsory to attempt.

Question no. 1 will be on short notes. Write short notes on any 3 out of 5 (15 marks)

Unit 1

Question no. 2 will be an essay type question (10 marks)

Unit 2

Question no. 3 will be an essay type question (10 marks)

VAC-2

Hindustan ki Adabi aur Tehzibi Rawayat Max Marks:35

ہندوستان کی ادبی اور تہذیبی روایت

Objective:

اس کورس کا مقصد یہ ہے کہ:

۱۔ ہندوستانی تہذیب دنیا کی قدیم ترین تہذیب ہے۔طلباء کو ہندوستانی تہذیب وثقافت سے روشناس کرانا۔

۲۔ادب سے تہذیب کا رشتہ کیا ہے اسے سمجھانا۔

Course Outcome:

اس کورس کی مکمل تدریس کے بعد طلباء اس قابل ہو جائیں گے:

۱۔اردو زبان میں ہندوستانی تہذیب وروایت کے زندہ عناصر کو سمجھنے کا موقع ملے گا۔

۲۔اردو شاعری میں پوشیدہ ہندوستانی تہذیب سے باخبر ہو جائیں گے۔

۳۔اردو شاعری بالخصوص خسرو، میرا، رحیم وغیرہ کے حوالے سے اردو ادب میں ہندوستانی تہذیبی روایت کا مطالع کر کے طلباء کے علم میں اضافہ کیا جائے گا۔

unit-1

تہذیب اور اس سے وابستہ تصورات اور ہندوستانی تہذیب

unit-2

ادب: تصوف اور بھگتی

unit-3

ہندوی، ہندی، دکنی، اردو

unit-4

زبان وادب: خسرو، کبیر، جئسی، میرا، رحیم، شیخ، قلی قطب

کتب برائے مطالعہ

۱۔تصوف اور بکتی، شمیم طارق

۲۔ ہندوستانی تہذیب کا مرد اہن، نظام صدیقی، وقار احمد

۳۔ ہندوستانی تہذیب، ڈاکٹر ابن کنول

۴۔اردو کا ابتدائی زمانہ، شمس الرحمان فاروقی

Instructions to the Paper-Setter and Students:

All questions are compulsory to attempt.

Unit-1 There will be two questions of which one is to be opted of 7 marks.

Unit-2 There will be two questions of which one is to be opted 10 marks.

Unit-3 There will be two questions of which one is to be opted 8 marks.

Unit-4 There will be two questions of which one is to be opted 10 marks.

Semester III
VAC-2: Tribal Knowledge System in India

241/PPAG/VA301	Tribal Knowledge System in India
Semester III	Maximum Marks: 50
Credits per week: 2	Theory Examination: 35
Time: 3 hours	Internal Assessment: 15

Course Outcome:

Remembering: Define and recall key concepts related to tribal knowledge systems and indigenous societies.

Understanding: Explain the unique aspects and differences between tribal and mainstream knowledge systems.

Analyzing: Compare and contrast cultural and social practices of different tribal communities in India.

Evaluating: Assess and evaluate strategies and policies for preserving indigenous and tribal heritage.

Note for External Examiner:

1. **Five Questions will be set in all and students will be required to attempt 3 questions.**
2. **Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).**
3. **For the remaining four questions, students will attempt 1 out of 2 questions from each of the two units (10 marks each).**

UNIT- I

a) Understanding Tribal Knowledge System

b) Indigenous and Tribal societies

UNIT- II

a) Cultural and social practices of the Tribals in India

b) Preserving Indigenous and Tribal Heritage

Suggested Readings:

1. Berkes, F. (1999). *Sacred ecology: Traditional ecological knowledge and resource management*. Taylor & Francis.
2. Maffi, L. (Ed.). (2001). *On biocultural diversity: Linking language, knowledge, and the environment*. Smithsonian Institution Press.

3. Beteille, A. (1995). The idea of indigenous people. In M. A. Pareek (Ed.), *Understanding social reality: Socio-cultural perspectives* (pp. 23-41). Rawat Publications.

4. Das, V. (2001). *Everyday life in modern India*. Oxford University Press.

5. UNESCO. (2009). *Indigenous and local knowledge and sustainability*. UNESCO.

6. Mohapatra, R. K. (2015). *Tribal development and welfare: Policies and perspectives*. Springer.

7. Srivastava, R. (Ed.). (2008). *Tribal development in India: The contemporary debate*. Rawat Publications.

8. Agarwal, S. (2017). *Development, displacement and resettlement: Theoretical perspectives and policy implications*. Routledge.

MA(JMC)
SEMESTER -3

Name of Subject: **Culture and Cinema**		Maximum Theory Marks: 50 (15+ 35)
Subject Code: VAC-02	241/JMC/VA-302	

Instructions for External Examiner: This question paper shall be divided in two sections. Examiner is requested to set section A as compulsory question containing 7 marks and from the entire syllabus (can be either objective or subjective). Section B will be in choice from two of the questions from each unit. The students will be required to attempt one question from each unit. All questions from each unit will carry equal marks.

Objective: To explore the interrelationship between culture and cinema, examining how films reflect and influence societal values, norms, and identities. To analyse key theoretical frameworks in film studies and cultural studies, applying them to cinematic analysis.

Course Outcomes:
Students will be able to:
1. Gain a deep understanding of the relationship between culture and cinema.
2. Critically evaluate representations of culture, identity, and diversity in films.

COURSE CONTENTS:

Unit 1: Cultural Contexts in Cinema	
1.1 Introduction to Culture and Cinema Studies 1.2 Theoretical Approaches in Film and Cultural Studies 1.3 Cultural Representation in Cinema 1.4 Cinema and The Nation	
Unit 2: Analyzing Cinematic Texts	
2.1 Genre Studies: Exploring Film Genres and Their Cultural Significance 2.2 Case Studies of Influential Films in Cultural Discourse 2.3 Global Perspectives: Cross-cultural Analysis of Cinema 2.4 Contemporary Issues in Cinema and Cultural Studies	

Suggested Readings:

1. RURAL CULTURE IN HINDI CINEMA: A Sociological Studyby Shivam Singh
2. Filmen Aur Sanskrti: The Intersection of Cinema and Culture in India (Hindi Edition) by Dheeraj Sharma
3. The Evolution of Song and Dance in Hindi Cinema by Ajay Gehlawat and Rajinder Dudrah

M.Sc. ENVIRONMENTAL SCIENCE – SEMESTER- III
SUBJECT NAME: ENERGY RESOURCES
Course code: VAC-2
Course ID: 241/EVS/VA302
NO. OF CREDITS: 3

L	T	P			
2	0	0	**TE**	:	50
			Total	:	50

Course outcomes:
CO.1 Awareness among students about non-conventional sources of energy technologies and provide adequate inputs on a variety of issues.
CO.2 Knowledge about all renewable energy sources like solar thermal power, power from wind, biomass power and fuel cell and relevant technologies.
CO.3 Ability to plan and perform a short scientific study and present the results in writing and orally.

UNIT I: Solar Energy
Sun as Source of Energy, Availability of Solar Energy, Nature of Solar Energy, Solar Energy & Environment. Various Methods of using solar energy - Photothermal, Photovoltaic, Photosynthesis, Present & Future Scope of Solar energy.

Unit II: Biomass
Origin of Biomass, Resources: Classification and characteristics; Techniques for biomass assessment; Biomass estimation, Thermochemical conversion processes: Direct combustion, incineration, pyrolysis, gasification and liquefaction.

UNIT III: Wind Energy
Wind machine types, classification, parameters, Wind Power estimation techniques, Principles of Aerodynamics of wind turbine blade, various aspects of wind turbine design. Horizontal Axis Wind Turbine (HAWT), Vertical Axis Wind Turbine (VAWT) aerodynamics.

UNIT IV: Fuel Cell
Thermodynamics of fuel cells; free energy change and cell potentials; effects of temperature and pressure on cell potential; energy conversion efficiency; factors affecting conversion efficiency; polarization losses; important types of fuel cells, Principle of working, construction, electrode types; electrolytes for fuel cells; applications.

Reference Books:

1. Biomass Renegerable Energy - D.O.hall and R.P. Overeed (John Wiley and Sons, Newyork, 1987)
2. Biomass for energy in the developing countries - DO.Hall, G.W.barnard and P.A.Moss (Pergamon Press Ltd. 1982)

3. Thermo chemical processing of Biomass, Bridgurater A V.
4. Biomass as Fuel - L.P.White (Academic press 1981)
5. Biomass Gasification Principles and Technology, Energy technology review No. 67, T.B. Read (Noyes Data Corp., 1981)
6. Wind energy Conversion Systems - Freris L.L. (Prentice Hall 1990)
7. Wind Turbine Technology: Fundamental concepts of wind turbine technology Spera D.A. (ASME Press, NY, 1994)
8. Wind Energy Systems - G.L. Johnson (Prentice Hall, 1985)
9. Wind Energy Explained - J.F.Manwell, J.G. McGowan and A.L. Rogers (John Wiley &Sons Ltd.)

SEMESTER - 3

VAC-02 पर्यावरण और हिंदी साहित्य

पूर्णांक-35+15=50 **Course Id- 241/HIN/VA302**

पाठ्यक्रम के उद्देश्य :

1.विद्यार्थियों में पर्यावरण - बोध का प्रसार करना।

2.हिंदी साहित्य में पर्यावरण - चेतना के विषय में बताना।

3.पर्यावरण और जीवन के अन्योन्याश्रित संबंधों को समझना।

पाठ्यक्रम के परिणाम :

1.विद्यार्थी पर्यावरण के विभिन्न आयामों से परिचित होंगे।

2.हिंदी साहित्य में अभिव्यक्त पर्यावरण चेतना को जानेंगे।

3.पर्यावरण और जीव- जगत के अंतर्संबंधों को समझेंगे।

पाठ्यक्रम:

इकाई 1 : पर्यावरण-चिंतन : अवधारणा का विकास

प्रकृति, पर्यावरण एवं पारिस्थितिकी : अवधारणा ,महत्तव और विकास की अवधारणा

हिंदी कविता में प्रकृति- **सतपुड़ा के घने जंगल**- भवानीप्रसाद मिश्र

इकाई -2 : कथा साहित्य में प्रकृति और पर्यावरण

परती परिकथा (निर्धारित अंश) : फनीश्वर नाथ रेणु

बाबा बटेसर नाथ (निर्धारित अंश) : नागार्जुन

कुइयाँ जान (अंश): नासिरा शर्मा

इकाई 3 : कथेतर में प्रकृति-चेतना

हल्दी-दूब और दधि - अच्छत : विद्यानिवास मिश्र

आज भी खरे है तालाब (अंश) : अनुपम मिश्र

निर्देश-1. पाठ्यक्रम में निर्धारित प्रत्येक खंड में कम से कम एक दीर्घ प्रश्न अवश्य पूछा जाएगा। पूछे गए प्रश्नों की संख्या चार होगी, जिसमें से परीक्षार्थी को कुल दो प्रश्न करने होंगे। प्रत्येक प्रश्न के लिए 8 अंक निर्धारित है। पूरा प्रश्न कुल 16 अंकों का होगा।

2. पूरे पाठ्यक्रम में से कुल छः लघुत्तरी प्रश्न पूछें जाएंगे, जिनमे से परीक्षार्थी को 150 शब्दों में किन्हीं चार प्रश्नों का उत्तर देना होगा। प्रत्येक प्रश्न तीन अंक का होगा। पूरा प्रश्न 12 अंकों का होगा।

3. पूरे पाठ्यक्रम में से 7 वस्तुनिष्ठ अनिवार्य प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न एक-एक अंक का होगा।

सहायक ग्रंथ :

1. राजस्थान की रजत बूँदे- अनुपम मिश्र, गांधी शांति प्रतिष्ठान, नई दिल्ली
2. विकास और पर्यावरण- सुभाष शर्मा, प्रकाशन विभाग, सूचना प्रसारण मंत्रालय, नई दिल्ली।
3. जल, थल, मल- सोपान जोशी, रामकमल प्रकाशन, नई दिल्ली।
4. लोग क्यों करते हैं प्रतिरोध- सुभाष शर्मा, प्रकाशन, विभाग, नई दिल्ली।
5. साफ माथे का समाज- अनुपम मिश्र, पेंग्विन इंडिया, नई दिल्ली।
6. विचार का कपड़ा- अनुपम मिश्र, राजकमल प्रकाशन, नई दिल्ली।
7. तालाब झारखंड7 हेमंत, नई किताब प्रकाशन, नई दिल्ली।
8. अहिंसक अर्थव्यवस्था- नंदकिशोर आचार्य, प्राकृत भारती प्रकाशन, जयपुर।
9. गांधी हैं विकल्प- नंदकिशोर आचार्य, प्राकृत भारती अकादमी, जयपुर।

ZOOLOGY: SEMESTER-III

CourseType	Course Code	Name of theCourse	Credit	Contact Hours/Week	Internal Assessment marks	End Term Marks	Max. Marks	Exam Duration
VAC-02 **2 credit**	**241/ZOO/VA302**	**Human Genetic Syndromes**	**2**	**2**	**15**	**35**	**50**	**3 hrs.**

Course Learning Outcomes (CLO)

1. Students will gain knowledge about genetic syndromes
2. It will generate initiative among students for their clinical management
3. Students will know about genetic counseling
4. Expand the knowledge of researchers to explore ethical consideration in genetic testing

Instructions for Paper-Setter

1. Five questions will be set in all. All questions will carry equal marks.
2. Question No. 1, which will be short answer type covering the entire syllabus, will be compulsory. The remaining four questions will be set unitwise selecting two questions from each Unit . The candidate will be required to attempt question No. 1 and two more questions selecting one question from each unit.

UNIT	TOPICS	CONTACT HOURS
I	**Overview of Genetic Syndromes**: Definition and classification of genetic disorders. **Chromosomal and Single-Gene Disorders**: Examples like Down syndrome, Turner syndrome, Klinefelter syndrome, Patau Syndrome, cystic fibrosis, and their inheritance patterns. **Multifactorial and Mitochondrial Disorders**: Impact of genetic and environmental factors, and examples like spina bifida.	15
II	**Diagnostic Techniques**: Methods such as karyotyping and genetic testing. **Management and Ethical Issues**: Clinical management, genetic counseling, and ethical considerations in genetic testing and family planning.	15

Learning Resources

1. **"Genetics in Medicine"** by James S. Thompson and Margaret W. Thompson
2. **"Medical Genetics"** by William S. McDermott and Nancy A. N. Jones
3. **"Genetic Syndromes and Genetic Counseling"** by Margaret R. L. K. D. Shrimpton and Dorothy R. R. Little
4. **"The Genetics of Human Disease"** edited by Edward W. C. B. Robert and Robert D. L. R. G. McGowan

Course code	VAC-1			
Category	Value-added Course			
Course title	Environmental studies			
Course ID	241/MCA/VA101			
Scheme and Credits	L	T	P	Credits
	2	0	0	2
Theory Internal	15 Marks			
Theory External	35 Marks			
Total	50 Marks			
Duration of Exam	03 Hours			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no. 2 to 9 will be 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE OBJECTIVES:

1. To impart the knowledge and awareness for the environmental protection for real-time contribution during an execution of engineering practices in the society.

COURSE OUTCOMES:

1. To understand the basic concepts of environmental studies and natural resources.
2. To learn about the various eco-systems of nature.
3. To gain knowledge about different types of environmental pollutions and their control measures.
4. To acquire the knowledge about the various social aspects related to the environment.

UNIT-I

Environmental studies and Natural Resources: Definition, scope and importance of environmental studies.

Natural Resources: Renewable and non-renewable resources, and associated problems

(a) Forest resources: Use and over-exploitation, deforestation, Timber extraction, mining, dams and their effects on forests and tribal people.

(b)Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dam's benefits and problems.

(c) Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources.

(d)Food Resources: World food problems, changes caused by agriculture and over grazing, effects of modern agriculture, fertilizers-pesticides problems, water logging, salinity.

(e) Energy Resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.

UNIT-II

Eco Systems: Concept of an eco-system, Structure and function of an eco-system, Producers, consumers, decomposers, Energy flow in the ecosystems, Ecological succession, Food chains, food dtatas and ecological pyramids. Introduction, types, characteristic features, structure and function of the following ecosystems:

(a) Forest ecosystem

(b) Grass land ecosystem

(c) Desert ecosystem

(d) Aquatic eco systems (ponds, streams, lakes, rivers, oceans, estuaries)

UNIT-III

Environmental Pollution: Definition, Causes, effects and control measures of;

(a) Air pollution

(b) Soil pollution

(c) Marine pollution

(d) Noise pollution

(e) Nuclear hazards

Disaster management: Floods, earth quake, cyclone and landslides.

UNIT-IV

Social issues and the Environment: From unsustainable to sustainable development, Urban problems related to energy, Water conservation, rain water harvesting, watershed management.

Environmental ethics: issues and possible solutions, Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Environment protection Act, Air (prevention and control of pollution) Act, Water (prevention and control of pollution) Act, Wildlife protection Act, Forest conservation Act, Issues involved in enforcement of environmental legislations.

Recommended Books:

1. Textbook of Environmental studies, Erach Bharucha, UGC.

2. Fundamental concepts in Environmental Studies, D. D. Mishra, S Chand & Co Ltd.

Course code	VAC-02				
Category	Value-added Course				
Course title	Professional Practice				
Course ID	241/DESID/VA301				
Scheme and Credits	L	T	P	Credits	
	2	0	0	2	
Class work	15 Marks				
Exam	35 Marks				
Total	50 Marks				
Duration of Exam	3 Hours				

COURSE OBJECTIVES

The course objective for Professional Practice in Interior Design is to equip students with the knowledge, skills, and ethical principles necessary to successfully navigate the interior design profession, including understanding industry standards, building codes, and legal requirements, developing a professional portfolio, and learning effective communication and business skills, in order to prepare students for entry into the profession and ensure they are competent to practice safely and ethically, providing interior design services that meet the needs of clients and users, and enhancing the reputation of the interior design profession as a whole. By the end of the course, students will be able to demonstrate a comprehensive understanding of professional practice in interior design, apply ethical principles and industry standards to real-world scenarios, and confidently pursue professional certification and licensure.

UNIT-1

- Introduction to professional practice in interior design
- Ethical principles and codes of conduct
- Industry standards and regulations
- Building codes and accessibility standards

UNIT-2

- Developing a professional portfolio and branding
- Effective communication and client relationships
- Business management and marketing strategies
- Contract documentation and project management

UNIT-3

- Preparing for professional certification and licensure
- Industry trends and continuing education
- Case studies in professional practice
- Capstone project: Developing a comprehensive professional portfolio and business plan

-

COURSE OUTCOMES:

CO1	Students will demonstrate a comprehensive understanding of the legal, ethical, and professional principles that govern the interior design profession, and apply them to real-world scenarios.
CO2	Students will develop a professional portfolio and brand identity, and demonstrate effective communication and business skills to successfully market themselves and their services to clients and employers.
CO3	Students will be prepared to enter the interior design profession with the knowledge, skills, and confidence to practice safely and ethically, and to pursue professional certification and licensure, such as the National Council for Interior Design Qualification (NCIDQ) certification.

Suggested Text Books:

1. "Interior Design: A Critical Introduction" *by Graeme Brooker (2018)*
2. "Professional Practice for Interior Designers" *by Christine M. Piotrowski (2015)*
3. "The Interior Design Business Handbook" *by Mary V. Knackstedt (2013)*

Suggested Reference Books

1. "Interior Designers' Handbook of Professional Practice" by American Society of Interior Designers (ASID) (2012)
2. "The Designer's Guide to Building and Construction" by David Kent Ballast (2011)
3. "Legal and Ethical Issues in Interior Design" by Nancy A. Stone (2009)

***Additional references/ reading material could be suggested by the subject faculty**

Semester- III

241/AE/VA/301	Personal Finance	L	T	P	C
		2	0	0	2

Max. Marks: 50 **Written Exam:35**

Credits: 2 **Internal Assessment: 15**

Note:

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).
3. For the remaining three questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Course Objectives:

The competencies, which form the basis for this semester course, enable students to analyze their personal financial decisions, evaluate the costs and benefits of their decisions, recognize their rights and responsibilities as consumers, and apply the knowledge learned in school to financial situations encountered later in life.

Course Outcomes:

CO1: Recognize opportunities inherent with good personal financial planning.

CO 2: Demonstrate the use of economic information to make informed personal financial decisions.

CO 3: Compute interests charges based on various types of borrowing situations.

UNIT-I

Personal Finance **Teaching Hours: 12**

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

Investment Management **Teaching Hours: 12**

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.

Suggested Readings

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

241/AE/VA302	Circular Economy	L	T	P	C
		2	0	0	2

Maximum Marks:50 **Written exam:35**

Credits:2 **Internal assessment:15**

Note:

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3*5=15 marks).
3. For the remaining three questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Course Objectives: The course aims to create skilled manpower and entrepreneurship in the field of Circular Economy and to acquaint students about the needs of businesses related to circularity and to create zeal among students to pursue research and development (R&D), and Entrepreneurship in this domain. Creation of entrepreneurs who would promote knowledge in core competencies of environmental education is also aimed by this course.

Course Outcomes

CO1**:** Apply the concept of circular economy to environmental engineering problems

CO2: Understand the concept of circularity and conduct relevant research

CO3: Use the principles of circularity for application to sustainable development

Unit I

Introduction to Circular Economy **Teaching Hours:12**

Linear Economy and Its Emergence, Economic and Ecological Disadvantages of Linear Economy, Replacing Linear Economy by Circular Economy, Development of Concept of Circular Economy, A Differential - Linear Vs Circular Economy

Unit II

Characteristics And Legal Framework **Teaching Hours:12**

Material Recovery, Waste Reduction, Reducing Negative Externalities, Explaining Butterfly Diagram, Concept of Loop; Role of Governments and Networks, Sharing Best Practices, Universal Circular Economy Policy Goals, India and CE Strategy, ESG.

Suggested Readings:

- The Circular Economy A User's Guide, Walter R Stahel , Routledge; 1st Edition (24 June 2019)
- Circular Economy: (Re) Emerging Movement, Shalini Goyal Bhalla, Invincible Publisher
- The Circular Economy Handbook: Realizing The Circular Advantage, Peter Lacy, Jessica Long, Wesley Spindler, Palgrave Macmillan UK
- Waste to Wealth: The Circular Economy Advantage, Peter Lacy, Jakob Rutqvist, Palgrave Macmillan
- Towards Zero Waste: Circular Economy Boost, Waste to Resources María-Laura Franco-García, Jorge Carlos Carpio-Aguilar, Hans Bressers. Springer International Publishing 2019
- Strategic Management and the Circular Economy Marcello Tonelli, Nicolo Cristoni, Routledge 2018.
- Circular Economy: Global Perspective Sadhan Kumar Ghosh, Springer, 2020
- The Circular Economy: A User's Guide Stahel, Walter R. Routledge 2019
- An Introduction to Circular Economy Lerwen Liu, Seeram Ramakrishna, Springer Singapore 2021.

CYBER SECURITY

Semester	3			
Course code	VAC-02			
Category	Value Added Course			
Course title	Cyber Security			
Course ID	241/CS/VA301			
Scheme and Credits	L	T	P	Credits
	2	0	0	2
Theory Internal	15 marks			
Theory External	35 marks			
Total	50 Marks			
Duration of Exam	3 hours			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no.2 to 9 will be of 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE OUTCOMES:

At the end of this course, students will demonstrate the ability to

CO1: Recognize key terms of cyber domain and identify cyber threats

CO2: Understand cyber law concepts, intellectual property rights and digital rights management.

CO3: Diagnose and examine basic security loopholes, anomalous behaviour in Internet.

CO4: Understand principles of Web Security, secure and protect personal data on the Internet.

CO5: Security issues in Blockchain.

UNIT - I

Overview of Cyber Security: Cyber security increasing threat landscape, Cyber security terminologies- Cyberspace, attack, attack vector, attack surface, threat, risk, vulnerability, exploit, exploitation, hacker, Non-state actors, Cyber terrorism, Protection of end user machine, Critical IT and National Critical Infrastructure, Cyberwarfare, Case Studies.

UNIT - II

Cybercrimes: Cybercrimes targeting Computer systems and Mobiles- data diddling attacks,

spyware, logic bombs, DoS, DDoS, APTs, virus, Trojans, ransomware, data breach., Online scams and frauds- email scams, Phishing, Vishing, Smishing, Online job fraud, Online sextortion, Debit/credit card fraud, Online payment fraud, Cyberbullying, website defacement, Cyber-squatting, Pharming, Cyber espionage, Crypto-jacking, Darknet- illegal trades, drug trafficking, human trafficking., Social Media Scams & Frauds- impersonation, identity theft, job scams, misinformation, fake news cybercrime against persons-cyber grooming, child pornography, cyber stalking., Social Engineering attacks, Cyber Police stations, Crime reporting procedure, Case studies.

UNIT - III

Cyber Law: Cybercrime and legal landscape around the world, IT Act,2000 and its amendments. Limitations of IT Act, 2000. Cybercrime and punishments, Cyber Laws and Legal and ethical aspects related to: AI/ML, IoT, Blockchain, Darknet and Social media

Data Privacy and Data Security: Defining data, meta-data, big data, non-personal data. Data protection, Data privacy and data security, Personal Data Protection Bill and its compliance, Data protection principles, Big data security issues and challenges, Data protection regulations of other countries- General Data Protection Regulations (GDPR),2016 Personal Information Protection and Electronic Documents Act (PIPEDA), Social media- data privacy and security issues.

UNIT - IV

Cyber security Management, Compliance and Governance: Cyber security Plan- cyber security policy, cyber crises management plan., Business continuity, Risk assessment, Types of security controls and their goals, Cyber security audit and compliance, National
cyber security policy and strategy.

BOOKS:

1. Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives by Sumit Belapure and Nina Godbole, Wiley India Pvt. Ltd.
2. Information Warfare and Security by Dorothy F. Denning, Addison Wesley.
3. Security in the Digital Age: Social Media Security Threats and Vulnerabilities by Henry A. Oliver, Create Space Independent Publishing Platform.
4. Data Privacy Principles and Practice by Natraj Venkataramanan and Ashwin Shriram, CRC Press.
5. Information Security Governance, Guidance for Information Security Managers by W. KragBrothy, 1st Edition, Wiley Publication.

Course code	VAC-2			
Category	Value-added Course			
Course title	Human Values and Community Outreach			
Course ID	241/MCA/VA301			
Scheme and Credits	L	T	P	Credits
	2	0	0	3
Theory Internal	15 Marks			
Theory External	35 Marks			
Total	50 Marks			
Duration of Exam	03 Hours			

COURSE OBJECTIVES

1. The course aims at developing the desired English language skills of students of Engineering and Technology so that they become proficient in communication to excel in their professional lives. The course has been designed as to enhance their linguistic and communicative competence.
2. Understanding (Clarity) of Human Relationships and Family.
3. Exposure to Issues in Society and nature (larger manmade systems and Nature).

UNIT-I

Motivation and Objectives of Human Values Course, Purpose of Education, Complimentarily of skills and values, how the current education system falls short, Peers Pressure, Social Pressure In various dimensions of life, Concept of Competition and Time Management.

UNIT-II

Concept of Preconditioning, Concept of Natural Acceptance in Human Being, Understanding Relationships, Dealing with anger, Nine universal values in human relationships. Concept of prosperity, idea of Society, Idea of decentralization of politics, economics, education, justice etc., Its comparison with centralized systems, Balance in nature.

UNIT-III

Techniques of Good Writing, Writing self-assessment tasks, Precis writing and note making. Paragraph and Essay writing, Article writing and summarizing

UNIT-IV

Business Communication: Formal and Informal Letter writing, Statement of Purpose, Job application & CV (summary statement of academic & professional profiles) and Power point presentations through relevant slides.

Suggested reference books

1. Bhatnagar, Nitin and Mamta Bhatnagar. Communicative English for Engineers and Professionals. Pearson Education, 2013.
2. Swan, Michael. Practical English Usage. OUP, 1995.

3. Gangal, J.K. Practical Course in Spoken English. New Delhi: PHI Learning, 2015.
4. Konar, Nira. Communication Skills for Professionals. New Delhi: PHI Learning Pvt. Ltd., 2009.
5. Bansal, R.K. and J.B. Harrison. Spoken English. Orient Longman, 1983.
6. Sharma, Sangeeta and Binod Mishra. Communication Skills for Engineers and Scientists. Delhi: PHI Learning Pvt. Ltd., 20.
7. Annie Leonard, “The Story of Stuff,’’ Free Press.
8. Mohandas Karamchand Gandhi,`` The Story of My Experiments with Truth,” Beacon Press
9. J Krishnamurthy,`` On Education,” Official repository
10. Hermann Hesse ,`` Siddhartha,” Bantam Books.
11. On Education - The Mother Aurobindo Ashram Publication

241/ECO/SE201	Introduction to Research Methodology

Maximum Marks:50 **Written exam:35**
Credits:2 **Internal assessment:15**
Note:

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3*5=15 marks).
3. For the remaining three questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

UNIT – I

Research – Meaning, Objectives and Types, Research Process, Criteria of a Good Research.

Research Design: Meaning, Need, Types, Approaches to Research Design: Qualitative and Quantitative, Basic Concepts: Dependent and Independent Variables, Research Hypothesis

UNIT – II

Sampling: Meaning, Sampling Methods- Probability and Non- Probability, Sampling and Non-Sampling Error, Methods of Data Collection:

Collection of Primary Data- Observation, Interview, Questionnaire and Schedule Methods in brief, Collection of Secondary Data: Various Sources, Selection of appropriate Method for Data Collection

241/ECO/SE202	Digital Economics

Maximum Marks:50 **Written exam:35**
Credits:2 **Internal assessment:15**
Note:

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3*5=15 marks).
3. For the remaining three questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit 1

Definition and scope, Characteristics of digital markets, Economics of digital platforms (e.g., network effects, multi-sided markets), Case studies of major digital platforms (e.g., Google, Amazon, Facebook), Characteristics of information goods (e.g., non-rivalry, non-excludability), Pricing strategies for digital products, The role of intellectual property in the digital economy.

Unit 2

Market power and monopolistic tendencies in digital markets, Antitrust concerns related to digital platforms, Government's role in regulating the digital economy, Policy challenges in the digital age (e.g., taxation, labor market impacts), The impact of digital transformation on innovation and productivity.

241/AE/SE201	Data Analysis with Statistical Softwares- I	L	T	P	C
		0	0	2	2

Max. Marks: 50 **Practical Exam: 35**

Credits: 2 **Practical/ Internal Assessment: 15**

Course objective

The objective of the paper is to make students familiar with theory and application of statistical methods. This course covers the statistical foundations of data analysis including the statistical theory and its applications in Economics through MS Excel and SPSS.

Course Outcomes

CO1: Understand the use of MS Excel and SPSS in data analysis.
CO2: Develop research skills for in-depth analysis of Data
CO3: Ability to use mathematical, statistical, financial, and graphical functions available in MS Excel and SPSS for various computational works related to economics and business.

Module I- MS-Excel: Work sheet-entering data and creating work sheets and work book opening and formatting. Concept of Data-Record and File-types of Data-Data Entry-File handling and Operations like opening, appending and cascading-closing and attribute controls-Data Storage and Retrieval Data Operations-Preparation and Formatting of Text, Tables and Graphs-Estimation of Descriptive Statistics.

Module II- Cross Section & Panel Data Techniques and Methods using SPSS- Groups, Tables, Graphs and Objects, Descriptive Statistics, One Way Tabulation, Cross Tables, One Sample T Test, Independent Sample Test, Paired Sample T Test, One Way ANOVA, Correlation-Bivariate Partial, Regression-Least Square, Binary& Logistic Regression, 2 Stage Least Square, Factor Analysis, Principal Component, Panel Regression Analysis.

Skill Enhancement Course from the department for pool of the Courses in the University

(These courses are offered by Department of Psychology for students of other departments/same departmentand is designed to provide value-based and/or skill-based knowledge and should contain both theory and lab/hands-on/training/field work.)

Semester 2

Counselling Skills and Techniques

SEC-1 Counselling: Skills & Techniques (241/MPSY/SE 201)
Credits:2 (Hrs./Week: 2)

Maximum Marks: 50
Theory Examination: 20
Internal Assessment: 05
Practical Examination: 20
Practical Assessment: 05
Time: 2 hrs.

Note: The students will be required to attempt three questions in all. Question No. I will be compulsory comprising of 8 short answer type questions of 3 marks each and will cover the entire syllabus. The answer should be in 100-200 words. The students are required to attempt five short answer type questions out of 8,i.e., 5X 3 = 15 marks. In addition to it, Question Nos. II to V will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 10 marks each i.e. 2 X 10 = 20 marks thus making it the total weight age to 35 marks. Two questions to be attempted. One from each unit.

Course Outcomes:

- Students will demonstrate a comprehensive understanding of the basic steps, types and approaches of counselling.
- Students will cultivate critical thinking skills to analyze and apply different counselling skills.
- Students will demonstrate the practical application of counselling skills and techniques by effectively utilizing reinforcement, mindfulness, meditation, and art therapies in real-world situations.

Unit-1

Guidance v/s Counselling; Counselling: Meaning, Goals, Process of counselling, Needs and Types of counselling; Basic counselling skills.

Contemporary Issues in counselling: Working with children and their parents, older adults, differently abled and substance abusers.

Unit-2

Strategies of Counselling: Directive, Non-Directive Approach to Counselling. Psychoanalytic approaches to counselling.

Behavioural Contingencies: Reinforcements, Premack Principle, Shaping and Modelling. Promotional Approaches: Creative Art Therapies, Mindfulness ,yoga, meditation

Suggested Readings:

1. Capuzzi, D and Gross D.R. (2008). Counseling and Psychotherapy Theories and Interventions.Dorling Kindersley (India) Pvt. Ltd., Licensees of Pearson Education in South Asia.
2. Gibson, R.L., & Mitchell, M.H. (2008). Introduction to Counselling and Guidance. Delhi:PHI Learning.
3. Sharma, R. A. (2007). Fundamentals of Guidance and Counselling. Meerut: R. Lall Book.
4. Gladding, S.T and Batra, P (2018). Counseling A Comprehensive Profession. Pearsons India Education services Pvt. Ltd.
5. Bhola, P. &Raghuram, A. (2016). Ethical Issues in Counselling and Psychotherapy Practice:
6. Murphy, J.J. (2015). Solutions Focused Counselling in Schools. Wiley. (Chapter 3, Appendix E, G, H, J)
7. Nelson, R, J. (2015) Theory and Practice of Counselling and Psychotherapy. 6th edition. New Delhi: Sage South Asia.
8. Capuzzi, D. & Stauffer, M. D. (2022). Counselling and Psychotherapy: Theories and Interventions (7th Ed.) American Counselling Association
9. Seligman, L &Reichenberg, L.W. (2010) Theories of counselling and Psychotherapy. New Jersey: Pearson (SFBT and family systems)

– II

Counselling in Social Work

SEC-01

Credits: 2 (Hrs./Week: 2)

Maximum Marks: 50
Theory Examination: 35
Internal Assessment: 15

Note: The students will be required to attempt three questions in all. Question No. I will be compulsory comprising of 8 short answer type questions of 3 marks each and will cover the entire syllabus. The answer should be in 100-200 words.The students are required to attempt five short answer type questions out of 8,i.e., 5X 3 = 15 marks. In addition to it, Question Nos. II to V will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 10 marks each i.e. 2 X 10 = 20 marks thus making it the total weight age to 35 marks. Two questions to be attempted. One from each unit.

Course Outcomes:

- Develop Proficiency in Counselling Techniques
- Demonstrate Essential Counselling Skills
- Apply counselling methods effectively in social work to address psychosocial needs

Unit-I

Introduction to Counselling

- Counselling: Concept, Types & Scope
- Assumptions, Principles, and Goals of Counselling
- Attributes of a Counsellor
- Counsellor Self-Care

Unit-II

Stages and Skills of Interpersonal Counselling

- Stages in the Interpersonal Counselling Process
- Counselling Skills for Relationship Building and Exploration
- Counselling Skills for Developing a New Perspective
- Counselling Skills for Facilitating Positive Action, Goal Setting, and Follow-Up

Unit-III

Therapeutic Interventions

- Grief and Trauma Counselling
- Child-Centered Counselling
- Motivational Enhancement Therapy for Working with Addiction
- Solution-Focused Therapy

Master of Social Work
Semester

Unit-IV
Application and Integration of Counselling in Social Work

- Counselling in Diverse Settings
- Cross-Cultural Counselling
- Integrating Counselling with Social Work Practice
- Evaluation and Ethical Issues in Counselling

Suggested Readings:

Neilson, P., & Others (Eds.). (2016). Creative arts in counselling and mental health.
Jones, R. N. (2011). Theory and practice of counselling and therapy (5th ed.). Sage Publications.
Corey, G. (2005). Theory and practice of counselling and psychotherapy. Brooks/Cole.
Worden, J. W. (2001). Grief counseling and grief therapy: A handbook for the mental health professional. Springer Publishing Company.
Hoffman, M. A. (1996). Counseling clients with HIV disease. Guilford Press.
Street, E. (1994). Counselling for family problems. Sage Publications.
Young, M. E. (1992). Counselling methods and techniques: An eclectic approach. Macmillan.
Velleman, R. (1992). Counselling for alcohol problems. Sage Publications.
Ivey, A. E., & Others. (1987). Counselling and psychotherapy: Integrating skills, theory and practice (2nd ed.). Prentice Hall.
Patterson, C. H. (1986). Theories of counselling and psychotherapy. Harper & Row.
Karpf, M. J. D., & Others. (1958). Marriage counseling: A casebook. Association Press.
Pepinsky, H. B., & Others. (1954). Counselling theory and practice. Ronald Press Company.
Loughran, H. (2019). Counselling skills for social workers. Routledge.
Boynton, H. M., & Vis, J.-A. (Eds.). (2022). Trauma, spirituality, and posttraumatic growth in clinical social work practice (Paperback ed.). University of Toronto Press.
Seden, J. (2005). Counselling skills in social work practice (2nd ed.). Open University Press, McGraw-Hill Education.
Miller, L. (2011). *Counselling skills for social work*. SAGE.

Semester-II

Skill Enhancement Course

COURSE ID: 241/PHY/SE201

RADIATION PHYSICS

Marks (Theory): 70 **Credits: 4**

Marks (Internal Assessment): 30 **Time: 3 Hours**

Note: The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist of at least 4 parts covering entire syllabus. The question paper is expected to contain problems to the extent of 20% of total marks. The examinee will be required to attempt 5 questions; selecting one question from each unit and the compulsory.

Course Outcomes:

After successful completion of the course on Radiation Physics, a student will be able:

- *To define and explain different interactions of ionizing radiation with matter.*
- *To Understand the basic working principles of radiation detectors.*
- *To grasp the concept of radiation dose and analyze the effect of radiation on the functioning of living cells.*
- *To evaluate the radiation hazards and get familiar with radiation dose limitations.*

Unit – I

Basics of Radiation: Definition and types of radiation, nature and properties of nuclear radiations, Radioactive decay, Half-life time, Source activity, Laboratory sources of nuclear radiation (Alpha source, Beta source and Neutron sources); Interaction of Radiation with Matter: Modes of interaction: ionization, excitation, elastic and inelastic scattering, Bremsstrahlung, Cerenkov radiation, Concepts of specific ionization, mean free path; Interaction of Light Charged Particles with matter; Interaction of Heavy Charged Particles with matter; Interaction of Electromagnetic Radiations with matter: Photoelectric effect, Compton Scattering, and Pair production; Attenuation of Gamma Radiation: Linear and mass attenuation coefficient; Interaction of Neutrons with matter: elastic scattering, inelastic scattering, capture, and fission.

Unit – II

Radiation Detectors and Monitors: Principles of radiation detection; Gas filled radiation detectors: ionization chambers, proportion counters, GM counters, and Spark counter. Scintillation (organic/inorganic) counter; Solid State Detector: Crystal detector, Semiconductor Detectors (Junction type detector, Lithium drift Germanium detector, Silicon based Pixel & Strip detectors, and HPGe), Neutron Detectors, Thermo – Luminescent Dosimeters (TLD), SSNTD,

Chemical detectors (Photographic Emulsions Films), Radiation Monitoring Instruments and Calibration check of radiation monitoring equipment.

Unit – III

Radiation quantities and units: Exposure, Dose, Equivalent Dose, Effective Dose, KERMA, Annual Limit on Intake (ALI), and Derived Air Concentration (DAC); Biological Effects of Ionizing Radiation :Introduction, Cell Biology: Structure and function of living cell, cell division-mitosis, meiosis and differentiation, central dogma of molecular biology, genetic codes-DNA, RNA and Proteins; Effect of Radiation on Cell: inhibition of cell division, chromosome aberrations, genes mutation, and cell death; Biological effects of Radiation on Human: Somatic Effects (Early effect) and Stochastic effect (Late effect).

Unit – IV

Radiation Hazard Evaluation and Control: Radiation Hazard: Internal Hazards and External Hazards; Evaluation and Control of Radiation Hazard, Radiation Shield, Monitoring of External Radiation, Control of Internal Hazard: (i) Containment of Source (ii) Control of Environment (iii) Contamination (iv) Air Contamination Monitoring (v) Personal Contamination Monitoring (vi) Decontamination Procedures; Radiation Emergency and Preparedness.

Operational Limits: Principles of Radiological Protection: Justification of Practice, Optimization of Practice, and Dose Limitations; Internal Exposure, Dose Limit for (i) Radiation Workers (ii) Public, Occupational Exposure of Women, Apprentices and Students

References/Books:

1. Introduction to Radiological Physics and Radiation Dosimetry, by Frank H. Attix, John Wiley & Sons, 1986.
2. Radiation Detection and Measurement 4th Edition by Glenn F. Knoll
3. Physics and Engineering of Radiation Detection by Syed Ahmed, Laurentian University, Ontario, Canada
4. Measurement and Detection of Radiation, Fourth Edition by Nicholas Tsoulfanidis and Sheldon Landsberger
5. Introduction to Experimental Nuclear Physics by R. M. Singru.
6. Elements of Nuclear Physics by W. E. Meyerhof.
7. Nuclear Radiation Detectors by S. S. Kapoor and V. S. Ramamurthy
8. Introduction to High Energy Physics (2nd edition) by D. H. Perkins.
9. Techniques For Nuclear and Particle Physics Experiments by William R. Leo.

M.Sc. MATHEMATICS 2nd SEMESTER
Computational Technique Using MATLAB

SEC-01 Maximum Marks: 50
Credits: 2(1L+1P) Theory External: 20
Theory Internal: 05
Max. Time: 3 hrs Practical External: 20
Course ID: 241/MAT/SE201 Practical External: 05

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of four short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Students will have to attempt one question from each unit. Each question shall carry equal marks.*

Course Learning Outcomes:

CLO1 Know the basic concepts of MATLAB software.
CLO2 Understand various elementary Matrix operations and loops.
CLO3 Study symbolic toolbox and programs for solving systems of linear equations,
CLO4 Learn various types of graphs using MATLAB.

Unit-I

Introduction to MATLAB Programming: Basics of MATLAB programming, Variables and assignments, Operators, Working with complex numbers, Mathematical operations, Functions for input and output.

Unit-II

Introduction to Matrices in MATLAB: Defining Matrices, Matrix functions, Matrix operations, Vector functions. Loops: for loops, while loops.

Unit-III

Linear Algebra: Solving a linear system, finding eigenvalues and eigenvectors, Numerical Integration, Introduction of symbolic toolbox, finding roots of polynomial equations.

Unit-IV

Graphs and plots: Basic 2-D plots, Overlay plots, specialized 2-D plots, 3-D plots, Interpolated surface plots, using subplots for multiple graphs, saving and printing graphs.

Practicals:

1. Basic mathematical computation.
2. Program to generate Matrix with addition, subtraction and multiplication of matrices.
3. Solving System of Linear equations with two variables.
4. Program to use inbuilt functions and creating new functions.
5. Plotting the graph of function of two variables
6. Program to Differentiate and Integrate.
7. Program to find root of higher degree equations.
8. To plot Graph of Various Functions like sin x, cos x, etc.
9. To find Eigenvalues and Eigenvectors of given matrix.

10. Solving polynomial equations with the method studied.

Reference Books:

1. Amos Gilat, MATLAB: An Introduction with Applications, 5th Edition, Wiley.
2. C. F. Van Loan and K-Y, D. Fan, Insight Through Computing : A MATLAB Introduction to Computational Science and Engineering, SIAM Publication, 2009.
3. Y. Kirani Singh and B. B. Chaudhari, MATLAB Programming, PHI Learning Private Ltd., New Delhi 2010.
4. Krister Ahlersten, An Introduction to MATLAB, Bookboon.com.
5. Rudra Pratap, Getting Started with MATLAB, Oxford University Press.

SEC-1 CREATIVE WRITING AND FUNDAMENTALS

Maximum Marks: 50

Theory: 35

Internal Assessment: 15

Course Objectives

CO	Description
CO-1	Develop an understanding of different writing styles and tones, and apply them appropriately in different contexts, genres, and forms.
CO-2	To impart a keener understanding of the finer aspects of creative writing, translation and other soft skills.
CO-3	To provide the students general guidelines in dealing with questions of applied nature.

Course Outcomes

On completing the paper **Creative Writing and Fundamentals** the students shall be able to realize following programme outcomes:

CO	Description
CO-1	Develop advanced written communication skills to convey complex ideas clearly and persuasively.
CO-2	The students would be examined in terms of their skills of writing creatively on given situations and also translating paragraphs from one language to another.

CO-3	Ability to explore multimodal forms of composition, including the integration of visual elements, audio, and other media in written communication.

UNIT 1: Fundamentals of writing Introduction to creative writing Meaning, Importance and Fundamentals Steps of creative writing

Types of Creative writing

Learning to write poetry, fiction, Drama (Reading and Understanding), Writing sessions.

UNIT 2: A PRESS COPY PREPARATION

Reading Aspects- Close Reading

Reading works in literature- Analysis and encapsulation

Proof Reading and Editing with Practice sessions

SUGGESTED READINGS:

Dev. Creative writing- New Delhi: Pearson

Bell, Julia. The Creative Writing Course Book Pan Macmillan

Harper, Greame, Teaching Creative Writings.

Instructions to the Paper setter and the students:

All questions are compulsory to attempt.

Unit 1

Question no. 1 will be from unit 1 with internal choice. (10 marks)

Unit 2

Question no. 2 will be from unit 2 with internal choice. (10 marks)

SEC-1

Script Nigaari Max Marks:35

اسکرپٹ نگاری

Objective:

اس پرچے کا مقصد یہ ہے کہ:

ا۔طلباء ایک کہانی کو اسکرپٹ میں بدلنے کا طریقہ سیکھ سکیں تا کہ وہ ٹیلی وژن کی دنیا میں بہتر اسکرپٹ لکھ کر معاشی بہتری حاصل کر سکیں اور اپنے اندر لکھنے کا ہنر پیدا کر سکیں ۔

Course Outcome:

اس پرچے کی مکمل تدریس کے بعد طلباء اس قابل ہو جائیں گے کہ وہ:

ا۔اکرپٹ کیا ہوتی ہے اور اس کی کیتنی قسمیں ہیں جان جائیں گے۔

۲۔اسکرپٹ نگاری کے کچھ اصول ہوتے ہیں مثلا ریسرچ، ڈانچہ، منصوبہ یا تجویز، بصری مکالمہ ان سے واقف ہو جائیں۔

۳۔اسکرپٹ لکھنے کا مشق انہیں بہتر اسکرپٹ لکھنے میں مدد کریگا اور وہ اچھے اسکرپٹ نگار بن سکتے ہیں۔

unit-1

اسکرپٹ کی تعریف اور قسمیں

unit-2

اسکرپٹ نگاری کے اصول

(ریسرچ، ڈانچہ، منصوبہ یا تجویز، بصری، مکالمہ)

unit-3

کہانی کو اسکرپٹ میں بدلنے کا تریقہ

unit-4

اسکرپٹ لکھنے کی مشق

کتب برائے مطالعہ

ا۔انجم عثمانی، ٹیلی وژن نشریات، مکتبہ جامعہ، نئی دہلی

۲۔کمال احمد صدیقی، اردو ریڈیو اور ٹیلی ویژن میں ابلاغ کی زبان، قومی اردو کونسل، نئی دہلی

۳۔اے کے چٹرجی، عوامی ترسیل نیشنل بک ٹرسٹ، نئی دہلی

۴۔(ہندی)منوہرشیام جوشی، پٹ کتھالیکھن :ایک پریچئے ،راج کمل پرکاشن
۵۔(ہندی)اصرف وجاہت: پٹ کتھالیکھن بیوہارک نبردشیکا

Instructions to the Paper-Setter and Students:

All questions are compulsory to attempt.

Unit-1 There will be two questions of which one is to be opted of 10 marks.

Unit-2 There will be two questions of which one is to be opted 10 marks.

Unit-3 There will be two questions of which one is to be opted 8 marks.

Unit-4 There will be two questions of which one is to be opted 7 marks.

Semester II

SEC-1: Effective Leadership

241/PPAG/SE201	Effective Leadership
Semester II	Maximum Marks: 50
Credits: 2 (Hrs./week:2)	Theory Examination: 35
Time: 2 hours	Internal Assessment: 15

Course Outcome:

Remembering: Define key concepts, ethics, and theories related to leadership.

Understanding: Explain the significance of leadership traits, ethics, and the role of women in leadership.

Applying: Apply leadership skills to practical scenarios, including strategic planning and communication.

Analyzing: Analyze and evaluate the effectiveness of leadership approaches and skills in various contexts.

Note for External Examiner:

1. **Five Questions will be set in all and students will be required to attempt 3 questions.**
2. **Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).**
3. **For the remaining four questions, students will attempt 1 out of 2 questions from each of the two units (10 marks each).**

Unit I: Concept of Leadership

1) Who is a leader?
2) Leadership Ethics and traits
3) Women and Leadership
4) Leadership Theories: Motivational, Behavioral and Contingency

Unit II: Essentials of Effective Leadership Skills

1) Leadership skills
2) Personality
3) Strategic planning
4) Time Management
5) Risk Taking

6) Communication skills

7) Diversity management

Suggested Readings:

1. Eagly, A. H., & Carli, L. L. (2007). *Through the labyrinth: The truth about how women become leaders*. Harvard Business Review Press.
2. Hughes, R. L., Ginnett, R. C., & Curphy, G. J. (2018). *Leadership: Enhancing the lessons of experience* (8th ed.). McGraw-Hill Education.
3. Northouse, P. G. (2018). *Introduction to leadership: Concepts and practice* (4th ed.). SAGE Publications.
4. Yukl, G. (2012). *Leadership in organizations* (8th ed.). Oxford University Press.
5. Northouse, P. G. (2018). *Leadership: Theory and practice* (8th ed.). Oxford University Press.
6. Antonakis, J., & Day, D. V. (Eds.). (2017). *The nature of leadership* (3rd ed.). Oxford University Press.
7. Day, D. V., & Antonakis, J. (Eds.). (2012). *The nature of leadership* (2nd ed.). SAGE Publications.
8. Avolio, B. J., & Yammarino, F. J. (Eds.). (2013). *Transformational and charismatic leadership: The road ahead*. Oxford University Press.
9. Stogdill, R. M. (1974). *Handbook of leadership: A survey of theory and research*. Free Press.
10. Tannenbaum, R., Weschler, I. R., & Massarik, F. (1961). *Leadership and organization: A behavioral science approach*. McGraw-Hill

MA(JMC)
SEMESTER -2

Name of Subject: **Photoshop and Illustrator**		
Subject Code: SEC-01	Course ID: 241/JMC/SE-201	Maximum Practical Marks: 50 (15+ 35)

Objectives: To provide advanced skills in digital image editing and graphic design using Adobe Photoshop and Illustrator. This course aims to equip students with the technical proficiency and creative strategies needed to produce professional-level visual content.

Course Outcomes:
Students will be able to:

1. Master advanced techniques and tools in Adobe Photoshop and Illustrator.
2. Apply design principles and concepts to real-world projects.

COURSE CONTENTS:

Unit 1: Adobe Photoshop	
1.1 Overview and Workspace Customization 1.2 Tools and Their Applications 1.3 Layers, Masks, and Blending Modes 1.4 Advanced Image Retouching and Restoration Techniques	
Unit 2: Adobe Illustrator	
2.1 Overview and Vector Graphics Basics 2.2 Drawing Tools and Techniques 2.3 Working with Text and Typography 2.4 Creating Complex Shapes and Using Color Tools	

Suggested Readings:

1. "Adobe Photoshop Classroom in a Book" by Andrew Faulkner and Conrad Chavez
2. "Digital Painting Techniques: Practical Techniques of Digital Art Masters" by 3dtotal Publishing
3. "The Photoshop Workbook: Professional Retouching and Compositing Tips, Tricks, and Techniques" by Glyn Dewis
4. "Digital Painting for Beginners" by Carlyn Beccia
5. "Adobe Illustrator Classroom in a Book" by Brian Wood
6. "Illustrator CC Digital Classroom" by Jennifer Smith and AGI Creative Team

M.Sc. ENVIRONMENTAL SCIENCE – SEMESTER- II
SUBJECT NAME: BASICS OF REMOTE SENSING AND GIS
COURSE CODE: SEC-1
Course ID: 241/EVS/SE201

NO. OF CREDITS: 3

L	T	P			
2	0	0	**TE**	:	50
			Total	:	50

Note: 1. Nine questions will be set in all. All questions will carry equal marks.

2. Question no. 1 which will be short answer type, covering the entire syllabus will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each unit I to IV.

The candidates will be required to attempt question no.1and four more questions.

Outcomes: After course completion learner will be able to:

CO.1 Understand the concepts of Photogrametry and compute the heights of objects

CO.2 Understand the principles of aerial and satellite remote sensing, comprehend the energy interactions with earth surface features, spectral properties of water bodies.

CO.3 Understand the basic concept of GIS and its applications, know different types of data representation in GIS

CO.4 Illustrate spatial and non-spatial data features in GIS and understand the map projections and coordinates systems

CO.5 Apply knowledge of GIS and understand the integration of Remote Sensing and GIS

Unit - I

Definition, Introduction and scope of remote sensing. Electromagnetic radiation, atmosphere window, Platforms, Sensors and type of scanning systems. Basic characteristics of sensors; salient features of sensors used in LANDSAT, SPOT and Indian remote sensing satellites.

Unit - 2

Aerial photography- vantage point, cameras, Filters and types of films. Elements of visual image interpretation. Multispectral Remote sensing, Microwave Remote sensing, Photogrammetry - Introduction, Stereo- scopic vision, Projection types.

Unit - 3

Digital image and image structure, Image restoration and image enhancement. Image classification. Remote sensing application in Forestry, Ecology and environment, Land use, Agriculture, soils and geology, Disaster management.

Unit- 4

GIS technology and its uses in environmental science, Hardware and software requirement for

GIS. Conceptual model of spatial information, Conceptual model of non-spatial information. GPS.

References:

1. Introduction to Environmental remote sensing - Curtis

2. Principles of Remote sensing - Lily and kliffer.

SEC -01 BASICS OF ARCHAEOLOGY

Credit: 2 (Hrs/week: 2) **Maximum Marks: 50**
241/HIS/SE207 **Theory Examination: 35**
Internal Assessment: 15
Time: 3 Hours

Learning Outcomes:

- To acquaint with the discipline of archaeology with regards to aims, scope and history
- To understand the theoretical concepts and practices in data collection in archaeology
- To appreciate various dating methods in grasping and interpreting historical data.
- To delineate various trends and conservation methods in Archaeology and their application in interpreting historical data.

Unit I: Definition, Aims , scope and History

Definition, aims, scope, Development of studies in Archaeology from antiquarian till the present, History of Indian Archaeology (from Cunnigham to Wheeler)

Unit II: Methods of Data Extraction and Documentation

Aims and Methods of Exploration, Methods of Excavations-Vertical and Horizontal, Maintaining record of the excavated remains.

Unit III: Chronology and Dating Methods

Stratigraphy , Methods of Dating- Relative and Absolute

Unit IV: New Trends in Indian Archaeology and Conservation Techniques

Marine Archaeology in Indian Context , New Archaeology, Industrial Archaeology, various conservation and preservation methods of archaeological remains.

Recommended Readings:

- Binford, L. R., An Archaeological Prespective, London, 1972.
- Daniel, G. A., Hundred Years of Archaeology, London, 1950.
- Sankalia, H. D., New Archaeology: Its Scope and Application in India, Lucknow, 1977. Wheeler, M., Archaeology from the Earth, New Delhi, 1968.
- Chakrabarti,D. K. 1988, History of Indian Archaeology. Delhi: Munshiram Manoharlal.
- Fagan, Brian.1994. In the Beginning: An Introduction to Archaeology. London.
- Agrawal,D.P and M.D.Yadava. 1995. Dating the Human Past. Pune: ISPQS.
- Allchin, B. and F. R. Allchin. 1982. The Rise of Civilization in India and Pakistan. Cambridge: Cambridge University Press. 37
- Allchin, B. and F. R. Allchin. 1997. Origins of a Civilization: The Prehistory and Early Archaeology of India. New Delhi: Penguin Books India.
- Chakrabarti, D. K. 2012, Fifty Years of Indian Archaeology (1960-2010): Journey of a Foot Soldier. New Delhi: Aryan Books International
- Dhavalikar, M.K. 1999. Historical Archaeology of India. Delhi: Books and Books.
- Ghosh, A. 1989. An Encyclopaedia of Indian Archaeology. Vols. I and II. New Delhi:

Munshiram Manoharlal Publishers Pvt. Ltd.

- Sengupta, G. and K. Gangopadhyay. 2009. Archaeology in India – Individuals, Ideas and Institutions. New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd.
- Skeates, R., C. McDavid and J. Carman. 2012, The Oxford Handbook of Public Archaeology. Oxford: Oxford University Press.
- Walker, M. 2005. Quaternary Dating Methods. West Sussex: John Wiley and Sons.

Semester-II

SEC-1 Basics of Social Research

Credit- 2 **Maximum Marks –50**

241/SOC/SE201 **Theory – 35**

Internal Assessment – 15

Time – 2 hours

The students will be required to attempt three questions in all. Question No. I will be compulsory comprising of 8 short answer type questions of 3 marks each and will cover the entire syllabus. The answer should be in 100-200 words.The students are required to attempt five short answer type questions out of 8,i.e., 5X 3 = 15 marks. In addition to it, Question Nos. II to V will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 10 marks each i.e. 2 X 10 = 20 marks thus making it the total weight age to 35 marks .Two questions to be attempted. One from each unit.

Course Outcomes:

- Students will be introduced with concept of social research,.
- Students will learn about both quantitative and qualitative methods of data collection

UNIT – I

Concepts of Social Research: Nature, Definition and Steps of Social Research; Objectivity and Subjectivity in Social Research

UNIT – II

Quantitative and Qualitative Methods: Nature & Characteristics of observation, questionnaire, Schedule, Interview, Case Study, Content Analysis and Social Survey - Their Importance in Social Research

Readings :

Ahuja, Ram (2001): Research Methods, New Delhi: Rawat Publication.

Goode, W.J. and P.K.Hatt (1952): Methods in Social Research, New York: McGraw International.

Seltiz, Claise et al; (1959): Research Methods in Social Relation, New York: Henry Holt and Co.

Srivastava, Prakash G.N.(1994): Advances Research Methodology, Delhi: Radha

Publication.

Thakur, Devender(2003): Research Methodology in Social Science, Delhi: Deep and Deep Publication.

Young, P.V.(1988): Scientific Social Survey and Research, New Delhi Prentice Hall.

Gurugram University Gurugram, Haryana(India)

PG Program: (Semester-II) **Geography** Subject SEC-1 Paper Syllabus
(as per NEP 2020 w.e.f session 2024-25)

READING AND INTERPRETATION OF MAPS

Paper Code: **SEC-01 (Theory and Practical Paper)**
Course Id: 24/GEO/SE201

Credit: 02 (1+0+2) L+T+P Hrs/Week	**Total Marks**	**50**
Time: 3 Hours Theory	End Semester Exam: Internal Assessment: (Attendance)	20 Marks 5 Marks
Note: Theory Exam: as the instructions mentioned under **Practical Exam:** as the instructions mentioned under Practical Exam Time: 3 Hours	Practical Exam: Internal Assessment: Attendance	20 Marks 5 Marks

Course Outcomes (COs):

CO-01: The students will able to understand Maps, their different types and their essentials elements.

CO-02: They will know and application of geographical coordinates with their importance.

CO-03: They will be able to understand Weather map, Topographical map, Conventional signs and

Digital mapping through GIS.

CO-04: The Students will able to learn essential observational and practical skills to identify different

features on various types of maps and their appropriate interpretation.

Theory

UNIT-I

Cartography: Meaning, brief History and development.
Maps: Meaning and classification. Map and Sketch, Elements of Map. Map and Globe
Map Scale: Types and conversion. Small scale and Large scale maps.

UNIT-II

Directions and sub-directions: Methods of determination of North Direction.
Latitudes and Longitudes: their marking, reading and importance, Geographical Location of any place.
Local Time and Standard Time, World Time Zones.

UNIT-III

Symbols: Conventional signs and Weather symbols. Isopleths: Types and significance.
Topographical Map: Types, Reading and Interpretation of Topographical Map
Area and Length calculation. GIS and digital mapping.

Practical

UNIT-IV

Reading and Interpretation of Physical Map: Physical feature analysis.
Reading and Interpretation of Political Map: Cultural feature analysis.
Weather Map: Reading and Interpretation of Weather Map.

Note: Theory Exam

1. The Question one of paper is compulsory. Question one of paper will contain short answer type of five marks covering entire course.
2. The question paper will comprise two questions from each Unit (Unit-1,2 & 3) total six question in all. Candidates are required to attempt one question from each unit which will be of five marks each.

Note: Practical Exam

1. The question paper unit four will comprise practical part. Candidates (s) are required to prepare one each on interpretation of Physical Map, interpretation of Political Map and Weather Map report. These reports will be of 05 marks each.
2. Candidates will be required to prepare report precisely on the specified Analysis of different Maps.
3. Map reports will be of Maximum 15 Marks.
4. Viva Voce will be of Maximum 5 Marks

Suggested Readings:

- Maling, H.(1973): Co-Ordinate System and Map Projections, George Philip, London.
- Mishra, R.N. and Sharma, P.K.(2020): Prayogik Bhugol, (in Hindi), Rawat Publications, Jaipur.
- Misra, R.P. and Ramesh, A.(1989): Fundamental of Cartography, Concept Publishing Company, New Delhi.
- Richardus, P. and Adler Ron K.(1972): Map Projections, North Holland Publishing Co., Amsterdam.
- Robinson, A.H. et. Al. (1992): Elements of Cartography, John Willy & Sons, New York, 6^{th} edition.
- Sarkar, A. (2015): Practical Geography: A Systematic Approach, Orient Black Swan Private Ltd., New Delhi.
- Sharma, J.P.(2020): Prayogik Bhugol, (in Hindi), Rastogi Publications, Meerut.
- Singh, R. L. and P. K. Dutta, (2012): Prayogatmak Bhugol, (in Hindi), Central Book Depot, Allahabad.
- Singh, R.L.and Rana P.B. Singh (2020): Elements of Practical Geography, Kalyani Publishers, Ludhiana.

SEMESTER - 2

SEC – 01 हिन्दी भाषा का रचनात्मक स्वरूप

पूर्णांक- 35+15=50 **Course Id- 241/HIN/SE201**

पाठ्यक्रम के उद्देश्य:

1. हिंदी भाषा में रचनात्मक लेखन कौशल को विकसित करना।
2. छात्रों में रचनात्मकता और सोचने की क्षमता को बढ़ाना।
3. विभिन्न लेखन शैलियों का अध्ययन करना और उन्हें समझना।
4. भाषा के साथ खेलने और विभिन्न विचारों को व्यक्त करने के लिए आत्म-विश्वास को बढ़ाना।

पाठ्यक्रम के परिणाम :

1. छात्र रचनात्मक अभिव्यक्ति में सुधार कर सकेंगे।
2. विभिन्न लेखन प्रक्रियाओं का प्रयोग कर सकेंगे, जैसे कि निबंध लेखन, कविता लेखन, और कहानी लेखन।
3. भाषा का सही उपयोग करके स्पष्ट और प्रभावशाली रचनाएँ लिख सकेंगे।
4. अपने रचनात्मक प्रकल्पों के माध्यम से अपने विचारों और भावनाओं को समझाएंगे।

पाठ्यक्रम:

इकाई 1 : * रचनात्मक लेखन : अवधारणा, स्वरूप एवं सिद्धांत

* भाव एवं विचार की रचना में रूपांतरण की प्रक्रिया

* विविध अभिव्यक्ति-क्षेत्र : साहित्य, पत्रकारिता, विज्ञापन

* लेखन के विविध रूप : मौखिक-लिखित, ग़द्य-पद्य ,नाट्य , पाठ्य

* मुद्रित इलेक्ट्रॉनिक आदि।

इकाई 2 : रचनात्मक लेखन : भाषा-संदर्भ

* अर्थ निर्मिति के आधार : शब्दार्थ-मीमांसा, शब्द के प्राक्-प्रयोग, नव्य-प्रयोग, शब्द की व्याकरणिक कोटि

* भाषा की भंगिमाएँ : औपचारिक-अनौपचारिक, मौखिक-लिखित मानक

इकाई 3 : विविध विधाओं की आधारभूत संरचनाओं का व्यवहारिक अध्ययन

* कविता : संवेदना, काव्यरूप, भाषा-सौष्ठव, छंद, लय, गति और तुक

* कथासाहित्य : वस्तु, पात्र, परिवेश एवं विमर्श

इकाई-4 : प्रिंट माध्यम : फीचर-लेखन साक्षात्कार , इलेक्ट्रॉनिक माध्यम : रेडियो, दूरदर्शन

निर्देश-1. पाठ्यक्रम में निर्धारित प्रत्येक खंड में कम से कम एक दीर्घ प्रश्न अवश्य पूछा जाएगा। पूछे गए प्रश्नों की संख्या चार होगी, जिसमें से परीक्षार्थी को कुल दो प्रश्न करने होंगे। प्रत्येक प्रश्न के लिए 8 अंक निर्धारित है। पूरा प्रश्न कुल 16 अंकों का होगा।

2. पूरे पाठ्यक्रम में से कुल छः लघुत्तरी प्रश्न पूछें जाएंगे, जिनमें से परीक्षार्थी को 150 शब्दों में किन्हीं चार प्रश्नों का उत्तर देना होगा। प्रत्येक प्रश्न तीन अंक का होगा। पूरा प्रश्न 12 अंकों का होगा

3. पूरे पाठ्यक्रम में से 7 वस्तुनिष्ठ अनिवार्य प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न एक-एक अंक का होगा।

सहायक ग्रंथ :

* साहित्य चिंतन : रचनात्मक आयाम - रघुवंश

* शैली - रामचंद्र मिश्र

* रचनात्मक लेखन- संपा. रमेश गौतम

* कला की जरूरत - अन्र्स्ट फिशर, अनुवाद - रमेश उपाध्याय

* साहित्य का सौंदर्यचिंतन - रवींद्रनाथ श्रीवास्तव

* सृजनशीलता और सौंदर्यबोध - निशा अग्रवाल

* समकालीन कविता में छंद - अज्ञेय

* कविता से साक्षात्कार - मलयज

* कविता क्या है- विश्वनाथ प्रसाद तिवारी

* एक कवि की नोटबुक - राजेश जोशी

* हिंदी साहित्य का छंद-विवेचन - गौरीशंकर मिश्र द्विजेंद्र

* अलंकार-धारणा : विकास और विश्लेषण - शोभाकांत मिश्र

* उपन्यास की संरचना- गोपाल राय

* उपन्यास सृजन की समस्याएँ - शमशेरसिंह नरूला

* हिंदी कहानी का शैली विज्ञान - वैकुंठनाथ ठाकुर

Skill Enhancement Course

ZOOLOGY: SEMESTER-II								
CourseType	**Course Code**	**Name of theCourse**	**Credit**	**Contact Hours/Week**	**Internal Assessment marks**	**End Term Marks**	**Max. Marks**	**Exam Duration**
SEC-01 **2 credit**	**241/ZOO/SE201**	**Economic Zoology**	**1**	**1**	**5**	**20**	**25**	**3 hrs.**
		Practical	**1**	**2**	**5**	**20**	**25**	

Course Learning Outcomes (CLO)

1. Students will understand the economic importance of various animals and their roles in agriculture, medicine, and industry.
2. Students will gain knowledge about the management and sustainable utilization of economically significant animal resources.
3. Students will be able to identify and address the challenges related to pest control, animal husbandry, and aquaculture practices.
4. Students will develop skills in the conservation of economically valuable species and the assessment of their ecological impacts.

Instructions for Paper-Setter

1. Five questions will be set in all. All questions will carry equal marks.
2. Question No. 1, which will be short answer type covering the entire syllabus, will be compulsory. The remaining four questions will be set unitwise selecting two questions from each Unit . The candidate will be required to attempt question No. 1 and two more questions selecting one question from each unit.

UNIT	TOPICS	CONTACT HOURS
I	Definition and scope of economic zoology, importance of animals in agriculture, medicine, and industry, Historical developments and contributions of eminent zoologists, Impact of zoological research on economic development. Economic status and products of poultry keeping and dairy industry in Haryana	8
II	Role of insects in pollination and pest control, impact of parasitic invertebrates on human and animal health, utilization of mollusks, crustaceans, and other invertebrates in industries, apiculture, sericulture, and lac culture	7
Practical	1. Techniques for breeding and managing livestocks 2. Rearing insects for food, feed or other products 3. Identification and management of economically important insects 4. Testing and quality control of animal products 5. Analysis of nutritional value and safety 6. Market analysis and product development	30

Learning Resources

1. Jordan, E.L. & Verma, P.S. (2018). Invertebrate Zoology. S. Chand Publishing (New Delhi), pp. 1200.
2. Shukla, G.S. & Upadhyay, V.B. (2010). Economic Zoology. Rastogi Publications (Meerut), pp. 600.
3. Srivastava, R.P. & Singh, R.P. (2002). An Introduction to Economic Zoology. Anmol Publications (New Delhi), pp. 500.
4. Kotpal, R.L. (2019). Modern Textbook of Zoology: Invertebrates. Rastogi Publications (Meerut), pp. 900.
5. Atwal, A.S. & Dhaliwal, G.S. (2005). Agricultural Pests of South Asia and Their Management. Kalyani Publishers (Ludhiana), pp. 487.

Skill Enhancement Course

BOTANY: SEMESTER-II								
CourseType	**Course Code**	**Name of theCourse**	**Credit**	**Contact Hours/Week**	**Internal Assessment marks**	**End Term Marks**	**Max. Marks**	**Exam Duration**
SEC-01 **2 credit**	**241/BOT/SEC201**	**Genomics**	**2**	**2**	**15**	**35**	**50**	**3 hrs.**

Course Learning Outcomes (CLO)

1. The students get acquainted about the basic principles of DNA sequencing and evolution of DNA sequencing techniques.
2. Help the students to understand methods/techniques employed in proteome and genome analysis.
3. This course will enable the students to learn about the various databases utilize for the storage and analysis of proteome/genome information.
4. The students will learn about the various computational tools used for analysis of genome sequence data.

Instructions for Paper-Setter

1. Nine questions will be set in all. All questions will carry equal marks.
2. Question No. 1, which will be short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more questions selecting one question from each unit.

UNIT	TOPICS	CONTACT HOURS
I	**Genome**: Completely sequenced prokaryotic and eukaryotic genomes; Mitochondrial and Chloroplast genomes. **Mapping of Genome**: Genetic mapping- using DNA markers and Linkage analysis; Physical mapping- restriction mapping, Fluorescent *in-situ* hybridization and Sequence Tagged Sites (STSs) mapping.	8
II	**Genome sequencing**: Chain termination and chemical degradation methods; Next generation sequencing (NGS)- Human Genome Project. **Understanding a Genome Sequence**: Gene location using 1.) ORF scanning, Automatic annotation, Homology searches and comparative genomics. 2.) Experimental techniques- northern hybridization, cDNA sequencing and RACE.	8
III	**Identification of a Gene Function**: Using computer analysis; Experimental analysis- gene inactivation and overexpression; Directed mutagenePsis; Reporter genes and Immunocytochemistry. **Analysis of the Transcriptome**: Expressed Sequence Tags (ESTs); Serial analysis of gene expression (SAGE); Differential Display (DD); Representational Difference Analysis (RDA) and DNA Microarrays. **Proteome Analysis:** Using 2-D; Protein identification; Protein-DNA and Protein- Protein interactions and Biochips.	7
IV	**Biological Databases**: Introduction; Primary and Specialized Databases; Database Scheme; Database Annotation; Retrieval System; Nucleotide Databases; Protein Databases; Genomic Databases and Resources; Gene Databases and Resources; Transcriptome Databases; Mutation Databases; Mitochondrial Databases and Resources.	7

Learning Resources

1. Birren B, Green ED, Klapholz S, Myers RM and Roskams J (1997) Genome Analysis, CSHL Press.
2. Brown TA (1999) Genomes. John Wiley & Sons (Asia) Pvt. Ltd., Singapore.
3. Brown TA (2002) Genomes 2, Wiley-Liss, New York
4. Brown TA (2007) Genomes 3, Garland Science Publishing New York, London.
5. Chawla HS (2009) Introduction to Plant Biotechnology (3rd Ed.). Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.
6. Dale JW, Schantz MV and Plant N (2012) From Genes to Genomes (3rd Ed.), John Wiley and Sons, Ltd. UK.
7. Dawson, MT, Powell R and L Gannon F (1996) Gene Technology, BIOS Sci. Pub. Ltd., Oxford, UK. DNA Amplification, Stockton Press, New York, USA.

8. Glick B and Pasternak JJ (2003), Molecular Biotechnology (3rd Ed), ASM Press, Washington.
9. Hartl DL and Ruvolo M (2011) Genetics- Analysis of Genes and Genomes (8th Ed.), Jones and Bartlett Publishers, Inc., USA.
10. Hunt SP and Livesey FJ (2000) Functional Genomics, Oxford University Press, New York. London.
11. Lewin B (2005) Genes VIII, Oxford University Press, Oxford, UK

PROGRAMMING IN PYTHON

Semester	2			
Course code	SEC-01			
Category	Skill Enhancement Course			
Course title	Programming in Python			
Course ID	241/CS/SE201			
Scheme and Credits	L	T	P	Credits
	2	0	0	2
Theory Internal	25 marks			
Theory External	50 marks			
Total	75 marks			
Duration of Exam	3 hrs			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no.2 to 9 will be of 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE OUTCOMES:

At the end of this course, students will demonstrate the ability to

CO1: Understand Python syntax and semantics and be fluent in the use of Python flow control and Functions

CO2: Develop, run and manipulate Python programs using Core data structures like Lists, Dictionaries, and use of Strings Handling methods.

CO3: Develop, run and manipulate Python programs using File Operations and searching pattern using regular expressions.

CO4: Interpret the concepts of object-oriented programming using Python

CO5: Determine the need for scraping websites and working with CSV, JSON and other file formats.

UNIT - I

Basic Introduction: Origin, Need of Python Programming, Features, program structure, identifiers, reserved words, escape sequences, IDLE-Python Interpreter

Python Programming Introduction: Variables and assignment statements, data types,

Operators: Assignment, Unary, Binary, Arithmetic, Relational, Logical, Bitwise Operator and membership operator

Control Structures: if-conditional statements, if –else condition, if-elif-else condition, nested if-elif-else condition, Iteration (for Loop and while loop), Nested Loops, break and continue statement.

Strings: Slicing, Membership, Built in functions (count, find, capitalize, title, lower, upper and swap case, replace, join, isspace (), isdigit(), split(), startswith(), endswith()).

UNIT - II

Mutable and Immutable objects: List: creating, initializing, accessing, slicing, and traversing List. List operations: length, concatenation, repetition, in, not in, max, min, sum, all, any. List methods: append, extend, count, remove, index, pop, insert, sort, reverse.

Tuples: creating tuples, Tuple operations: length, concatenation, repetition, membership, maximum, minimum, tuple methods: count, index.

Dictionary: creating, accessing values, adding, modifying and deleting items in dictionary, Dictionary methods: len, str, clear, copy, get, update, copy. Difference between list and dictionary

UNIT - III

Concept of Functions: Functions: Defining, Calling and Types of Functions, Arguments and Return Values, Formal vs. Actual Arguments, Scope and Lifetime, Keyword Arguments, Default Arguments, Recursion.

Modules: importing Modules, Math and Random Module, creating your own modules, and concept of Packages

UNIT - IV

NumPy Library: introduction to NumPy, Creation of One-Dimensional Arrays, Re-shaping of an Array, Element-wise Operations, Aggregate Operations, Array indexing, Array Slicing, insert Row/Columns, Append Row/Columns, Array Manipulation Operations.

Introduction to matplotlib: Bar Graphs, pie charts

File handling: Types of Files (Text file, Binary Files, CSV file), Creation, writing, appending, Insertion, deletion, updating, modification of Data in into the files.

BOOKS:

1. Programming in Python 3: A Complete Introduction to the Python Language (2nd Edition), Mark Summerfield.

2. Python Programming: A Modular Approach by Taneja Sheetal, Kumar Naveen, Eleventh Impression, Pearson India Education Services Pvt. Ltd.
3. Agile tools for real world data: Python for Data Analysis by Wes McKinney, O'Reilly
4. Let Us Python 2Nd Ed: Python Is Future, Embrace It Fast (Second Edition): Yashvant Kanetkar.
5. Programming Python, 4th Edition by Mark Lutz Released December 2010 Publisher(s): O'Reilly Media, Inc.
6. Python: The Complete Reference by Martin Brown.

Course code	SEC-01				
Category	Value-added Course				
Course title	Social Media Marketing				
Course ID	241/DESID/SE201				
Scheme and Credits	L	T	P	Credits	
	2	0	0	2	
Class work	15 Marks				
Exam	35 Marks				
Total	50 Marks				
Duration of Exam	3 Hours				

COURSE OBJECTIVES

The course outcomes for Social Media Marketing in Interior Design include: developing a comprehensive understanding of social media platforms and their applications in interior design, creating effective social media content that showcases interior design projects and services, designing and implementing a social media marketing strategy that targets specific audiences and increases brand awareness, analyzing and interpreting social media metrics to measure campaign success, utilizing social media to build and engage with a community of potential clients and industry professionals, staying up-to-date with the latest social media trends and best practices in interior design, and integrating social media marketing into overall business goals and objectives to enhance the interior design practice. By achieving these outcomes, students will be able to effectively utilize social media marketing to promote their interior design services, build their personal brand, and drive business success.

UNIT-1

Social Media Foundations

- Overview of social media platforms (Instagram, Facebook, Twitter, Pinterest)
- Setting up and optimizing profiles for interior design businesses
- Understanding social media algorithms and how they impact content visibility
- Creating a social media content calendar

UNIT-2

Content Creation and Curation

- Developing a content strategy for interior design businesses
- Creating engaging content types (images, videos, stories, reels)
- Curating and sharing user-generated content and industry news
- Utilizing hashtags and tagging relevant accounts

UNIT-3

Campaign Development and Analysis

- Designing and implementing social media marketing campaigns

- Setting goals and objectives for campaigns
- Analyzing and interpreting social media metrics (engagement, reach, clicks)
- Utilizing social media advertising options (paid promotions, sponsored content)

COURSE OUTCOMES:

CO1	Students will be able to develop a comprehensive social media marketing strategy that effectively promotes their interior design services and builds their personal brand.
CO2	Students will demonstrate the ability to create engaging and relevant content for various social media platforms, showcasing their interior design work and expertise.
CO3	Students will analyze and interpret social media metrics to measure the success of their marketing efforts, making data-driven decisions to optimize their strategy and improve their online presence.

Suggested Text Books:

1. "Social Media Marketing: A Guide for Interior Designers" *by Lori Dennis and Kimberly Seldon (2020)*
2. "Marketing for Interior Designers: A Guide to Getting and Keeping Clients" *by Debbie Travis (2018)*
3. "Designing Your Social Media Strategy: A Guide for Creative Professionals" *by Rachel C. Lewis (2022)*

Suggested Reference Books

1. "The Interior Design Business Handbook" by Mary V. Knackstedt (2019) - A comprehensive guide to running a successful interior design business, including social media marketing strategies.
2. "Social Media for Interior Designers: A Guide to Building Your Brand and Finding Clients" by Darci Hetherington (2020) - A practical guide to social media marketing specifically for interior designers.
3. "Visual Merchandising and Display: A Guide for Interior Designers" by Ruth L. Schoenmeyer (2018) - A book that focuses on visual merchandising and display, which can be applied to social media marketing and visual content creation for interior designers.

***Additional references/ reading material could be suggested by the subject faculty**

P**roduction and Operations Management**

241/MBA/SE201

Credits: 2

External Marks: 40 (20TE+20PE)

Internal Marks: 10 (5TI+5PI)

Type of Course: Skill Enhancement Course

Course Objectives:

This course enables students with the basic aspect of production management through various operational aspects of production management. Various important production management techniques will be covered with different problem solving methodologies. The aim of this course is to develop the understanding of the strategic and operational issues in the operational/ manufacturing environment of any organization and the various decisions involved in the operational activities and the methods by which best possible alternative decisions can be taken.

Course Outcomes:

On the completion of this course the student will be able to:

CO1: Develop knowledge and understanding of operations management principles and practices and their influence on business decisions.
CO2: Apply the theoretical knowledge of production & operations processes for effective supply chain management globally.
CO3: Analyze the knowledge of the production and operations techniques in achieving the strategic organizational goals.

CO4: Evaluate the Production Manager's role in management of quality, reliability and maintainability for TQM.

Detailed Syllabus:
UNIT-I
Introduction to Production & Operation Management: System and function view of organizations, scope, evolution and future of Production & Operations Management. Process design; different types of processes, process classification, process selection. Product design; types of products and designing, evaluation of design.

UNIT-II

Facility location: Location Strategy and its Importance; Factors influencing Plant Location; Globalization; Location Selection Models. Plant Layout: Different types of layout, Aggregate Production Planning (APP): Objective, strategies and cost of APP, Inventory Management.

UNIT- III

Operations scheduling: Definition, Objectives, Types, Sequencing (n-jobs on m machine), Queuing systems (Waiting Line Analysis), Line Balancing (theoretical concept only), Project management; Project scheduling by using network PERT/CPM, (Theory and numerical)

UNIT- IV

Quality management: Definition, experts' views on quality, Dimensions of quality, Cost of quality, Total quality management (TQM), Six sigma, ISO 9000 and other ISO series, Lean and Just in Time production system , Industrial safety, Quality Circle (theory only).

SUGGESTED READINGS:

1. Production and Operation Management by Kanishka Bedi (Oxford Publication).
2. Production and Operations Management by S. A. Chunawala Dr. R. Patel (Himalaya Publication).
3. Modern Production and Operations Management by Elwood S. Buffa and Rakesh K. Sarin (Wiley Publication).
4. Operations Management by Heizer, Jay and Render, Barry (Pearson Publication).

Mapping Matrix of Course: 24MGSEC1

Table 1: CO-PO & CO-PSO Matrix for the Course 24MGSEC1: Production and Operations Management

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2
CO1	3	2	1	2	2	3	1	2	3	2
CO2	3	2	2	3	2	2	2	2	2	2
CO3	2	3	1	2	3	2	2	2	2	2
CO4	2	2	2	2	2	3	2	3	2	3
Average	2.5	2.25	1.5	2.25	2.25	2.5	1.75	2.25	2.25	2.25

Course code	SEC-1			
Category	Skill Enhancement Course			
Course title	**Problem solving and python programming**			
Course ID	241/MCA/SE201			
Scheme and Credits	L	T	P	Credits
	1	-	2	2
Theory Internal	05			
Theory External	20			
Practical Internal	05			
Practical External	20			
Total	50			
Duration of Exam	3 hrs			

***Note**: The examiner will set nine questions in total. Question one will be compulsory. Question one will have seven parts of 2 marks each from all units, and the remaining eight questions of 14 marks each to be set by taking two questions from each unit. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

Course Outcomes:

CO1: Develop algorithmic solutions to simple computational problems.

CO2: Develop and execute simple Python programs.

CO3: Write simple Python programs using conditionals and looping for solving problems.

CO4: Decompose a Python program into functions.

CO5: Represent compound data using Python lists, tuples, dictionaries etc.

UNIT I

Fundamentals of Computing – Identification of Computational Problems -Algorithms, building blocks of algorithms (statements, state, control flow, functions), notation (pseudo code, flow chart, programming language), algorithmic problem solving, simple strategies for developing algorithms (iteration, recursion). Illustrative problems: find minimum in a list, insert a card in a list of sorted cards, guess an integer number in a range, Towers of Hanoi.

UNIT II

Python interpreter and interactive mode, debugging; values and types: int, float, boolean, string, and list; variables, expressions, statements, tuple assignment, precedence of operators, comments; Illustrative programs: exchange the values of two variables, circulate the values of n variables, distance between two points.

UNIT III

Conditionals: Boolean values and operators, conditional (if), alternative (if-else), chained conditional (if-elif-else); Iteration: state, while, for, break, continue, pass; Fruitful functions: return values,parameters, local and global scope, function composition, recursion; Strings: string slices, immutability, string functions andmethods, string module; Lists as arrays. Illustrative programs: square root, gcd, exponentiation, sum an array of numbers, linear search, binary search.

UNIT IV

Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning lists, list parameters; Tuples: tuple assignment, tuple as return value; Dictionaries: operations and methods;advanced list processing – list comprehension; Illustrative programs: simple sorting, histogram, Students marks statement, Retail bill preparation. Files and exception: text files, reading and writing files, format operator; command line arguments, errors and exceptions, handling exceptions, modules, packages; Illustrative programs: word count,copy file, Voter's age validation, Marks range validation

Textbooks&ReferenceBooks:

1. Paul Deitel and Harvey Deitel, "Python for Programrs", Pearson Education, 1st Edition, 2021.
2. G Venkatesh and Madhavan Mukund, "Computational Thinking: A Primer for Programrs and Data Scientists", 1st Edition, Notion Press, 2021.
3. John V Guttag, "Introduction to Computation and Programming Using Python: With Applications to Computational Modeling and Understanding Data'', Third Edition, MIT Press
4. Eric Matthes, "Python Crash Course, A Hands – on Project Based Introduction to Programming", 2nd Edition, No Starch Press, 2019.
5. Martin C. Brown, "Python: The Complete Reference", 4th Edition, Mc-Graw Hill, 2018.

Problem solving and python programming Lab

List of Experiments

1. Compute the gcd of two numbers.
2. Find the square root of a number (newton's method)
3. Exponentiation (power of a number)
4. Find the maximum of a list of numbers
5. Linear search binary search
6. Selection sort insertion sort
7. Merge sort
8. First n prime numbers
9. Multiply matrices
10. Programs that take command line arguments (word count)

PYTHON PROGRAMMING

Semester	2			
Course code	SEC-01			
Category	Skill Enhancement Course			
Course title	Python Programming			
Course ID	241/CSAI/SE201			
Scheme and Credits	L	T	P	Credits
	2	0	0	2
Theory Internal	15 marks			
Theory External	35 marks			
Practical Internal	-			
Practical External	-			
Total	50 marks			
Duration of Exam	3 hrs			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no.2 to 9 will be of 20% of total marks of Question paper . The students have to attempt five questions in total, the first being compulsory and selecting one from each unit..*

COURSE OUTCOMES:

At the end of this course, students will demonstrate the ability to

1. Understand Python syntax and semantics and be fluent in the use of Python flow control and Functions
2. Develop, run and manipulate Python programs using Core data structures like Lists, Dictionaries, and use of Strings Handling methods.
3. Develop, run and manipulate Python programs using File Operations and searching pattern using regular expressions.
4. Interpret the concepts of object oriented programming using Python
5. Determine the need for scraping websites and working with CSV, JSON and other file formats .

UNIT - I

Basic Introduction: Origin, Need of Python Programming, Features, program structure,

identifiers, reserved words, escape sequences, IDLE-Python Interpreter

Python Programming Introduction: Variables and assignment statements, data types, **Operators**: Assignment, Unary, Binary, Arithmetic, Relational, Logical, Bitwise Operator and membership operator

Control Structures: if-conditional statements, if –else condition, if-elif-else condition, nested if-elif-else condition, Iteration (for Loop and while loop), Nested Loops, break and continue statement.

Strings: Slicing, Membership, Built in functions (count, find, capitalize, title, lower, upper and swap case, replace, join, isspace (), isdigit(), split(), startswith(), endswith()).

UNIT – II

Mutable and Immutable objects: List: creating, initializing, accessing, slicing, and traversing List. List operations: length, concatenation, repetition, in, not in, max, min, sum, all, any. List methods: append, extend, count, remove, index, pop, insert, sort, reverse.

Tuples: creating tuples, Tuple operations: length, concatenation, repetition, membership, maximum, minimum, tuple methods: count, index.

Dictionary: creating, accessing values, adding, modifying and deleting items in dictionary, Dictionary methods: len, str, clear, copy, get, update, copy. Difference between list and dictionary

.

UNIT – III

Concept of Functions: Functions: Defining, Calling and Types of Functions, Arguments and Return Values, Formal vs. Actual Arguments, Scope and Lifetime, Keyword Arguments, Default Arguments, Recursion.

Modules: importing Modules, Math and Random Module, creating your own modules, and concept of Packages

UNIT - IV

NumPy Library: introduction to NumPy, Creation of One-Dimensional Arrays, Re-shaping of an Array, Element-wise Operations, Aggregate Operations, Array indexing, Array Slicing, insert Row/Columns, Append Row/Columns, Array Manipulation Operations.

Introduction to matplotlib: Bar Graphs, pie charts

File handling: Types of Files (Text file, Binary Files, CSV file), Creation, writing, appending, Insertion, deletion, updating, modification of Data in into the files.

TEXT AND REFERENCE BOOKS:

1. Programming in Python 3: A Complete Introduction to the Python Language (2nd Edition), Mark Summerfield.
2. Python Programming: A Modular Approach by Taneja Sheetal, Kumar Naveen, Eleventh Impression, Pearson India Education Services Pvt. Ltd.
3. Agile tools for real world data: Python for Data Analysis by Wes McKinney, O'Reilly
4. Let Us Python 2Nd Ed: Python Is Future, Embrace It Fast (Second Edition): Yashvant Kanetkar.
5. Programming Python, 4th Edition by Mark Lutz Released December 2010 Publisher(s): O'Reilly Media, Inc.
6. Python: The Complete Reference by Martin Brown.

Semester 3

Basics of Statistics usingSPSS

SEC-2 Basics of Statistics usingSPSS (241/MPSY/SE 301)
Credits:2 (Hrs./Week: 2)

Maximum Marks: 50
Theory Examination: 20
Internal Assessment: 05
Practical Examination: 20
Practical Assessment: 05
Time: 2 hrs.

Note: The students will be required to attempt three questions in all. Question No. I will be compulsory comprising of 8 short answer type questions of 3 marks each and will cover the entire syllabus. The answer should be in 100-200 words. The students are required to attempt five short answer type questions out of 8,i.e., 5X 3 = 15 marks. In addition to it, Question Nos. II to V will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 10 marks each i.e. 2 X 10 = 20 marks thus making it the total weight age to 35 marks. Two questions to be attempted. One from each unit.

Course Outcomes:-

- Students will demonstrate a comprehensive understanding of the introduction of SPSS along with understanding of basic statistics and terminologies.
- Students will be able to apply skills of SPSS in real world settings, demonstrating the practical application of SPSS.
- Students will develop advanced data analysis skills, encompassing computation of parametric statistics and non-parametric statistics.

Unit-1

Introduction to statistical analysis using IBM SPSS, data entry, data coding, computation of descriptive statistics, computation of normal probability curve, computation of graph,
computation of parametric statistics, computation of non-parametric statistics.

Unit-2

Statistics: Descriptive v/s Inferential; Descriptive: mean, median, mode, basics of NPC, skewness, kurtosis. Inferential statistics: Correlation and its types.

Suggested readings:

1. Field, Andy. “Discovering statistics using SPSS”. 3rd Ed,Sage Publishers,2009.

2. Pallant, Julie. “SPSS Survival Manual”.4th ed, McGraw-Hill,2010.
3. Cronk, Brian. “How to use SPSS: A Step-by-step Guide to analysis and interpretation.”5thEd.
4. HOW TO USE SPSS ® A Step-By-Step Guide to Analysis and Interpretation, Brian C. Cronk, Tenth edition published in 2018 by Routledge.

Master of Social Work
Semester -

Master of Social Work
Semester - II
Development Communication

SEC-02
Credits: 2 (Hrs./Week: 2)

Maximum Marks: 50
Theory Examination: 35
Internal Assessment: 15

Note: The students will be required to attempt three questions in all. Question No. I will be compulsory comprising of 8 short answer type questions of 3 marks each and will cover the entire syllabus. The answer should be in 100-200 words.The students are required to attempt five short answer type questions out of 8,i.e., 5X 3 = 15 marks. In addition to it, Question Nos. II to V will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 10 marks each i.e. 2 X 10 = 20 marks thus making it the total weight age to 35 marks. Two questions to be attempted. One from each unit.

Course Outcomes:

- Describe key theories and concepts in development communication.
- Apply communication strategies to address development challenges. • Design and implement development communication interventions.

Unit-I
Introduction to Development Communication

- Development: Key Concepts and Theories
- Mass Media: Print Media, Audio – Visual Media, Electronic Media
- Role of Media in Development

Unit-II

Skills in Development Communication-I

- Group Media
- Folk Media

Unit-III

Skills in Development Communication-II

- Media Advocacy Campaign: Strategies, Planning and Challenges
- Case studies of successful media advocacy campaigns

Unit-IV
Social Marketing, Public Opinion and Public Relations

- Principles of Social Marketing for the Development Sector
- Designing and evaluating social marketing campaign

Suggested Readings:

Tufte, T., Wilkins, K. G., & Obregon, R. (Eds.) (2014). The Handbook of Development Communication and Social Change. Wiley-Blackwell. Global Handbooks in Media and Communication Research.

Carragee, K. M. (2024). *Communication activism research for social justice: Engaged research, collective action, and political change* (1st ed.). Routledge.
Singh, J. P. (2019). Development Communication in India: State, Society, and Market. Routledge.
Srivastava, K. (2016). Development Communication in India: A Study of Media Strategies and Campaigns. Oxford University Press.
Mishra, A. (Ed.). (2017). Communication for Development and Social Change: New Millennium Challenges and Opportunities**.** Concept Publishing Company.
Sahay, R. K., & Malla, D. S. (Eds.). (2019). Development Communication in India: Perspectives and Practices. SAGE Publications.
Manchanda, R., & Jha, A. K. (Eds.). (2014**).** Development Communication in India: A New Paradigm. Aakar Books.
Reddy, B. N. (2018**).** Development Communication in India**.** APH Publishing Corporation.

Semester 3

SEC-2 SPOKEN ENGLISH

Maximum Marks: 50

Course Objectives

CO	Description
CO-1	Improve pronunciation to enhance clarity and understanding in spoken English.
CO-2	Enrich vocabulary to express ideas more precisely and articulate nuanced thoughts in conversations.
CO-3	Foster cultural competence in spoken English, including an understanding of idiomatic expressions, cultural nuances, and appropriate language use in various contexts.

Course Outcomes

On completing the paper **Spoken English** the students shall be able to realize following programme outcomes:

CO	Description
CO-1	Increased Fluency in English Language.
CO-2	Increased confidence and stage daring.

CO-3	Develop personality and communication Skills.

About the Course:

This course is conducted for developing the communication skills of the students. It will be useful for fluency in English Language. It will be beneficial for the students in this scientific technological and modern society. It will increase their confidence and enhance their chance to get employment.

Unit 1: **Pronunciation and Developing Vocabulary**:

1. The basic sounds, Letter and sounds, Sound and sound groups, Words and utterances, Consonants and vowels, Word groups, stressed, unstressed, Intonation.

2. Word formation: Affixation, compounding,
   Blending, Acronyms.
3. Word Games

4. Word Families: based on nouns, based on verbs and based on adjectives.
5. Synonyms, hyponyms, antonyms.

6. Homonyms, homographs, homophones.

7. One word for many.

8. Idioms and Proverbs

9. Phrasal Verbs.
10. British and American English

11. Current words

12. Words often confused.

Unit 3 Conversation:

(a) Greeting/Manners

- Introducing someone/yourself

- Invitation.
- Thanking.
- Apologizing.
- Complementing.
- Asking and giving directions.
- Telephone Conversation.

(b) Role playing.

i. At the post office.
ii. At the Bank.
iii. Helping friends.
iv. Making inquiries about journey.
v. Casual Meetings.
vi. At social gatherings.
vii. Friends talk about their ambitions.
viii. The Importance of spoken English.

(c) Group discussion

(d) Mock Interview/Job Interviews.

(e) Speeches.

(f) Methodology:

1. Lectures. 2. Group Discussion.

3. Role playing. 4. Audio Sessions.

Instructions to the Paper setter and the students:

All questions are compulsory to attempt.

Unit 1

Question no. 1 will be from unit 1 with internal choice. (10 marks)

Unit 2

Question no. 2 will be from unit 2 with internal choice. (10 marks)

SEC-2

Naama Nigari aur Idarat Max Marks:35

نامہ نگاری اور ادارت

Objective:

اس پرچے کا مقصد یہ ہے کہ:

۱۔طلباء نامہ نگاری اور ادارت کا علم حاصل کر کے اپنی زندگی کو بہتر بنا سکیں۔

۲۔طلباء نامہ نگاری اور ادارت کا علم حاصل کر کے اسے معاش کا ذریعہ بھی بنا سکیں۔

۳۔خبر نویسی، ریڈیو وغیرہ میں طبع آزمائی کر سکیں۔

Course Outcome:

اس کورس کی مکمل تدریس کے بعد طلباہ اس قابل ہو جائیں گے کہ:

۱۔نامہ نگاری کی زبان، اصول و تقاضوں سے واقف ہو جائیں گے۔

۲۔ادارت کے اصول اور ذمہ داریاں سمجھ سکیں گے۔

۳۔مدیر اور سب ایڈیٹر کی ذمہ داروں کو نبھانے کے قابل ہو جائیں گے۔

۴۔خبر، اسٹوری انٹرویو کی پیشکش کا طریقہ سیکھ جائیں گے۔

unit-1

نامہ نگاری کی زبان، اصول اور تقاضے

unit-2

ادارت کے اصول اور ذمہ داریاں

unit-3

مدیر اور سب ایڈیٹر کی ذمہ داریاں

unit-4

خبر، اسٹوری، انٹرویو کی پیشکش کا طریقہ

کتب برائے مطالعہ

۱۔احمد نسیم سندیلوی، خبر نگاری، مقتدہ قومی زبان، اسلام اباد

۲۔امداد احمد میاں، خبر نویسی اور ترجمہ، مقتدہ قومی زبان، اسلام اباد

۳۔سید اقبال قادری، رہبر اخبار نویسی، ترقی اردو بیورو، نئی دہلی
۴۔سجاد حیدر: ریڈیائی صحافت، مقتدہ قومی زبان، اسلام اباد
۵۔شافع قدوائی: خبر نگاری، مصنف، علی گڈھ
۶۔مسکین علی حجازی: فن ادارت، اردو سائنس بورڈ، لاہور

Instructions to the Paper-Setter and Students:

All questions are compulsory to attempt.

Unit-1 There will be two questions of which one is to be opted of 10 marks.

Unit-2 There will be two questions of which one is to be opted 10 marks.

Unit-3 There will be two questions of which one is to be opted 7 marks.

Unit-4 There will be two questions of which one is to be opted 8 marks.

Semester 3

SEC-2: Applied Political Science

241/PPAG/SE301	**Applied Political Science**
Semester 3	**Maximum Marks: 50**
Credits: 2 (Hrs./week:2)	**Theory Examination: 35**
Time: 3 hours	**Internal Assessment: 15**

Course Outcome:

Creative: Students will develop research questions, hypotheses, and conduct literature reviews for academic papers.

Apply: Students will apply proper referencing and writing techniques for book reviews.

Apply: Students will conduct field research using surveys, sampling, and interviews, while maintaining ethical standards.

Evaluate: Students will ensure research integrity by addressing ethics and plagiarism.

Note for External Examiner:

1. **Five Questions will be set in all and students will be required to attempt 3 questions.**
2. **Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).**
3. **For the remaining four questions, students will attempt 1 out of 2 questions from each of the two units (10 marks each).**

Unit I:

How to Write a Paper: Central Question, Secondary Questions, Hypothesis, Literature Review, Book

Review and Referencing

Unit II:

Field Research: Survey, Sampling and Interview, Ethics and Plagiarism.

Suggested Readings:

1. George, A. L., & Bennett, A. (2005). *Case Studies and Theory Development in the Social Sciences*. MIT Press.
2. Halperin, S., & Heath, O. (2012). *Political Research: Methods and Practical Skills*. Oxford University Press.
3. King, G., Keohane, R. O., & Verba, S. (1994). *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton University Press.
4. Lowndes, V., Marsh, D., & Stoker, G. (Eds.). (2018). *Theory and Methods in Political Science* (4th ed.). Palgrave.
5. Neuman, W. L. (1994). *Social Research Methods: Qualitative and Quantitative Approaches*. Pearsons.
6. Schatz, E. (Ed.). (2009). *Political Ethnography: What Immersion Contributes to the Study of Power*. University of Chicago Press.

7. Srivastava, V. K. (Ed.). (2005). *Methodology and Field Work: Oxford in India Readings*. Oxford University Press.

SEMESTER - 3

SEC-02 मौखिक भाषायी दक्षता

पूर्णांक- 35+15=50 **Course Id- 241/HIN/SE302**

पाठ्यक्रम के उद्देश्य:

भाषा की समझ विकसित करना: छात्रों में राजभाषा की गहन समझ विकसित करना ताकि वे सरकारी और प्रशासनिक कार्यों में इसका प्रभावी उपयोग कर सकें।

भाषायीदक्षता: विद्यार्थियों को राजभाषा में लिखने, पढ़ने, बोलने और सुनने की दक्षता प्रदान करना।

सांस्कृतिक जागरूकता: राजभाषा के माध्यम से सांस्कृतिक धरोहर और परंपराओं के प्रति जागरूकता बढ़ाना।

पाठ्यक्रम के परिणाम :

भाषा के शुद्ध उच्चारण, सामान्य लेखन, रचनात्मक लेखन और तकनीकी शब्दों से अवगत हो सकेंगे।

पाठ्यक्रम :

इकाई -1 भाषायी दक्षता के आयाम

भाषायी दक्षता से तात्पर्य

भाषायी दक्षता का महत्त्व

श्रवण और वाचन

पठन और लेखन

इकाई-2 : भाषायी दक्षता के कारक तत्त्व

भाषा-व्यवहार (भाषिक प्रयोग और शैली)

शब्द-सामर्थ्य - सामान्य एवं तकनीकी शब्द

सुनना और बोलाना- प्रभावी श्रवण के आयाम, शुद्ध उच्चारण, भाषण, एकालाप, वार्तालाप

पढ़ना और लिखना- स्वाध्याय और उद्देश्य-केन्द्रित पठन, सामान्य लेखन और रचनात्मक लेखन

ईकाई-3 : भाषायी दक्षता का व्यावहारिक पक्ष

किसी एक विषय पर- भाषण, समूह चर्चा, वार्तालाप या टिप्पणी

किसी एक विषय का भाव-विस्तार या पल्लवन

द्रुतवाचन- किसी साहित्यिक कृति पर आधारित

निर्देश-1.पाठ्यक्रम में निर्धारित प्रत्येक खंड में कम से कम एक दीर्घ प्रश्न अवश्य पूछा जाएगा। पूछे गए प्रश्नों की संख्या चार होगी, जिसमें से परीक्षार्थी को कुल दो प्रश्न करने होंगे। प्रत्येक प्रश्न के लिए 8 अंक निर्धारित है। पूरा प्रश्न कुल 16 अंकों का होगा।

2.पूरे पाठ्यक्रम में से कुल छः लघुत्तरी प्रश्न पूछें जाएंगे, जिनमे से परीक्षार्थी को 150 शब्दों में किन्हीं चार प्रश्नों का उत्तर देना होगा। प्रत्येक प्रश्न तीन अंक का होगा। पूरा प्रश्न 12 अंकों का होगा।

3.पूरे पाठ्यक्रम में 7 से वस्तुनिष्ठ अनिवार्य प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न एक-एक अंक का होगा।

सहायक ग्रंथ-

कंप्यूटर एसिसटेड लैंग्वेज लर्निंग, मीडिया डिजाइन एंड एप्लीकेशंस- कीथ कैमेरॉन

भाषा शिक्षण- रवींद्रनाथ श्रीवास्तव

सृजनात्मक साहित्य- रवींन्द्रनाथ श्रीवास्तव

3.पूरे पाठ्यक्रम में 7 से वस्तुनिष्ठ अनिवार्य प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न एक-एक अंक का होगा।

ZOOLOGY: SEMESTER-III

CourseType	Course Code	Name of theCourse	Credit	Contact Hours/Week	Internal Assessment marks	End Term Marks	Max. Marks	Exam Duration
SEC-03 2 credit	241/ZOO/SE302	Medical Physiology	1	1	5	20	25	3 hrs.
		Practical	1	2	5	20	25	

Course Learning Outcomes (CLO)

1. Students will understand the concept of medical physiology
2. Students will gain knowledge about the composition and function of blood.
3. Students will be able to learn nervous system and special sense
4. Students will develop knowledge about homeostasis and feedback mechanisms

Instructions for Paper-Setter

1. Five questions will be set in all. All questions will carry equal marks.
2. Question No. 1, which will be short answer type covering the entire syllabus, will be compulsory. The remaining four questions will be set unitwise selecting two questions from each Unit . The candidate will be required to attempt question No. 1 and two more questions selecting one question from each unit.

UNIT	TOPICS	CONTACT HOURS
I	Introduction to physiology, Nerve muscle physiology, Composition and function of blood, physiology of gastrointestinal tract, Respiratory system	8
II	Physiology of cardiovascular system, Endocrine system, Reproductive system, Excretory system, Nervous system and special sense	7
Practical	**I) Haematology:** a) Compound microscope. b) Preparation of blood film. c) StainingwithLeishman's stain. d) Identification of blood cell. e) Differential count of WBC. f) Total count of WBC. g) Total count of RBC. h) Haemoglobin estimation. i) Total count of platelets. j) Blood grouping. k) Bleeding time and clotting time. I). Haemin crystal. m) Demonstration of: PCV, ESR, Osmotic fragility, Prothrombin time.	30

Learning Resources

1. Medical physiology ➔ A. C. Guyton
2. Review of medical physiology ➔ W. F. Ganong
3. Human physiology ➔ Vander, Sherman & Luciano

NUMERICAL ABILITY AND ENHANCEMENT SKILLS

Semester	3			
Course code	SEC-02			
Category	Skill Enhancement Course			
Course title	Numerical Ability & Enhancement Skills			
Course ID	241/CS/SE301			
Scheme and Credits	L	T	P	Credits
	2	0	0	2
Theory Internal	15 marks			
Theory External	35 marks			
Total	50 Marks			
Duration of Exam	3 hours			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no.2 to 9 will be of 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE OUTCOMES:

At the end of this course, students will demonstrate the ability to

CO1: Understand real number system, fundamental arithmetical operations, use of BODMAS rule and solve typical expressions accurately and fast

CO2: Acquire skill to identify types of given sequences/series and apply suitable method to find a particular term, sum of specific number of terms and practice this learning in real life mathematical problems.

CO3: To formulate equations for specific mathematical problem and making use of mathematical skills to solve that.

CO4: Have a deeper and comprehensive understanding of the basic concepts of Percentage, Profit & Loss, Alligation or mixture, Averages and acquire skill to use this knowledge in real life problems.

CO5: Attain cognitive and analytical skills to identify, analyze and generate solutions to realistic problems by exploring procedural knowledge associated with the problems. Have analytical skills to compare and recognize various geometrical figures available in surroundings with mathematical figures and determine areas and volumes of the same.

UNIT - I

Real number system, Operations on numbers, Tests for divisibility of natural numbers, Decimals, Fractions, Square roots, Cube roots, Surds and indices, Use of BODMAS.

UNIT – II

HCF, LCM of integers, Ratio and Proportion, Progressions: Arithmetic Progression, Geometric Progression, Harmonic Progression with their simple and basic practical applications, Number series completion.

UNIT – III

Percentage, Profit & Loss, Alligation or mixture, Average, Average speed problems, Calendar.

UNIT - IV

Logarithms, Area of Quadrilaterals (Parallelogram, Square, Rectangle, Rhombus, Trapezium), Volume and surface area of Cube, Cuboid, Cylinder, Cone, Sphere and Hemisphere.

BOOKS:

1. R. S. Aggarwal (2022). Quantitative Aptitude. S Chand & Company Limited, New Delhi.
2. A. Guha (2020). Quantitative Aptitude (7 th Edition). Mc Graw Hill Publications.
3. V. Dyke, J. Rogers and H. Adams (2011). Fundamentals of Mathematics, Cengage Learning.
4. A.S. Tussy, R. D. Gustafson and D. Koenig (2010). Basic Mathematics for College Students. Brooks Cole.
5. C. C. Pinter (2014). A Book of Set Theory. Dover Publications.
6. G. Klambauer (1986). Aspects of calculus. Springer-Verlag.

Course code	SEC-02				
Category	Ability Enhancement Course				
Course title	Online MOOC course				
Course ID	241/DESID/SE201				
Scheme and Credits	L	T	P	Credits	
	2	0	0	2	
Class work	15 Marks				
Exam	35 Marks				
Total	50 Marks				
Duration of Exam	Hours				

COURSE OBJECTIVES

The course objective for the online MOOC (Massive Open Online Course) subject related to design in Interior Design is to provide students with a comprehensive understanding of the design process, from conceptualization to visualization, and equip them with the skills to create innovative, functional, and aesthetically pleasing designs that meet the needs of users, while also exploring the latest trends, technologies, and sustainable practices in interior design, and fostering a community of learners who can share knowledge, collaborate on projects, and gain valuable feedback from peers and industry experts, with the ultimate goal of enabling students to design interior spaces that enhance the quality of life for users. By the end of the course, students will be able to demonstrate a thorough understanding of the design process, apply design principles and elements to create effective designs, and utilize industry-standard software and tools to communicate their design vision.

UNIT-1

- Introduction to design principles and elements
- Color theory and lighting design
- Textiles and materials for interior design
- Designing for human behavior and experience

UNIT-2

- Space planning and layout design
- Furniture design and specification
- Graphic communication and presentation techniques
- Design software and visualization tools (e.g. SketchUp, Revit, Adobe Creative Suite)

UNIT-3

- Integrating design elements and principles in a project
- Designing for sustainability and accessibility
- Exploring emerging trends and technologies in interior design
- Final project presentation and peer feedback

COURSE OUTCOMES:

CO1	Students will demonstrate a thorough understanding of design principles, elements, and theories, and apply them to create functional, aesthetically pleasing, and sustainable interior designs.
CO2	Students will develop the skills to communicate their design vision effectively, using industry-standard software and visualization tools, and present their designs in a clear and compelling manner.
CO3	Students will design interior spaces that integrate user needs, sustainability, and technological innovation, and demonstrate a commitment to lifelong learning and professional development in the field of interior design.

Suggested Reference Links:

Here are some potential reference links for an online MOOC course subject related to design in Interior Design:

1. Coursera - "Introduction to Interior Design" *by University of Florida*
2. edX - "Interior Design" *by Autodesk*
3. Udemy - "Interior Design Masterclass" *by Dr. Sophia Lee*
4. LinkedIn Learning (formerly (link unavailable)) - "Interior Design Fundamentals" *by instructor Christine Baumann*
5. Skill share - "Interior Design 101" *by instructor Sarah Taylor*
6. YouTube - "Interior Design Channel" *by designer and educator, Megan Baker*
7. Interior Design Magazine - *online courses and webinars*
8. National Kitchen and Bath Association (NKBA) - *online courses and certifications*
9. American Society of Interior Designers (ASID) - *online courses and certifications*
10. Autodesk University - *online courses and certifications in design software (e.g. AutoCAD, Revit)*

These reference links provide a range of online resources, from university-level courses to industry-specific certifications, to support students' learning in interior design.

Course code	SEC-2			
Category	Skill Enhancement Course			
Course title	**Mobile Application Development**			
Course ID	241/MCA/SE301			
Scheme and Credits	L	T	P	Credits
	1	-	2	2
Theory Internal	05			
Theory External	20			
Practical Theory	05			
Practical External	20			
Total	50			
Duration of Exam	**3 hours**			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no. 2 to 9 will be 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE OUTCOMES:

CO1: Understand the basic concepts and functions of Mobile Application and Android Studio.

CO2: Describe the working and architecture of Android Operating System.

CO3: Design Android UI Layout and Describe activities.

CO4: Design and develop an application using Database.

UNIT I

Android Architecture: Introduction to Android, Features of Android, Android Architecture, Android and File Structure, Layouts – Linear, Relative, Grid and Table Layouts, Views and Resources, Activities and Intents, Activity Lifecycle and Saving State,

User Interface (UI) Components – Editable and non-editable Text Views, Buttons, Radio and Toggle Buttons, Checkboxes, Spinners, Dialog and pickers, List View, Spinner View.

UNIT II

Event Handling – Handling clicks or changes of various UI components.

Intent – Using intents to launch Activities, Explicitly starting new Activity, Implicit Intents, Passing data to Intents, Getting results from Activities, using Intent to dial a number or to send SMS.

UNIT III

Fragments – Creating fragments, Lifecycle of fragments, Fragment states, Adding fragments to Activity, adding, removing and replacing fragments with fragment transactions

Location and Mapping: Location based services, Mapping, Google Maps activity, Working with MapView and MapActivity; Playing and Recording of Audio and Video in application.

UNIT IV

Persisting Data to files: Saving to Internal Storage, Saving to External Storage

Introduction to SQLite database: creating and opening a database, creating tables, inserting retrieving and deleting data.

Application Signing, API keys for Google Maps, Publishing application to the Android Market.

Textbooks & References:

1. Zigurd Mednieks, Laird Dornin, G,Blake Meike and Masumi Nakamura, Programming Android, O'Reilly Publications.
2. Wei-Meng Lee, Beginning Android Application Development, Wiley India Ltd.
3. Burd, B. Android Application Development All-in-One for Dummies.
4. James C.S., Android Application development for Java Programr, CENGAGE Learning.
5. Pradeep Kothari, Android Application Development: Black Book, Wiley India Ltd.

Mobile Application Development Lab

List of Experiment

1. Installation of Android studio.
2. Development Of Hello World Application
3. Create an application that takes the name from a text box and shows hello message along with the name entered in text box, when the user clicks the OK button
4. Create a screen that has input boxes for User Name, Password, Address, Gender(radio buttons for male and female), Age (numeric), Date of Birth (Date Picket), State (Spinner) and a Submit button. On clicking the submit button, print all the data below the Submit Button (use any layout)
5. Design an android application Using different layouts
6. Design an android application to create page using Intent and one Button and pass the Values from one Activity to second Activity
7. Design an android application Send SMS using Intent
8. Create an android application using Fragments
9. Design an android application for menu.
10. Create a user registration application.

NUMERICAL ABILITY AND ENHANCEMENT SKILLS

Semester	3			
Course code	SEC-02			
Category	Skill Enhancement Course			
Course title	Numerical Ability and Enhancement Skills			
Course ID	241/CSAI/SE301			
Scheme and Credits	L	T	P	Credits
	2	0	0	2
Theory Internal	15 marks			
Theory External	35 marks			
Practical Internal	-			
Practical External	-			
Total	50 marks			
Duration of Exam	3 hrs			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no.2 to 9 will be of 20% of total marks of Question paper . The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE OUTCOMES:

1. Understand real number system, fundamental arithmetical operations, use of BODMAS rule and solve typical expressions accurately and fast
2. Acquire skill to identify types of given sequences/series and apply suitable method to find a particular term, sum of specific number of terms and practice this learning in real life mathematical problems.
3. To formulate equations for specific mathematical problem and making use of mathematical skills to solve that.
4. Have a deeper and comprehensive understanding of the basic concepts of Percentage, Profit & Loss, Alligation or mixture, Averages and acquire skill to use this knowledge in real life

problems.

5. Attain cognitive and analytical skills to identify, analyze and generate solutions to realistic problems by exploring procedural knowledge associated with the problems. Have analytical skills to compare and recognize various geometrical figures available in surroundings with mathematical figures and determine areas and volumes of the same.

UNIT - I

Real number system, Operations on numbers, Tests for divisibility of natural numbers, Decimals, Fractions, Square roots, Cube roots, Surds and indices, Use of BODMAS.

UNIT – II

HCF, LCM of integers, Ratio and Proportion, Progressions: Arithmetic Progression, Geometric Progression, Harmonic Progression with their simple and basic practical applications, Number series completion.

UNIT – III

Percentage, Profit & Loss, Alligation or mixture, Average, Average speed problems, Calendar.

UNIT - IV

Logarithms, Area of Quadrilaterals (Parallelogram, Square, Rectangle, Rhombus, Trapezium), Volume and surface area of Cube, Cuboid, Cylinder, Cone, Sphere and Hemisphere.

TEXT AND REFERENCE BOOKS:

1. R. S. Aggarwal (2022). Quantitative Aptitude. S Chand & Company Limited, New Delhi.
2. A. Guha (2020). Quantitative Aptitude (7^{th} Edition). Mc Graw Hill Publications.
3. V. Dyke, J. Rogers and H. Adams (2011). Fundamentals of Mathematics, Cengage Learning.
4. A.S. Tussy, R. D. Gustafson and D. Koenig (2010). Basic Mathematics for College Students. Brooks Cole.
5. C. C. Pinter (2014). A Book of Set Theory. Dover Publications.
6. G. Klambauer (1986). Aspects of calculus. Springer-Verlag.

Name of the subject: Entrepreneurship and Innovation Management	Maximum Theory Marks:75 (TE+TI+PE+PI=50+25+0+0)
Course ID: 241/COM/MD105	Time Allowed: 2 hours
Credits: L-T-P (2-1-0)	Course Type: Multidisciplinary Course

Instructions for Paper Setter: The question paper shall be divided into two sections. Section 'A' shall comprise five short answer type questions from the syllabus carrying two marks each, which shall be compulsory. The answer to each question should not exceed 100 words normally. Section 'B' shall comprise 8 questions (2 questions from each unit). All the questions need to be mapped with Course Outcomes (COs) and need to be specified in the question paper against each question. The students will be required to attempt four questions by selecting one question from each unit. All questions will carry equal marks.

Course Outcomes: After completion of the course, learners will be able to:
CO1: Understand the concepts of entrepreneurship and identify business opportunities.
CO2: Apply knowledge of various funding sources and supporting institutions for entrepreneurs.
CO3: Analyze the concepts of creativity and innovation, and their significance in business ventures.
CO4: Evaluate strategies for managing growth in ventures and assessing external resource availability.

Course Contents:

UNIT1: Entrepreneurship: Introduction, Meaning, Definition and Importance of Entrepreneurship, Characteristics of Successful Entrepreneurs, Factors affecting Entrepreneurship, Types of Entrepreneurs, Barriers to Entrepreneurship, Identification of Business Opportunities: Introduction, Business opportunities in India, Models for Opportunity Evaluation. Legal Considerations and Business Structure.	10 Lectures
UNIT 2: Institutions supporting Business opportunities: Central level institutions- National Board for micro, small & medium Enterprises (NBMSME), MSME-DO, National Small Industries Corporation. State level institutions- state Directorate Industries and commerce, District Industries Centers, state financial Corporations, State Industrial Development Corporation (SIDC), State Industrial Area Development Board (SIADB). Other Institutions - NABARD, Technical consultancy organization (TCO), Small Industries Development Bank of India (SIDBI), Export Promotion Councils, Non-governmental Organizations.	10 Lectures
UNIT3: Entrepreneur Mindset and Innovation. Innovation and creativity- meaning, Types of innovations, features and need, Creativity: need and significance, Creativity and Entrepreneurship, Steps in Creativity, Innovation and Inventions. Innovation and Entrepreneurship.	10 Lectures
UNIT4: Managing growing venture: Growth, objective and strategy. Managing growth, assessing resource from external sources, for financing growth including public issue, merger, amalgamation, joint venture, collaboration and selling business. Innovation Management: an introduction, management of research and development, Strategic alliances and network, Levels of Innovations. Organizational factors affecting innovation at the firm level.	10 Lectures

Suggested Readings:

1. Entrepreneurship Development Small Business Enterprises- Poornima M Charantimath, 2nd Edition, Pearson Education 2018, ISBN 978-81-317-6226-4.
2. Pradip N Khandwalla, Lifelong Creativity, An Unending Quest, Tata McGraw Hill, 2004.
3. Vinnie Jauhari, Sudanshu Bhushan, Innovation Management, Oxford Higher Education, 2014.

4. Innovation Management, C. S. G. Krishnamacharyulu, R. Lalitha, Himalaya Publishing House, 2010.
5. A.DaleTimpe, Creativity, Jaico Publishing House, 2003.
6. Brian Clegg, Paul Birch, Creativity, Kogan Page, 2009.
7. P. N. Rastogi, Managing Creativity for Corporate Excellence, Macmillan 2009.

Instructions for Internal Examiner: The internal assessment should be spread evenly throughout the semester and must include at least 3 independent components including a mid-term exam. Below are the suggested components for 25 marks. A teacher has a choice to change these components as per the need except for the mid-term exam. All the questions of mid-term Exams need to be mapped with Course Outcomes (COs) and need to be specified in the question paper against each question.

S. No.	Course Assessment Components	Marks/Weightage (%)
1	Assessment 1: Class Participation **(CP)** And Individual Assessment	5
2	Assessment 2: Mid-Term Exam (MTE)	15
3	Assessment 3: Case Analysis / Presentation **(CAP)/** Group Project (**GP**) / Role Play / Live Projects/ Simulation / Worksheet Assessment	5
	Internal Assessment **(IA) (1+2+3)**	25 (33.33%)
	End-Term Examination (**EE**)	50 (66.66%)
Total Marks (IA+EE)		**75**

Mapping Matrix of Course: 241/COM/MD105
CO-PO & CO-PSO Matrix for the Course: Entrepreneurship and Innovation Management

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2
CO1	3	2	1	3	1	1	2	3	3	2
CO2	2	3	2	2	3	3	1	2	3	3
CO3	3	2	2	3	2	2	2	3	3	2
CO4	2	1	3	2	3	3	3	2	3	3
Average	**2.5**	**2**	**2**	**2.5**	**2.25**	**2.25**	**2**	**2.5**	**3**	**2.5**

Name of Subject: International Business and Cross-Cultural Management	Maximum Theory Marks: 75 (50+ 25) (TE+TI+PE+PI=50+25+0+0)
Course ID: 241/COM/MD205	Time Allowed: 2hours
Credits: 3(L-T-P=2-1-0)	Course Type: Multidisciplinary Course

Instructions for Paper Setter: The question paper shall be divided into two sections. Section 'A' shall comprise five short answer type questions from the syllabus carrying two marks each, which shall be compulsory. The answer to each question should not exceed 100 words normally. Section 'B' shall comprise 8 questions (2 questions from each unit). All the questions need to be mapped with Course Outcomes (COs) and need to be specified in the question paper against each question. The students will be required to attempt f our questions by selecting one question from each unit. All questions will carry equal marks.

Course Outcomes: After completion of the course, learners will be able to:

CO1: Understand the concepts and foundational principles of international business.
CO2: Apply multiple dimensions of the field to impart an international perspective in making business decisions.
CO3: Analyze relevant knowledge, skills, and abilities necessary to address cross-cultural management issues in international business contexts.
CO4: Evaluate critical and creative solutions for cross-cultural management challenges in international business.

Course Content:

Unit I- Introduction: Nature, scope and importance of International Business; Modes of international business; International Trade: meaning, reasons, theories of international trade; Recent global trends in international trade.	10 Lectures
Unit II- Foreign market entry strategies; country evaluation and selection; factors affecting foreign investment decisions; impact of FDI on home and host countries; types and motives for foreign collaboration; International Economic Institutions: WTO, IMF, World Bank, UNCTAD; Regional Economic Integration: Levels of regional economic integration, Trade creation and diversion effects; Regional Trade Agreements: European Union (EU), ASEAN, SAARC and NAFTA.	10 Lectures
Unit III- Introduction: Concept of culture for a business context; Human and Cultural Variables in Global Organizations; Cross- Cultural Differences and Managerial Implications; Complexities of international firms	10 Lectures
Unit IV- Cross -Cultural Communication: elements and process of communication across cultures; Communication strategy of an Indian MNC and foreign MNC; Cross - Culture Negotiation & decision making- Process of Negotiation and Needed Skills & Knowledge Base – Overview with two illustrations from multi-cultural contexts [India – Europe/ India – US settings, for instance].	10 Lectures

Suggested Readings:

1.Daniels, J.D. and H. LEE Radesbaugh, International Business-Environment and Operations (New Delhi; Pearson Education)
2. Hill, Charles W.L., International Business -competency in the Global Marketplace (New Delhi: Tata McGraw Hill)
3. Sundaram, Anant K and Steward J Black, The International Business Environment: Text and Cases (New Delhi: Prentice Hall of India)
4. Marie- Joelle Browaeys, understanding Cross-Culture Management, Pearson Education
5. Mead, R., International Management: Cross Cultural Dimensions, Blackwell, Camb., Mass.

Instructions for Internal Examiner: The internal assessment should be spread evenly throughout the semester and must include at least 3 independent components including a mid-term exam. Below are the suggested components for 25 marks. A teacher has a choice to change these components as per the need except for the mid-term exam. All the questions of mid-term Exams need to be mapped with Course Outcomes (COs) and need to be specified in the question paper against each question.

S. No.	Course Assessment Components	Marks/ Weightage (%)
1	Assessment 1: Class Participation **(CP)** And Individual Assessment	5
2	Assessment 2: Mid-Term Exam (MTE)	15
3	Assessment 3: Case Analysis / Presentation **(CAP)/** Group Project (**GP**) / Role Play / Live Projects/ Simulation / Worksheet Assessment	5
	Internal Assessment **(IA) (1+2+3)**	25 (33.33%)
	End-Term Examination (**EE**)	50 (66.66%)
Total Marks (IA+EE)		**75**

Mapping Matrix of Course: 241/COM/MD205
CO-PO & CO-PSO Matrix for the Course 241/COM/MD205: International Business and Cross- Cultural Management

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2
CO1	3	3	2	2	2	1	1	2	3	2
CO2	2	2	2	3	2	2	1	2	2	3
CO3	3	2	3	3	2	2	2	2	3	3
CO4	2	1	2	3	3	2	3	3	2	3
Average	**2.5**	**2**	**2.25**	**2.75**	**2.25**	**1.75**	**1.75**	**2.25**	**2.5**	**2.75**

FUNDAMENTALS OF COMPUTER SCIENCE

Semester	1			
Course code	MDC-1			
Category	Multi-Disciplinary Course			
Course title	Fundamental of Computer Science			
Course ID	241/CSAI/MD101			
Scheme and Credits	L	T	P	Credits
	2	1	0	3
Theory Internal	25 marks			
Theory External	50 marks			
Practical Internal	-			
Practical External	-			
Total	75 marks			
Duration of Exam	3 hrs			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no.2 to 9 will be of 20% of total marks of Question paper . The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE Outcomes:

1. Understand computer fundamentals, including history, classification, components, and applications.
2. Learn number systems, binary arithmetic, and character representation, including error detection codes.
3. Evaluate input/output and memory/storage devices for functionality and application suitability.
4. Analyze software concepts, including system/application software, language translators, operating systems, and GUI standards.
5. Demonstrate proficiency in MS-Office applications for document creation, presentation development, and data management tasks.

Unit-I

Introduction : Historical evolution of computers, Classification of computers, Block Diagram along its components and characteristics, Usefulness of Computers. Human being Vs computer, Computer as a tool, Applications of computers.

Number Systems: Definition of Number system, necessity of binary number system, binary, decimal, octal and hexadecimal number system, inter- conversion of numbers, Representation of integers, fixed and floating points, BCD codes, Error detecting and correcting codes, character Representation-ASCII, EBCDIC, Binary arithmetic.

Unit-II

Input/Output Devices: Keyboards, mouse, joysticks, trackballs, digitizer, voice-recognition, optical-recognition, scanners, terminals, point-of-sale terminals, machine-vision systems.

Hard-copy devices: Impact printers - DMPs, Daisy-wheel printers, Line-printers. Non-impact printers - Inkjet, Laser, Thermal, LED; Plotters.

Soft-copy devices: Monitors, video-standards (VGA and SVGA).

Memory & Mass Storage Devices: Characteristics of memory systems, types of memory, RAM, ROM, magnetic disks - floppy disk, hard-disk; optical disks - CD, CD-I, CD-ROM; Magnetic tapes; Concepts of Virtual and Cache memory

Unit-III

Software Concepts: Introduction, types of software - System & Application software; Language translators - Compiler, Interpreter, Assembler; Operating system - Characteristics, bootstrapping, types of operating, operating system as a resource manager; BIOS; System utilities - Editor, Loader, Linker, File Manager. Concept of GUI, GUI standards. Introduction to Algorithm & Flowcharts, Advantages & Disadvantages.

UNIT-IV

MS-OFFICE:MS-Word :- Creating a document, font operation, bullet and numbering, find & replace, hyper linking, mathematical operation, Create table and flow chart, Macro, Mail merge, Correcting grammar, protect files, difference between doc and docx.

MS-PowerPoint :- Creating single and multiple slide, Animation, manual and automatic slide show, hyper linking, DFD, shape and style.

MS-Excel:- Create sheet and rename sheet, table and operation, cells operation, hyper linking, Function(mathematic, logical), sort and data tools, protection(sheet, workbook).

TEXT AND REFERENCE BOOKS:

1. Peter Norton, Introduction to computers, Sixth Edition Tata McGraw Hill (2007).
2. Andrews Jean, A+Guide to Managing & Maintaining Your PC, Cengage Publication 6 edition.
3. Anita Goel, Computer Fundamentals, Pearson Education.

WEB TECHNOLOGIES FUNDAMENTALS

Semester	2			
Course code	MDC-2			
Category	Multi-disciplinary Course			
Course title	Web Technology Fundamental			
Course ID	241/CSAI/MD201			
Scheme and Credits	L	T	P	Credits
	2	1	0	3
Theory Internal	25 marks			
Theory External	50 marks			
Practical Internal	-			
Practical External	-			
Total	75 marks			
Duration of Exam	3 hrs			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no.2 to 9 will be of 20% of total marks of Question paper . The students have to attempt five questions in total, the first being compulsory and selecting one from each unit..*

COURSE OUTCOMES:

1. Analyze given assignment to select sustainable web development and design methodology
2. Identify the difference between the HTML PHP and XML documents
3. Identify the engineering structural design of XML and parse tree
4. Analyze the difference between and PHP and XML.
5. Develop solution to complex problems using appropriate method, technologies, frameworks, web services and content management.
6. Develop web based application using suitable client side and server side web technologies

UNIT - I

HYPERTEXT MARKUP LANGUAGE: The anatomy of an HTML document: Marking up for structure and style: basic page markup, absolute and relative links, ordered and unordered lists,

embedding images and controlling appearance, table creation and use, frames, nesting and targeting.

STYLE SHEETS: Separating style from structure with style sheets, Internal style specifications within HTML, External linked style specification using CSS, page and site design considerations.

UNIT – II

Introduction to PHP: Declaring variables, data types, arrays, strings, operations, expressions, control structures, functions, Reading data from web form controls like Text Boxes, radio buttons, lists etc., Handling File Uploads, Connecting to database (My SQL as reference), executing simple queries, handling results, Handling sessions and cookies. File Handling in PHP: File operations like opening, closing, reading, writing, appending, deleting etc. on text and binary files, listing directories.

UNIT – III

CLIENT SIDE PROGRAMMING: Introduction to Client side programming, Java Script syntax, the Document object model, Event handling, Output in JavaScript, Forms handling, cookies, Introduction to VBScript, Form Handling.

UNIT - IV

XML: Introduction to XML, uses of XML, simple XML, XML key components, DTD and Schemas, Well formed, using XML with application.XML, XSL and XSLT. Introduction to XSL, XML transformed simple example, XSL elements, transforming with XSLT.

TEXT AND REFERENCE BOOKS:

1. Fundamentals of the Internet and the World Wide Web‖, Raymond Greenlaw and Ellen Hepp, TMH, latest edition.
2. Internet & World Wide Programming‖, Deitel, Deitel & Nieto, Pearson Education
3. Complete idiots guide to java script‖. Aron Weiss, QUE.
4. Network firewalls‖, Kironjeet syan – New Rider Pub.

PROGRAMMING IN C

Semester	3			
Course code	MDC-3			
Category	Multidisciplinary Course			
Course title	Programming in C			
Course ID	241/CSAI/MD301			
Scheme and Credits	L	T	P	Credits
	2	1	0	3
Theory Internal	25 marks			
Theory External	50 marks			
Practical Internal	-			
Practical External	-			
Total	75 marks			
Duration of Exam	3 hrs			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no.2 to 9 will be of 20% of total marks of Question paper . The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE OUTCOMES:

1. Develop a C program
2. Control the sequence of the program and give logical outputs.
3. Implement strings in your C program.
4. Store different data types in the same memory.
5. Manage I/O operations in your C program.
6. Repeat the sequence of instructions and points for a memory location.

UNIT-I

Introduction to Programming: Idea of Algorithm: Steps to solve logical and numerical problems. Representation of Algorithm: Flowchart/Pseudocode with examples. C Programming: Keywords, Variables and Data Types: basic, derived and user defined, Type Conversions, Header Files, Basic Input and Output Functions and Statements, Compilation, Syntax and Logical Errors in compilation, Object

and Executable Code, Storage Classes, Arithmetic Expressions and Precedence.

UNIT-II

Preprocessors, Conditional and Branching Statements, Loops/ Iterative Statements, Writing and evaluation of conditionals and consequent branching.

UNIT-III

Arrays (1-D, 2-D), Character Arrays and Strings, Arrays with Pointers, Functions (including using built in libraries), Parameter passing in functions, call by Value, call by Reference, Passing arrays to functions, Recursion, as a different way of solving problems. Example programs, such as Finding Factorial, Fibonacci series, Ackerman function etc.

UNIT-IV

Idea of pointers, defining pointers, Use of Pointers in self-referential structures, Introduction to Dynamic Memory Allocation and its Methods, Structures, Union, Defining Structures and Array of Structures, File Handling.

TEXT AND REFERENCE BOOKS:

1. Ajay Mittal, Programming in C, ‘A Practical Approach’, Pearson Education.
2. Byron Gottfried, Schaum's Outline of Programming with C, McGraw-Hill
3. E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill
4. Yashavant Kanetkar, Let Us C, BPB Publication.
5. Gill, Nasib Singh: Computing Fundamentals and Programming in C, Khanna Book Publishing Company(Private) Limited, New Delhi

CLOUD COMPUTING

Semester	4			
Course code	MDC-4			
Category	Discipline Specific Elective Course			
Course title	CLOUD COMPUTING			
Course ID	241/CSAI/MD401			
Scheme and Credits	L	T	P	Credits
	2	1	0	3
Theory Internal	25 marks			
Theory External	50 marks			
Practical Internal	-			
Practical External	-			
Total	75 marks			
Duration of Exam	3 hrs			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no.2 to 9 will be of 20% of total marks of Question paper . The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE Outcomes:

1. Identify the Parallel and Distributed computing technologies involved in Cloud
2. Explain the design principles involved in building a Cloud platform over virtualized clusters and data centers
3. Analyze different performance metrics for evaluating Cloud Applications.
4. Prepare Cloud based applications that can scale out.
5. Apply task and data parallel distributed algorithms for Cloud

UNIT - I

Introduction of Cloud Computing: What is Cloud Computing? How it works? Cloud Computing Delivery Models and Services, Ethical issues in Cloud Computing, Cloud Vulnerabilities, Major Challenges faced by Cloud Computing

UNIT - II

Parallel and Distributed Systems: Parallel and Distributed Systems Introduction, Parallel Computing, Architecture, Distributed Systems, Communication Protocol and Process Coordination, logical Clocks, Message Delivery Rules, Concurrency, Atomic Actions, Consensus Protocols, Modeling Concurrency with Petri Nets, Client Server Paradigm

UNIT - III

Cloud Infrastructure: Cloud Computing at Amazon, Google Perspective, Microsoft Windows Azure and Online Services, OpenSource Software Platforms for Private clouds, Intercloud, Responsibility Sharing Between User and Cloud service provider, Cloud Virtualization, Layering, Full Virtualization and Paravirtualization.

UNIT - IV

Cloud Computing Services: Standard Cloud Model, Cloud Deployment Model, Service Delivery Models, Service Abstraction, SPI Model, Traditional System Vs Cloud System Model, All Applications delivered using web services are not SaaS, SaaS and PaaS: Salesforce.com and Force.com, Open Cloud Services.

TEXT AND REFERENCE BOOKS:

1. Barrie Sosinsky: "Cloud Computing Bible", Wiley-India, 2010
2. Rajkumar Buyya, James Broberg, Andrzej M. Goscinski: "Cloud Computing: Principles and Paradigms", Wiley, 2011
3. Nikos Antonopoulos, Lee Gillam: "Cloud Computing: Principles, Systems and Applications", Springer, 2012
4. Ronald L. Krutz, Russell Dean Vines: "Cloud Security: A Comprehensive Guide to Secure Cloud Computing", Wiley-India, 2010
5. Tim Mather, Subra Kumara swamy, Shahed Latif, Cloud Security and Privacy: An Enterprise Perspective on Risks and Compliance, O'Reilly Media, 2009

Gurugram University Gurugram, Haryana(India)

PG Program: (Semester-II) Geography Subject MDC-2 Paper Syllabus
(as per NEP 2020 w.e.f session 2024-25)
(offered to the students of different discipline/Subject)

GEOGRAPHY OF HARYANA

Paper Code: **MDC-02 (Theory Paper)**
Course Id: 24/GEO/MD201

Credit: 03 (2+1+0) L+T+P Hrs/Week	Total Marks	75
Time: 3 Hours	End Semester Exam:	50 Marks
Note: The question Paper will have five units. Four units of question paper will contain two essay type questions (having 10 marks of each question) from each unit of the syllabus. Candidate(s) are required to attempt one question from each unit. The first unit having question no. 1 shall be compulsory and shall contain five short answer type questions (having 2 marks of each question) covering the entire syllabus. All questions carry equal marks.	Internal Assessment: Attendance Assignment Sessional Exam	25 Marks 5 5 15

Course Outcomes (COs):

CO-01: The students shall have in-depth knowledge of the land and physical diversity of Haryana.

CO-02: They will understand and analyze the climate pattern and socio-cultural diversity of Haryana in Geographical perspective.

CO-03: They will be able to understand characteristics, Problems and Prospects of Agricultural in Haryana.

CO-04: Students will be able to understand and analyze the relevance and distribution of natural resources, industrial development and transport networks in Haryana.

UNIT-I

Haryana: Location and Extent; Origin and Administrative setup of Haryana; Vegetation., Soils;

Physiographic divisions of Haryana: Arawali Hills, Shiwalik Region, Plain and Desert; Geology of Haryana, Drainage System-Yamuna, Ghaggar, Sahibi and Krishnawati and others

UNIT-II

Climate: Seasons; the climatic regions of Haryana. Rainfall patterns in Haryana;
Population in Haryana: Population Distribution, Growth, Density, Sex Ratio, Literacy;
Population Composition of Haryana: Age-Sex, Urban-Rural, Religion and Caste;
Urbanisation in Haryana (1966-2021): Trends and associated Problems.

UNIT-III

Irrigation Systems in Haryana: Wells, Tube wells and Canal; SYL canal dispute.
Agriculture in Haryana: its characteristics and impact of Green revolution.
Problems and Prospects of Haryana Agriculture:
Major crops: Wheat, Rice, Cotton, Sugarcane. Agriculture regions on Haryana.

UNIT-IV

Minerals and Power resources of Haryana;
Major industries of Haryana: Agro-based, Automobile, Footware, Tourism and IT.
Roadway and Railway Transportation Network of Haryana.

Suggested Readings:

1. Deshpande, C.D (1992): India- A Regional Interpretation, Northern Book Centre, New Delhi.
2. Hussain, Majid, (2020). Geography of India. McGraw Hill Education (India) Private Ltd.
3. Kumar, Sandeep (2021): Haryana Ka Bhugol (in Hindi), Kapila publication.
4. Singh, R.L. (1971), India: A Regional Geography, National Geographical Society of India, Varanasi.
5. Singh, Jagjeet (ed.): Haryana Digdarshan, Arihant Publications Ltd., New Delhi.
6. Singh, Jasbir (1976): An Agricultural Geography of Haryana, Vishal Publications, Kurukshetra
7. Singh Mandeep and Kaur, Harvinder, (2004): Economic Development of Haryana, Deep and Deep Publication Pvt. Ltd., Delhi.
8. Thussa, J.L.(2006): Geology of Haryana and Delhi, Geological Society of India.

Multidisciplinary Course from the department for pool of the Courses in the University

(These courses are to be offered to students of different discipline/Subject by Department of Psychology)

M.Sc. Psychology

Semester- I

MDC-1 Behavioral & Personality Dynamics (241/MPSY/MD 101)

Credits: 3 (Hrs./week:3) **Maximum Marks:75**

Theory Examination: 35
Internal Assessment: 15
Practical Examination: 20
Practical Assessment: 05
Time: 3 hrs.

Note: The students will be required to attempt four questions in all. Question No. I will be compulsory comprising of 4 short answer type questions of 2 marks each and will cover the entire syllabus 4X 2 = 8 marks. In addition to it, Question Nos. II to VII will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 14 marks each i.e. 3 X 14 = 42 marks thus making it the total weight age to 50 marks .Three questions to be attempted. One from each unit.

Course Outcomes

- Students will be able to demonstrate a comprehensive understanding of different theories and approaches to personality from both psychoanalytic and behavior analysis perspectives.
- Students will be able to evaluate the influence of biological and psychological factors on the development of personality.
- Students will be able to apply various psychological assessment techniques to analyze and interpret personality traits.

Unit-I

- Introduction to Personality: Definitions and Meaning, Nature vs Nurture approaches to Personality, Determinants of Personality: Biological and Psychological.

Unit-II

- Psychoanalytic approaches to Personality: Freud, Jung, Adler
  Behavior analysis: Classical Conditioning & Operant Conditioning

Unit-III

- Psychological Assessment: Personality Assessment, Interview, Observation, NEO-FFI, EPQ

Suggested Readings:

1. Kaplan, R.M. & Saccuzzo, D.P. (2007). "Psychological testing: Principles, Applications, & Issues",

Thomson- Wadsworth, Sixth edition, Indian Reprint

2. Anatasi Anne & Urbina Susana (2003), "Psychological testing", Pearson Education, seventh edition, Indian Reprint, New Delhi
3. Aiken L.R & Marhat- Groth G (2009), "Psychological Testing & Assessment", Pearson Education, Twelfth edition, Indian Reprint, New Delhi
4. Hall, G.S., & Lindzey, G. (1985). *Theories of personality* (3rd ed.). New Delhi: Wiley Eastern.
5. Olson, M., &Hergenhahn, B. R. (2011). *An introduction to theories of personality, 8the Edition.* New York: Pearson. [Chapter 15 “Abraham Maslow”, pp. 466-499; Chapter 16 “Rollo Reese May”, pp. 500-526].
6. Shultz, D.P. & Shultz, S. E. (2012). *Theories of personality*. USA: Wadsworth, Cengage Learning.

M.Sc. Psychology

Semester- II

MDC-2 Psychology of Happiness & Peace (241/MPSY/MD 201)

Credits: 3 **Maximum Marks:75**

Theory Examination: 35
Internal Assessment: 15
Practical Examination: 20
Practical Assessment: 05
Time: 3 hrs.

Note: The students will be required to attempt four questions in all. Question No. I will be compulsory comprising of 4 short answer type questions of 2 marks each and will cover the entire syllabus 4X 2 = 8 marks. In addition to it, Question Nos. II to VII will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 14 marks each i.e. 3 X 14 = 42 marks thus making it the total weight age to 50 marks .Three questions to be attempted. One from each unit.

Course Outcomes

- Students will be able demonstrate an understanding of happiness from both Western psychological perspectives and Eastern philosophical traditions.
- Students will be able how social, cultural, and environmental factors influence individual and collective happiness.
- Students will be able apply knowledge of happiness to analyze contemporary issues such as social media impact, materialism, and mental health.

Unit-1

- Locating Happiness in Psychological Approaches- Psychological definitions of Happiness, Biology of happiness, Personality and happiness, Theories and models for attaining happiness, social markers of Happiness, Objective measurements of happiness

Unit-2

- Eastern Traditions of Happiness and its relationship with Peace-Buddhist and Hindu view of Happiness, Meditation and Mindfulness, Morality and Happiness

Unit-3

- Deconstructing Happiness in the Contemporary world-Happiness and social media, Cage of Materialism, Happiness-suicide paradox, Overt mobile based happiness- covert narcissist vulnerability

Suggested Readings:

1. A. J. (2014). Towards a Developmental Understanding of Happiness.

SociologicalResearch Online.
2. J, M. (2015). *Theories of Happiness: An Anthology.* Broadview Press.
3. L, L. (2014). Person-Oriented Conception of Happiness and Some PersonalityTheories. *Sage Open*.
4. N, L. (2016). The Views on Happiness: A Dialectic Approach. *Vision: The Journal ofBusiness Perspective*.
5. S, O. (2013). Concepts of Happiness Across Time and Cultures. *Personality and SocialPsychology Bulletin*.
6. T, C. (2011). Effects of Intensive Mobile Happiness Reporting in Daily Life. *SocialPsychological and Personality Science*.
7. Batthyany, A., Russo-Netzer, P. (Eds.). (2014). *Meaning in Positive and ExistentialPsychology.* Springer.

M.Sc. Psychology

Semester- III

MDC-3 Climate Change & Mental Health (241/MPSY/MD 301)

Credits: 3

Maximum Marks:75
Theory Examination: 35
Internal Assessment: 15
Practical Examination: 20
Practical Assessment: 05
Time: 3 hrs.

Note: The students will be required to attempt four questions in all. Question No. I will be compulsory comprising of 4 short answer type questions of 2 marks each and will cover the entire syllabus 4X 2 = 8 marks. In addition to it, Question Nos. II to VII will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 14 marks each i.e. 3 X 14 = 42 marks thus making it the total weight age to 50 marks .Three questions to be attempted. One from each unit.

Course Outcomes

- Students will be able to comprehend the complex interplay between climate change and mental health, including psychological responses and societal impacts.
- Students will be able to develop skills in building resilience and applying coping strategies to mitigate climate-related psychological distress.
- Students will be able to apply knowledge of evidence-based psychotherapeutic interventions to support individuals and communities affected by climate change.

Unit 1

Understanding the Intersection of Climate Change and Mental Health

Introduction to Climate Change and Mental Health: Definitions and concepts, Impacts of Climate change: Individuals, Communities & Society; problem of Inequity

Psychological Outcomes of Climate Change: Anxiety, stress, and depression, Grief and loss, Trauma and PTSD

Unit 2

Psychological Resilience and Coping Strategies

Building Resilience in the Face of Climate Change: Resilience and its theory, Coping mechanisms and adaptive strategies

Climate Change Communication and Perception: Media portrayal of climate change, Cognitive biases and decision-making, Effective communication strategies, Climate Change Solutions

Unit 3

Psychotherapy and Mental Health Interventions

Evidence-based interventions for climate-related distress**,** Support systems and community resources

Suggested Readings:

1. "The Age of Sustainable Development" by Jeffrey D. Sachs

2. "Climate Change and Human Health: Risks and Responses" by Anthony J. McMichael
3. Marks, et al., (2011). Health Psychology Theory, Research & Practice (3rd Ed.). India, Sage Publication
4. Straub, R. O. (2014). Health Psychology: A Biopsychosocial Approach. NY: Worth Publishers
5. "The Psychology of Climate Change Communication" by Britt Wray
6. Various academic articles and case studies provided throughout the course.

M.Sc. Psychology Semester- IV

DSC: 305 Vulnerabilities of Contemporary Indian Society (241/MPSY/MD 401)

Credits: 3 (Hrs./week:4) **Maximum Marks:75**

Theory Examination: 35
Internal Assessment: 15
Practical Examination: 20
Practical Assessment: 05
Time: 3 hrs.

Note: The question paper will consist of four Units containing eight questions with internal choice from each unit i.e. two questions from each unit. The candidate will be required to answer five questions in all. Four questions will have to be attempted from four units and the fifth question which is compulsory shall be of short answer type question covering the entire syllabus. All the questions shall carry equal marks i.e. 14 each from the I to IV units and 5" compulsory question shall be divided into seven short answer questions of 2 marks each i.e. 7x2=14 thus making it the total weight age to 70 marks.

Course Objectives

- Students will be able to inculcate critical human sensitivity and appreciate alternate human experiences of marginal populations.
- Students will be able to examine the relationship between political processes, cultural and social realities and psychological processes realities those underlie societal vulnerabilities and relevant interventions.

Unit-I

- Introduction to Social Vulnerabilities: issues and challenges of developing societies: modernization, urbanization, industrialization and change in societies, displacement and migration etc.

Unit-II

- Poverty and Deprivation: Discourses of Poverty; Causes and impact of poverty: social, political, economic and societal factors; concomitants of poverty and disadvantage, social exclusion and mental health, challenges and interventions for poverty alleviation.

Unit-III

- Corruption and Other Societal Challenges: Theories and Perspectives on corruption, Issues of Power, Ethics, Social Norms; The social and psychological perspectives on Unemployment

Suggested Readings:

1. Misra,G.andTripathi,R.C.(1995).Deprivation:ItsSocialRootsand Psychological consequences. Concept Publishing.
2. Mohanty,A.K. and Misra,G.(2000). Psychology of Poverty and Disadvantage. Concept Publishing.
3. Zaloznaya,M.(2014).The Social Psychology of

Curruption.Sociology Compass,8,2,187-202.

4. Kubbe,I.; and Engelbert,A. (2018). Curruption and Norms. Palgrave Mc Millian.
5. Fryer,D. and Ullah,P. (1987). Unemployed People. Open University Pre

Semester - 1

MDC - 1 हिंदी यात्रा साहित्य

पूर्णांक-50+25=75 **Course ID-241/HIN/MI101**

पाठ्यक्रम के उद्देश्य :

* विद्यार्थियों को यात्रा साहित्य के माध्यम से समाज एवं संस्कृति के विविध पहलुओं से परिचित कराना।

* विद्यार्थियों में राष्ट्रीयता की भाव-बोध को जागृत करना।

* विद्यार्थियों को यात्रा साहित्य के इतिहास की जानकारी देना।

पाठ्यक्रम अध्ययन के परिणाम :

* विद्यार्थी यात्रा साहित्य के लेखकों से परिचित होंगे।

* विद्यार्थी यात्रा वृत्तांत के साहित्यिक, सामाजिक और सांस्कृतिक महत्त्व से परिचत होंगे।

* यात्रा वृत्तांत के माध्यम से पर्यटन के प्रति रुचि विकसित होगी।

पाठ्यक्रम

इकाई 1 : यात्रा साहित्य की अवधारणा और स्वरूप

* यात्रा साहित्य का अर्थ और स्वरूप

* यात्रा साहित्य का महत्व

* यात्रा साहित्य की विशेषताएँ

इकाई 2 : हिंदी यात्रा साहित्य का विकासात्मक परिचय

* स्वतंत्रता पूर्व हिंदी यात्रा साहित्य : सामान्य परिचय

* स्वातंत्रता पूर्व हिंदी यात्रा साहित्य : सामान्य परिचय

* यात्रा साहित्य का सामाजिक और सांस्कृतिक परिप्रेक्ष्य

इकाई 3 : पाठपरक अध्ययन-1

*** किन्नर देश में**- राहुल सांकृत्यायन

* **अरे यायावर रहेगा याद-** सच्चिदानंद हीरानंद वात्स्यायन 'अज्ञेय'

इकाई 4 : पाठपरक अध्ययन-2

* **चीडों पर चाँदनी**- निर्मल वर्मा (अनुक्रम के अनुसार केवल 9वां यात्रा संस्मरण 'चीड़ों पर चाँदनी')

*** कामाख्या क्षेत्रे गुवाहाटी नगरे**- सांवरमल सांगानेरिया (पुस्तक : ब्रह्मपुत्र के किनारे-किनारे)

निर्देश-

1. पाठ्यक्रम में निर्धारित प्रत्येक खंड में से कम से कम एक दीर्घ प्रश्न अवश्य पूछा जाएगा। पूछे गए कुल प्रश्नों की संख्या चार होगी जिसमें से परीक्षार्थी को कुल दो प्रश्न करने होंगे। प्रत्येक प्रश्न के लिए 10 अंक निर्धारित है। पूरा प्रश्न कुल 20 अंकों का होगा।

2. पूरे पाठ्यक्रम में से कुल दस लघुत्तरी प्रश्न पूछे जाएंगे जिनमें से परीक्षार्थी को 200 शब्दों में किन्हीं छः प्रश्नों का उत्तर देना होगा प्रत्येक प्रश्न 4 अंक का होगा। पूरा प्रश्न 24 अंकों का होगा।

3. पूरे पाठ्यक्रम में से 6 वस्तुनिष्ठ अनिवार्य प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न एक-एक अंक का होगा।

सहायक ग्रंथों की सूचीः

1. सांगानेरिया, सांवरमल, ब्रह्मपुत्र के किनारे-किनारे, भारतीय ज्ञानपीठ, नई दिल्ली।
2. सांकृत्यायन, राहुल, किन्नर देश में, किताब महल प्रकाशन, दरियागंज, नई दिल्ली।
3. अज्ञेय, अरे यायावर रहेगा याद, नेशनल पब्लिशिंग हाउस, नई दिल्ली।
4. वर्मा, निर्मल, चीड़ों पर चाँदनी, राजकमल प्रकाशन, नई दिल्ली
5. उप्रेती, रेखा प्रवीण, हिंदी का यात्रा साहित्य, हिंदी बुक सेंटर, नई दिल्ली।
6. नगेंद्र, डॉ., साहित्य का समाजशास्त्र, नेशनल पब्लिशिंग हाउस, नई दिल्ली।
7. अग्रवाल, वासुदेव शरण, कला और संस्कृति, प्रभात प्रकाशन, नई दिल्ली।
8. दिनकर, रामधारी सिंह, संस्कृति के चार अध्याय, राजकमल प्रकाशन, नई दिल्ली।
9. शर्मा, मुरारीलाल, हिंदी यात्रा साहित्य : स्वरूप और विकास, क्लासिकल पब्लिशिंग कंपनी, नई दिल्ली।

MDC – 02 गांधी दर्शन एवं हिंदी साहित्य

पूर्णांक-50+25=75 **Course Id- 241/HIN/MD202**

पाठ्यक्रम के उद्देश्य :

- विद्यार्थियों को महात्मा गांधी के शब्द और कर्म से परिचित कराना।
- महात्मा गांधी के चिंतन और हिंदी साहित्य के अंतर्संबंधों का ज्ञान देना।
- स्वाधीनता आंदोलन के मूल्यों से परिचित कराना।

पाठ्यक्रम अध्ययन के परिणाम :

- विद्यार्थी महात्मा गांधी के जीवन-दर्शन से परिचित होंगें।
- विद्यार्थी राष्ट्रीय आंदोलन में गांधी जी के नेतृत्व और उनकी लोकप्रियता के कारकों को समझेंगे।
- विद्यार्थी गांधी-दर्शन और हिंदी साहित्य के संबंधों को जानेंगे।

पाठ्यक्रम:

इकाई 1 : गांधी-दर्शन : अवधारणा और महत्त्व

गांधी-दर्शन की अवधारणा

गांधी-दर्शन का विकास

सत्य और अहिंसा

विश्व पटल पर गांधी-दर्शन

इकाई 2 : भारतीय साहित्यिक-सांस्कृतिक परंपरा और महात्मा गांधी

गांधी का गीता भाष्य

गांधी और रामराज

गांधी और सनातन संस्कृति

इकाई 3 : हिंदी कविता में गांधी

महात्मा जी के प्रति- सुमित्रानंदन पंत

बापू (चार प्रारंभिक अंश)- रामधारी सिंह दिनकर

तुम कागज़ पर लिखते हो- भवानी प्रसाद मिश्र

इकाई- 4 : हिंदी गद्य में गांधी

पहला गिरमिटिया (अंतिम 50 पृष्ठ)- गिरिराज किशोर

दांडी यात्रा (पृष्ठ 30-67)- मधुकर उपाध्याय

निर्देश-1.पाठ्यक्रम में निर्धारित प्रत्येक खंड में से कम से कम एक दीर्घ प्रश्न अवश्य पूछा जाएगा। पूछे गए कुल प्रश्नों की संख्या चार होगी जिसमें से परीक्षार्थी को कुल दो प्रश्न करने होंगे। प्रत्येक प्रश्न के लिए 10 अंक निर्धारित है। पूरा प्रश्न कुल 20 अंकों का होगा।

2.पूरे पाठ्यक्रम में से कुल दस लघुत्तरी प्रश्न पूछे जाएंगे जिनमें से परीक्षार्थी को 200 शब्दों में किन्हीं छः प्रश्नों का उत्तर देना होगा प्रत्येक प्रश्न 4 अंक का होगा। पूरा प्रश्न 24 अंकों का होगा।

3.पूरे पाठ्यक्रम में से 6 वस्तुनिष्ठ अनिवार्य प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न एक-एक अंक का होगा।

सहायक ग्रंथों की सूचीः

1. गांधी, महात्मा, हिंद स्वराज, नवजीवन प्रकाशन, अहमदाबाद।
2. गांधी, महात्मा, सत्य के प्रयोग अथवा आत्मकथा, नवजीवन प्रकाशन, अहमदाबाद।
3. कृपलानी, कृष्ण, गांधी एक जीवनी, राष्ट्रीय पुस्तक न्यास, नई दिल्ली।
4. कृपलानी, जे. बी., जीवन और दर्शन, प्रकाशन, विभाग, नई दिल्ली।

5. गिरि, राजीव रंजन, गांधीवाद रहे न रहे, अनन्य प्रकाशन, नई दिल्ली।

6. आचार्य, नंद किशोर, अहिंसा की संस्कृति, राजकमल प्रकाशन, नई दिल्ली।

7. धर्माधिकारी, दादा, गांधी की दृष्टि, सर्व सेवा संघ प्रकाशन, वाराणसी।

8. मिश्र, श्री प्रकाश, अहिंसा का उत्तर आधुनिक परिप्रेक्ष्य, प्राकृत भारती अकादमी, जयपुर।

9. मिश्र, दयानिधि, गांधी और हिंदी सृजन संदर्भ, सस्ता साहित्य मंडल, नई दिल्ली

10. पारेख, भीखू, गांधी, ऑक्सफोर्ड यूनिवर्सिटी प्रेस, नयी दिल्ली।

SEMESTER - 3

MDC 3 भारतीय और पाश्चात्य रंगमंच

पूर्णांक-50+25=75

Course Id- 241/HIN/MD303

पाठ्यक्रम का उद्देश्य :

- भारतीय एवं पाश्चात्य रंग सिद्धांतों का स्वरूपगत विभेद तथा परंपरा का परिचय।
- भारतीय एवं पाश्चात्य विविध नाट्य रूपों के दार्शनिक चिंतन के अंतर की जानकारी।
- भारतीय तथा पाश्चात्य नाट्य रूपों की व्यावहारिक तथा प्रयोगात्मक जानकारी।

पाठ्यक्रम अध्ययन के परिणाम:

- भारतीय एवं पाश्चात्य रंग परंपराओं के भेद तथा प्रकारों का परिचय प्राप्त हो सकेगा।
- भारतीय एवं पाश्चात्य रंग परंपराओं के आदान-प्रदान से निर्मित आधुनिक नाट्य रूपों की जानकारी प्राप्त हो सकेगी।
- भारतीय एवं पाश्चात्य नाट्य रूपों की विविधता से परिचय के बाद समकालीन रंग परिदृश्य की बेहतर समझ विकसित होगी।

पाठ्यक्रम:

इकाई-1 :नाटक की भारतीय अवधाराणाएं (उत्पत्ति तथा स्वरूप संबंधी मान्यताएं)

नाटक की पाश्चात्य अवधारणाएं (उत्पत्ति तथा स्वरूप संबंध मान्यताएं)

इकाई-2 भारतीय नाट्यरूप : रूपक, उपरूपक, नाटक (प्रकार तथा भेद)

आधुनिक भारतीय नाट्यरूप : काव्य नाटक, एकांकी, रेडियो नाटक, नुक्कड़ नाटक

इकाई-3 अरस्तू: अनुकरण सिद्धांत

अरस्तू: विरेचन सिद्धांत

इकाई-4 पाश्चात्य नाट्यरूप: त्रासदी, ड्रामा

पाश्चात्य नाट्यरूप: कॉमेडी , मेलोड्रामा

निर्देश :1.पाठ्यक्रम में निर्धारित प्रत्येक खंड से दो-दो प्रश्न दिए जाएंगे। परीक्षार्थियों को कुल चार प्रश्नों के उत्तर देने होंगे। प्रत्येक खंड से कम से कम एक प्रश्न करना अनिवार्य है। प्रत्येक प्रश्न 8 अंक का होगा। पूरा प्रश्न 32 अंक का होगा।

2.पूरे पाठ्यक्रम से 8 लघूत्तरी प्रश्न पूछे जाएंगे जिनमें से परीक्षार्थियों को लगभग 150 शब्दों में किहीं 4 प्रश्नों के उत्तर देने होंगे। प्रत्येक प्रश्न 3 अंक का होगा। पूरा प्रश्न 12 अंक का होगा।

3.पूरे पाठ्यक्रम से 6 वस्तुनिष्ठ अनिवार्य प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न एक-एक अंक का होगा।

सहायक पुस्तकें :

1)भरत मुनि: नाट्य शास्त्र

2) डॉ नागेंद्र :भारतीय नाट्य चिंतन

3) चैनी, शेल्डन, रंगमंच

4)ओझा, दशरथ: हिंदी नाटक उद्भव और विकास

5) त्रिपाठी, राधावल्लभ, नाट्य शास्त्र विश्व कोष

6) जैन नेमीचंद्र रंग दर्शन

7)लक्ष्मी नारायण लाल: रंगमंच- देखना और जानना

8) दीक्षित ,सुरेंद्रनाथ, भरत और भारतीय नाट्य कला , मोतीलाल बनारसी दास, नई दिल्ली

8)गार्गी बलवंत रंगमंच

SEMESTER - 4

MDC- 04 हिंदी साहित्य: विविध विमर्श

पूर्णांक-50+25=75

Course Id- 241/HIN/ MD404

पाठ्यक्रम का उद्देश्य :

1.हिंदी साहित्य में विभिन्न साहित्यिक विमर्शों की समझ विकसित करना।

2. संरचनावाद, उत्तर-संरचनावाद, पाठक-प्रतिक्रिया सिद्धांत, नारीवाद, दलित विमर्श, आदि आधुनिक आलोचनात्मक दृष्टिकोणों का परिचय एवं अध्ययन।

3. सांस्कृतिक अध्ययन एवं उत्तर-औपनिवेशिक दृष्टिकोणों का हिंदी साहित्य में प्रयोग एवं महत्व।

4. विभिन्न भाषाओं और संस्कृतियों के साहित्यिक पाठों का तुलनात्मक अध्ययन और उनका हिंदी साहित्य में योगदान।

पाठ्यक्रम अध्ययन के परिणाम:

1. विद्यार्थी आलोचनात्मक सिद्धांतों की मदद से हिंदी साहित्य के पाठों का विश्लेषण और मूल्यांकन कर सकेंगे।

2.नारीवाद, दलित विमर्श, उत्तर-औपनिवेशिक और सांस्कृतिक अध्ययन जैसे विविध विमर्शों की गहरी समझ विकसित होगी।

3. विद्यार्थी तुलनात्मक साहित्य के माध्यम से हिंदी साहित्य का विश्लेषण अन्य भाषाओं और संस्कृतियों के संदर्भ में कर सकेंगे।

4. विद्यार्थी प्राप्त ज्ञान को व्यावहारिक रूप में शोध, लेखन और साहित्यिक आलोचना में प्रयोग कर सकेंगे।

पाठ्यक्रम :

इकाई 1 : विमर्शों की सैद्धांतिकी

दलित विमर्श: अवधारणा और आंदोलन, फूल और अंबेडकर

स्त्री विमर्श: अवधारणाएं और मुक्ति आंदोलन(पाश्चात्य और भारतीय)रेडिकल ,मार्क्सवादी, उदारवादी आदि ,यौनिकता, लिंग भेद ,पितृसत्ता , समलैंगिकता

इकाई 2 : विमर्श मूलक कथा साहित्य

ओम प्रकाश वाल्मीकि - सलाम

नासीरा शर्मा - खुदा की वापसी

इकाई 3 : विमर्श मूलक कविता

(क) दलित कविता : अछूत आनंद :दलित कहां तक पड़े रहेंगे , माता प्रसाद : सोनवा का पिंजरा
(ख) स्त्री कविता : कीर्ति चौधरी: सीमा रेखा , कात्यायनी :सात भाइयों के बीच चंपा , सविता सिंह: मैं किसकी औरत हूं?

इकाई - 4 : विमर्श मूलक अन्य गद्य विधाएं

प्रभा खेतान , पृष्ठ 28- 42: अन्य से तक अनन्या

तुलसीराम : मुर्दहिया - चौधरी चाचा से प्रारंभ: पृष्ठ संख्या 125 से 135

महादेवी वर्मा: स्त्री के अर्थ स्वतंत्रता का प्रश्न

निर्देश-1.पाठ्यक्रम में निर्धारित प्रत्येक खंड में से कम से कम एक दीर्घ प्रश्न अवश्य पूछा जाएगा। पूछे गए कुल प्रश्नों की संख्या चार होगी जिसमें से परीक्षार्थी को कुल दो प्रश्न करने होंगे। प्रत्येक प्रश्न के लिए 10 अंक निर्धारित है। पूरा प्रश्न कुल 20 अंकों का होगा।

2.पूरे पाठ्यक्रम में से कुल दस लघुत्तरी प्रश्न पूछे जाएंगे जिनमें से परीक्षार्थी को 200 शब्दों में किन्हीं छः प्रश्नों का उत्तर देना होगा प्रत्येक प्रश्न 4 अंक का होगा। पूरा प्रश्न 24 अंकों का होगा।

3.पूरे पाठ्यक्रम में से 6 वस्तुनिष्ठ अनिवार्य प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न एक-एक अंक का होगा।

सहायक ग्रंथः

1. सिमोन द बोउवा - स्त्री उपेक्षिता

2. गुलामगीरी- ज्योतिबा फुले

3. अंबेडकर रचनावली- भाग-1

4. प्रभा खेतान - उपनिवेश में स्त्री

5. स्त्री अस्मिता साहित्य और विचारधारा- सुधा सिंह

6. मूक नायक, बहिष्कृत भारत - अंबेडकर

7. शिकंजे का दर्द - सुशीला टांकभौरे

8. जूठन - ओमप्रकाश वाल्मीकि

9. दलित साहित्य का सौंदर्यशास्त्र- शरण कुमार लिंबाले

10. दलित साहित्य का सौंदर्यशास्त्र- ओमप्रकाश बाल्मीकि

11. दलित आंदोलन का इतिहास- मोहनदास नैमिशराय

12. नारीवादी राजनीति- जिनी निवेदिता

13. हिंदी दलित कथा साहित्य : अवधारणा एवं विधाएँ- रजत रानी 'मीनू'

14. औरत होने की सजा- अरविंद जैन

15. आदिवासी अस्मिता का संकट- रमणिका गुप्ता

Semester-I

Multidisciplinary Course

COURSE ID: 241/PHY/MD101

MODERN PHYSICS

Max. Marks: 50 **Credit: 3**
Internal Assessment: 25 **Time: 3 Hours**

Note: The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist of at least 4 parts covering entire syllabus. The question paper is expected to contain problems to the extent of 20% of total marks. The examinee will be required to attempt 5 questions; selecting one question from each unit and the compulsory.

Course Outcomes:

After successful completion of the course on Modern Physics, a student will be able to:

- *Understand the quantum theory of light and wave-particle duality.*
- *Describe Heisenberg uncertainty principle and linear superposition principle.*
- *Solve the Schrödinger equation for simple systems and interpret wave functions in terms of probabilities and normalization.*
- *Distinguish between different types of radioactive decays.*

Unit-I

Blackbody Radiation (observations and models), Plank's proposition and quantum theory of light, Photoelectric effect, X-rays, X-ray production, Compton scattering, Pair Production, De Broglie Waves, Davisson-Germer experiment. Wave description of particles by wave packets. Group and Phase velocities and the relation between them. Two-Slit experiment with electrons, Probability, Wave amplitude and wave functions, Rutherford Model, Hydrogen spectra and Bohr model of atom, Explanation of Hydrogen spectra, Nuclear mass effect on spectra of Atoms.

Unit-II

Position measurement- gamma-ray microscope thought experiment; Wave-particle duality, Heisenberg uncertainty principle (Uncertainty relations involving Canonical pair of variables, Estimating minimum energy of a confined particle using uncertainty principle; Energy-time uncertainty principle application to virtual particles and range of interaction. Two slit interference experiment with photons, atoms and particles; linear superposition principle as a consequence; Matter waves and wave amplitude; Schrodinger equation for non-relativistic particles; Momentum and Energy operators; stationary states; physical interpretation of a wave

function, probabilities and normalization; Probability and probability current densities in one dimension.

Unit-III

Solution of Schrodinger equation for one-dimensional problems: One dimensional infinitely rigid box- energy eigenvalues and eigenfunctions, normalization; Quantum dot as an example; Quantum mechanical scattering and tunnelling in one dimension-across a step potential & rectangular potential barrier.

Unit-IV

Nuclear Decay: Stability of the nucleus; Law of radioactive decay; Mean life and half-life; Alpha decay; Beta-decay- energy released, spectrum and Pauli's prediction of neutrino; Gamma-ray emission, energy-momentum conservation: electron-positron pair creation by gamma photons in the vicinity of a nucleus.

Lasers: Einstein’s A and B coefficients. Metastable states. Spontaneous and Stimulated emissions. Optical Pumping and Population Inversion. Three-Level and Four-Level Lasers. Ruby Laser and He-Ne Laser.

References/Books:

1. Concepts of Modern Physics, Arthur Beiser, 2009, McGraw-Hill
2. Modern Physics, John R. Taylor, Chris D. Zafiratos, M. A. Dubson,2009, PHI Learning
3. Six Ideas that Shaped Physics: Particle Behave like Waves, T. A. Moore, 2003, McGraw Hill
4. Quantum Physics, Berkeley Physics Course, Vol.4. E.H. Wichman, 2008, Tata McGraw-Hill Co.
5. Modern Physics, R.A. Serway, C.J. Moses, and C.A. Moyer, 2005, Cengage Learning.
   Modern Physics, G. Kaur and G.R. Pickrell, 2014, McGraw Hill

Semester-II

Multi-Disciplinary Course

COURSE ID: 241/PHY/MD201

SPECTROSCOPIC TECHNIQUES

Marks (Theory): 50 **Credits: 3**

Marks (Internal Assessment): 25 **Time: 3 Hours**

Note: The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist of at least 4 parts covering entire syllabus. The question paper is expected to contain problems to the extent of 20% of total marks. The examinee will be required to attempt 5 questions; selecting one question from each unit and the compulsory.

Course Outcomes:

After successful completion of the course on Spectroscopic Techniques, a student will be able to:

- *Understand the fundamental aspects of spectroscopy.*
- *Understand the basics, working principles and working of Optical and Thermal Characterization Techniques*
- *Carry out experimental and theoretical studies on atoms and molecules, with a focus on the Magnetic Characterization Techniques.*
- *Apply and analyze the electron microscopic techniques for real life problems.*

Unit-I

Fundamentals of Spectroscopy: Recapitulation and role of Quantum Mechanics, Electromagnetic Spectrum, Interaction of Electromagnetic Radiations with Matter, Heisenberg's Uncertainty Principle, Basic elements of Spectroscopy and its advantages, Einstein Coefficients, Transition Dipole Moment, Selection Rule based on Symmetry

Unit-II

Optical and Thermal Characterization Techniques: UV-Visible spectroscopy, Infrared spectroscopy, Atomic absorption spectroscopy (AAS), Raman spectroscopy, Thermo gravimetric analysis (TGA), Differential thermal analysis (DTA), Differential Scanning Calorimetry (DSC).

Unit-III

Magnetic Characterization Techniques: Mass spectroscopy, Nuclear Magnetic Resonance (NMR) and Electron Spin Resonance (ESR) spectroscopy, Mössbauer Spectroscopy.

Surface Analysis: X-ray absorption spectroscopy (XAS), X-ray photoelectron spectroscopy (XPS).

Unit-IV

Electron Microscopy: Interaction of electrons with solids, Scanning electron microscopy (SEM), Transmission electron microscopy (TEM), Scanning Probe Microscope (SPM): Atomic force microscopy (AFM), scanning tunneling microscopy (STM).

References/Books:

1. Fundamentals of molecular spectroscopy, Colin N. Banwell & Elaine M. McCash, Tata McGraw –Hill publishing company limited.
2. Molecular structure & spectroscopy, G. Aruldhas; Prentice – Hall of India, New Delhi.
3. Introduction to Molecular Spectroscopy by Gordon M Barrow, McGraw-Hill Inc. US.
4. Advanced Techniques for Materials Characterization, Materials Science Foundations (monograph series) A. K. Tyagi, Mainak Roy, S. K. Kulshreshtha and S. Banerjee, Volumes 49 – 51 (2009).

MULTIDISCIPLINARY COURSES (MDC)

Course Code MDC-01			Course Title Chemistry of Material				Course ID 241/CHE/MD/101				
L	T	P	L	T	P	Total Credits	MARKS				
(Hrs)			Credits				TI	TE	PI	PE	Total
3			3			3	25	50	-	-	75
							-	-			

Examination Duration:	**Theory**: 3 Hrs
Course Objectives	1. To introduce the fundamental concepts and importance of materials chemistry. 2. To provide an understanding of the classification and properties of different materials, including metals, ceramics, polymers, composites, and nanomaterials. 3. To explore the synthesis techniques and characterization methods used in materials chemistry. 4. To discuss the various applications of materials in electronics, energy, medicine, and environmental sustainability. 5. To emphasize the role of green chemistry and sustainable practices in the development and recycling of materials.
Course Outcomes:	After the completion of this course, student will be able to: 1. Understand the basic principles and importance of materials chemistry. 2. Classify materials into metals, ceramics, polymers, composites, and nanomaterials, and describe their structure-property relationships. 3. Explain the synthesis techniques such as solid-state synthesis, sol-gel process, hydrothermal synthesis, CVD, and PVD. 4. Apply characterization techniques like XRD, SEM, TEM, FTIR, and TGA to analyze materials. 5. Identify and evaluate the applications of materials in various fields such as electronics, energy, and medicine.

COURSE SYLLABUS

Note: 1. Question no. 1 is compulsory, which contains short answer type questions and to be set from the entire syllabus.

2. Eight questions will be set, two from each of the sections A, B, C & D. The candidates are required to attempt four questions in all selecting at least one question from each section. All questions shall carry equal marks.

3. The question paper must be set in consonance with course outcomes.

Unit No.	Contents	Contact Hrs
I	**Introduction to Materials Chemistry** Definition and importance of materials chemistry; Classification of materials: metals, ceramics, polymers, composites, and nanomaterials; Structure-property relationships in materials; Basic	11

	concepts of crystallography: unit cell, crystal systems, Bravais lattices.	
II	**Classes of Materials and Their Properties**; Metals and Alloys Structure, properties, and applications; Ceramics**:** Structure, properties, and applications; Polymers**:** Types of polymers, polymerization mechanisms, properties, and applications; Composites: Types, properties, and applications; Nanomaterials**:** Unique properties, synthesis methods, and applications.	**12**
III	**Synthesis and Characterization of Materials**; **Synthesis Techniques** Solid-state synthesis, sol-gel process, hydrothermal synthesis, chemical vapor deposition (CVD), and physical vapor deposition (PVD); Characterization Techniques: X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron microscopy (TEM), Fourier-transform infrared spectroscopy (FTIR), and thermogravimetric analysis (TGA)	**11**
IV	**Applications and Sustainability of Materials**; **Applications in Electronics** Semiconductors, conductors, and insulators; Applications in Energy: Batteries, fuel cells, and solar cells; Applications in Medicine: Biomaterials and drug delivery systems; Environmental and Sustainability Aspects: Recycling and waste management of materials; Green chemistry approaches in material synthesis	**11**

Suggested Books	1. Materials Science and Engineering: An Introduction by William D. Callister Jr., Wiley. 2. Introduction to Solid State Chemistry by Michael J. Van Valkenburg, Prentice Hall. 3. The Science and Engineering of Materials by Donald R. Askeland and Pradeep P. Phule, Cengage Learning. 4. Nanostructures and Nanomaterials: Synthesis, Properties, and Applications by Guozhong Cao and Ying Wang, Imperial College Press. 5. Fundamentals of Materials Science and Engineering by William D. Callister Jr. and David G. Rethwisch, Wiley. 6. Material Science and Metallurgy for Engineers by Dr. V.D. Kodgire and S.V. Kodgire, Everest Publishing House. 7. Materials Science and Engineering by V. Raghavan, Prentice-Hall of India.	
	Assessment and Evaluation	
Theory	Internal Assessment: 25 Marks	• Class Participation: 05 Marks • Seminar/Presentation/ Assignment: 05 Marks • Mid Term Exam: 15 Marks
	External Assessment: 50 Marks (03 Hours)	• End Term Exam: 50 Marks

MDC-1

Urdu Lisanyat MaxMarks:50

اردولسانیات

Objective:

اس کورس کا مقصد طلباء کے علم کو بہتر بنانا ہے۔لسانیات اوراس کی اقسام سے واقف کرانا ہے۔

Course Outcome:

اس پرچے کی مکمل تدریس کے بعد طلباءاس قابل ہوجائیں گے کہ

ا۔وہ لسانیات کی اقسام اس اصطلاحات سے واقف ہوجائیں گے۔

۲۔انہیں زبانوں کے خاندان اورزبان کے اعتبار سے خاندانی گروہ بندی سے واقفیت ہوجائے گی۔

۳۔زبان اور بولیوں کا مکمل علم ہاجائے گا۔

unit-1

لسانیات کی تعریف اوراقسام

unit-2

زبان اورلسانیات

unit-3

زبان اور بولیاں

unit-4

زبانوں کی نوعیاتی اور خاندانی گروہ بندی

کتب برائے مطالعہ

ا۔اردوزبان: تاریخی تشکیل،تقدیر،ازمسعود حسین

۲۔اردولسانیات،ازنصیراحمد ناصر

۳۔اردولسانیات،ازڈاکٹرشوکت سبزواری

۴۔ ہندوستانی لسانیات، از سید محی الدین قادری

۵۔ اردو زبان ولسانیات، از گوپی چند نارنگ

Instructions to the Paper-Setter and Students:

All questions are compulsory to attempt.

Unit-1 There will be two questions of which one is to be opted of 15 marks.

Unit-2 There will be two questions of which one is to be opted 15 marks.

Unit-3 There will be two questions of which one is to be opted 10 marks.

Unit-4 There will be two questions of which one is to be opted 10 marks.

MDC-2

Urdu Qawaid Max Marks:50

اردو قواعد

Objective:

۱۔اس کورس کا مقصد طلباء میں زبان کی قواعد کی اہم بحثوں سے واقف کرانا ہے مثلاً اعراب، سابقے لاحقے، املا۔

Course Outcome:

اس کورس کے مطالعہ کے بعد:

۱۔حروف تہجی اور اس کے ملاپ کا طریقہ اور اعراب کا علم ہوگا۔

۲۔سابقے لاحقے، اردو املا اور مذکورہ بالا قواعدی مبحث کا اندازہ اور زیادہ اس وقت روشن ہوگا جب کسی اقتباس میں ان کی نشان دہی کی جائے گی۔

unit-1

حروف تہجی

unit-2

حروف تہجی کے ملاپ کا طریقہ

unit-3

اعراب

unit-4

سابقے اور لاحقے

کتب برائے مطالعہ

۱۔قواعد اردو، از عبدالحق

۲۔زبان اور قوائد، از رشید حسن خاں

Instructions to the Paper-Setter and Students:

All questions are compulsory to attempt.

Unit-1 There will be two questions of which one is to be opted of 10 marks.

Unit-2 There will be two questions of which one is to be opted 15 marks.

Unit-3 There will be two questions of which one is to be opted 15 marks.

Unit-4 There will be two questions of which one is to be opted 10 marks.

MDC-3

Urdu Novel Max Marks:50

اردو ناول

Objective:

ا۔طلبہ کو اردو ناول کے فن اور اس کے رموز و نکات سے واقف کرایا جائے۔

۲۔اردو ناول کی روایات سے روشناس کرایا جائے اور طلبہ میں ناول کے قدیم و جدید اسالیب کی تعلیم کے ذریعے فرد اور سماج کے مابین پیچیدہ رشتوں کا فہم پیدا کیا جائے۔

۳۔بیسویں صدی کے اوائل تک اردو میں اس صنف کے Milstones کے گہرے تجزیاتی مطالعے کے ذریعے اس صنف کی اہمیت کی طرف طالبہ کو متوجہ کیا جائے۔

Outcome:

اس پرچے کی تعلیم کو کامیابی کے ساتھ مکمل کرنے کے بعد طالب علم اس قابل ہوگا کہ:

ا۔ناول کے فن، اس کے اسالیب اور پیشکش کے مختلف طریقوں کو سمجھ سکے۔اردو ناول کی روایت کے مختلف پہلوؤں میں تمیز کر سکے۔

۲۔جن شاہکاروں کا اس نے مطالعہ کیا ہے ان کو معیار بنا کر بعد میں دوسرے ناولوں کا تجزیہ اور ان کا مرتبہ متعین کر سکے۔

۳۔ناول کے لامحدود موضوعات اور اسالیب کے ذریعے فرد اور معاشرے کے پیچیدہ رشتوں کا تخلیقی شعور حاصل کر سکے۔

unit-1

ناول کی تعریف اور فنی لوازمات

unit-2

ناول نگاری کا ابتدائی دور

unit-3

امراؤ جان ادا کا تنقیدی جائزہ

unit-4

ترقی پسند تحریک اور اردو ناول

کتب برائے مطالعہ

ا۔ناول کا فن، نورالحسن ہاشمی

۲۔ناول کا فن، ابا الکلام قاسمی

۳۔برصغیر میں اردو ناول، ڈاکٹر خالد اشرف

۴۔اردو ناول کی تاریخ و تنقید، علی عباس حسینی

Instructions to the Paper-Setter and Students:

All questions are compulsory to attempt.

Unit-1 There will be two questions of which one is to be opted of 10 marks.

Unit-2 There will be two questions of which one is to be opted 10 marks.

Unit-3 There will be two questions of which one is to be opted 15 marks.

Unit-4 There will be two questions of which one is to be opted 15 marks.

MDC-04

Tarjuma Nigari Max Marks:50

ترجمہ نگاری

Objective:

اس پرچے کا مقصد یہ ہے کہ:

۱۔طلبہ کو ترجمہ نگاری کے رموز ونکات سے واقف کرایا جائے۔

۲۔ترجمہ نگاری کی فنی قدر و قیمت کو واضح کرتے ہوئے اس کے تحقیقی وغیر تحقیقی امکانات سے روشناس کرایا جائے۔

۳۔نمائندہ ادب پاروں کے تراجم کے ذریعے طلبہ میں ترجمہ نگاری کا ماہرانا شعور پیدا کیا جائے۔طلبہ کو ترجمہ نگاری کے مختلف اسالیب کا فہم پیدا کیا جائے۔

Course Outcome:

اس پرچے کی تعلیم کو کامیابی کے ساتھ مکمل کرنے کے بعد طالب علم اس قابل ہوگا کہ:

۱۔ترجمہ نگاری کے فن، اس کی اقسام، پیشکش اور اطلاق کے مختلف طریقوں کو سمجھ سکے۔

۲۔نثر اور شاعری کے تراجم میں امتیاز کر سکے۔

۳۔اردو، ہندی اور انگریزی کے ذریعے مختلف تخلیقی / غیر تخلیقی متون کا جامع ترجمہ کر سکے۔

unit-1

اردو ترجمے کی تعریف، فن، ارتقاء

unit-2

ترجمے کی ضرورت واہمیت

unit-3

ترجمے کے بنیادی مسائل

unit-4

اردو سے ہندی میں ترجمے کے مسائل

کتب برائے مطالعہ

۱۔ترجمے کی روایت، مرزا حامد بیگ

۲۔فن ترجمہ نگاری، پروفیسر ظہر الدین

۳۔فن ترجمہ نگاری، خلیق انجم

Instructions to the Paper-Setter and Students:

All questions are compulsory to attempt.

Unit-1 There will be two questions of which one is to be opted of 15 marks.

Unit-2 There will be two questions of which one is to be opted 15 marks.

Unit-3 There will be two questions of which one is to be opted 10 marks.

Unit-4 There will be two questions of which one is to be opted 10 marks.

MDC-1	History and culture of Haryana

Credit: 3(Hrs/Week : 3) **Maximum Marks: 75**
241/HIS/MD105 **Theory Examination: 50**
Internal Assessment: 25
Time: 3 Hours

Course Outcomes: After the completion of the course, the students will be able to :

- Have a brief understanding of the history of Ancient Haryana from the earliest times through sources, origins of civilization and empire building.
- Understand the medieval period as visible in sources and through study of important political, social and economic structures in Sultanate and Mughal periods.
- Appreciate the development of National movement and the consequent changes brought about colonial rule.
- Able to grasp general features of the geographical landscape of Haryana as well its climatic zones, Understand the cultural aspects of Haryana including tourism and heritage and appreciate the reasons for economic growth, industrial and agricultural progress, demographic profile and development of infrastructure and social welfare schemes.

UNIT I: Ancient Haryana

Sources of Ancient Period, Harappan Civilization: General Features, Growth of Vedic Civilization and Historicity of battle of Mahabharata, From Republic to Empire: Yaudheyas, Agras and Kunindas; Pushpabhutis

UNIT II: Medieval Haryana:

Sources of Medieval Period, Gurjara- Pratiharas; Tomaras; Chahamanas, Sultanate Period: Haryana on the Eve of Turkish Invasion; Revolts of Meos and Rajputs; Provincial Administration-Iqta system; Economic, Social and Cultural Changes. Mughal Period: Battle of Panipat and Hemu, Pargana Administration, Economy-Land Revenue System ,Industries and Commerce, Socio-Religious Movement-Bhakti and Sufi: Spread and Impact

UNIT III: Modern Haryana: Sources of Modern Period, Political: Emergence of Marathas, Jats and Sikhs; George ,Thomas Socio-Religious Movements in Haryana: a. Arya Samaj, b. Sanatan Dharam Development of Education in Colonial Haryana; Political Movements: i. Revolt of 1857; ii. Rise of Political Consciousness; iii. National Movement (1885-1919); iv. 1920- 1947: Mass Movements; Non Cooperation; Civil Disobedience; Praja Mandal, Quit India Movement; Regional Consciousness-Unionist Party.

Unit IV: Haryana: A brief overview:

Geographical landscape including natural resources, climatic features, economic status including industries, agriculture, infrastructural development ,demographic profile, tourism and culture and major social welfare schemes launched by the State Government.

Suggested Readings:

- Buddha Prakash, Haryana through the Ages, Kurukshetra University, Kurukshetra, 1962.
- Glimpses of Haryana, Kurukshetra University, Kurukshetra, 1969.
- Das Gupta, K.K., Tribal History of Ancient India,

- Devahuti, D., Harsha: A Political Study, Oxford Clarendom Press, 1970.
- Dwivedi, H.N., Dilli ke Tomar (736-1193), Vidya Mandir Prakashan, Gwalior, 1973.
- Goyal, J.B., (ed.) Haryana-Puratattna, Itihas, Sanskriti, Sahitya evom Lokwarta, Delhi, 1966.
- Gupta, S.P. & Rama & Chandran, K.S., Mahabharata: Myth and Reality, Agam Prakashan, New Delhi, 1976.
- Phadke, H.A. Haryana: Ancient and Medieval, Harman Publication House, New Delhi, 1990.
- Phogat, S.R., Inscriptions of Haryana, Kurukshetra University Kurukshetra, 1978.
- Puri, B.N., History of Gurjar-Prathiharas, Munshiram Manoharlal, New Delhi, 1968.
- Sen, S.P. (Ed.), Sources of the History of India, Vol. II, Munshiram Manoharlal, New Delhi, 1979. Sharda, Sadhu Ram, Haryana-Ek Sanskritik Adyayan, Bhasha Vibhag, Haryana, Chandigarh, 1978. Sharma, D., Early History of Chahamanas, Delhi, 1959.
- Suraj Bhan, Excavations at Mithathal (1968) and other Explorations in Satluj Yamuna Divide, Kurukshetra University, Kurukshetra, 1975.
- Tripathi, R.S., History of Kanauj, Munshiram Manoharlal, New Delhi, 1964.
- Yadav, K.C., Haryana: Itihas evom Sanskriti, Part 1 & 2, Manohar Publisher, New Delhi, 1994 (2nd Ed.)
- Important state government sites for latest updates and relevant editorial articles.

MDC-2	Historical Applications of Tourism

Credit: 3 (Hrs/week:3) **Maximum Marks: 75**
241/HIS/MD205 **Theory Examination: 50**
Internal Assessment: 25
Time: 3 Hours

Course Outcome: After completion of the course, the students will be able:

- To familiarize with the knowledge related to tourism vis a vis types, services, determinants and destination.
- Understanding of relation of history and tourism, infrastructures and hurdles in tourism growth.
- Able to compare some important tourist destinations in terms of their specialities .
- Have a greater knowledge of tourism in Haryana and its culture

Unit I : Meaning and Nature of Tourism :

Tourism: Defining, Forms and types, tourism products and services, tours, tourists and the tourist destination, basic determinants of tourism, brief history of tourism in India

Unit II: Development of travel and tourism

History as Tourism product , Use of History in tourism, infrastructural development, threats and obstacles to tourism

Unit III: Types of Tourist destination in India –

Monuments- Museums- Hill resorts, Sarais- Beaches- Wild life Sanctuaries, Important Heritage Circuits of India(case study of any one)

A. Delhi- Agra-Jaipur {Golden Triangle}
B. Sanchi-khajuraho
C. Belur-Halebidu- Hampi
D. Mahabalipuram – Kanchipuram- Tanjore

Unit IV: Tourism in Haryana

Socio- Cultural Heritage of Haryana: tourist spots,Dance Styles, Performing Arts- Fairs and Festivals, Folk Cultures- Handicrafts and food.

Suggested Readings

- Jafari, Jafar (Chief Editor), **Encyclopaedia of Tourism**, Routledge Publisher, London, 2000
- **IGNOU** Reading material (units) on Tourism.
- Archaeological Survey of India, Guide Books for Monuments
- Bhatia,A.K., Tourism Development: Principles and Practices, Sterling Publishers, New Delhi, 2007
- Husain, S. A., The National Culture of India, NBT, New Delhi Krishnadeva, Temples of North India

- National Cultures of India and Dance Forms of India, NBT, New Delhi
- Rajendhraprasad, B., The Art of South India, Andhra Pradesh
- Ramraju, B., Folk Cultures of India
- Sivaramamurthy, C., Indian Painting
- Srinivasan, K.R., Temples of South India

Multidisciplinary Course from the department for pool of the Courses in the University

(These courses are to be offered to students of different discipline/Subject by Department of Psychology)

M.Sc. Psychology

Semester- I

MDC-1 Behavioral & Personality Dynamics (241/MPSY/MD 101)

Credits: 3 (Hrs./week:3) **Maximum Marks:75**

Theory Examination: 35
Internal Assessment: 15
Practical Examination: 20
Practical Assessment: 05
Time: 3 hrs.

Course Outcomes

- Students will be able to demonstrate a comprehensive understanding of different theories and approaches to personality from both psychoanalytic and behavior analysis perspectives.
- Students will be able to evaluate the influence of biological and psychological factors on the development of personality.
- Students will be able to apply various psychological assessment techniques to analyze and interpret personality traits.

Unit-I

- Introduction to Personality: Definitions and Meaning, Nature vs Nurture approaches to Personality, Determinants of Personality: Biological and Psychological.

Unit-II

- Psychoanalytic approaches to Personality: Freud, Jung, Adler
  Behavior analysis: Classical Conditioning & Operant Conditioning

Unit-III

- Psychological Assessment: Personality Assessment, Interview, Observation, NEO-FFI, EPQ

Suggested Readings:

1. Kaplan R.M & Saccuzzo D.P (2007), "Psychological testing: Principles Applications & Issues", Thomson- Wadsworth, Sixth edition, Indian Reprint
2. Anatasi Anne & Urbina Susana (2003), "Psychological testing", Pearson Education, seventh edition, Indian Reprint, New Delhi
3. Aiken L.R & Marhat- Groth G (2009), "Psychological Testing & Assessment", Pearson Education, Twelfth edition, Indian Reprint, New Delhi
4. Hall, G.S., & Lindzey, G. (1985). *Theories of personality* (3rd ed.). New Delhi: Wiley Eastern.
5. Olson, M., &Hergenhahn, B. R. (2011). *An introduction to theories of personality, 8the Edition.* New York: Pearson. [Chapter 15 "Abraham Maslow", pp. 466-499; Chapter 16 "Rollo Reese May", pp. 500-526].
6. Shultz, D.P. & Shultz, S. E. (2012). *Theories of personality*. USA: Wadsworth, Cengage Learning.

M.Sc. Psychology

Semester- II

MDC-2 Psychology of Happiness & Peace (241/MPSY/MD 201)

Credits: 3 **Maximum Marks:75**

Theory Examination: 35
Internal Assessment: 15
Practical Examination: 20
Practical Assessment: 05
Time: 3 hrs.

Course Outcomes

- Students will be able demonstrate an understanding of happiness from both Western psychological perspectives and Eastern philosophical traditions.
- Students will be able how social, cultural, and environmental factors influence individual and collective happiness.
- Students will be able apply knowledge of happiness to analyze contemporary issues such as social media impact, materialism, and mental health.

Unit-1

- Locating Happiness in Psychological Approaches- Psychological definitions of Happiness, Biology of happiness, Personality and happiness, Theories and models for attaining happiness, social markers of Happiness, Objective measurements of happiness

Unit-2

- Eastern Traditions of Happiness and its relationship with Peace-Buddhist and Hindu view of Happiness, Meditation and Mindfulness, Morality and Happiness

Unit-3

- Deconstructing Happiness in the Contemporary world-Happiness and social media, Cage of Materialism, Happiness-suicide paradox, Overt mobile based happiness- covert narcissist vulnerability

Suggested Readings:

1. A, J. (2014). Towards a Developmental Understanding of Happiness. *SociologicalResearch Online*.
2. J, M. (2015). *Theories of Happiness: An Anthology*. Broadview Press.
3. L, L. (2014). Person-Oriented Conception of Happiness and Some PersonalityTheories. *Sage Open*.
4. N, L. (2016). The Views on Happiness: A Dialectic Approach. *Vision: The Journal ofBusiness Perspective*.
5. S, O. (2013). Concepts of Happiness Across Time and Cultures. *Personality and SocialPsychology Bulletin*.
6. T, C. (2011). Effects of Intensive Mobile Happiness Reporting in Daily

Life. *SocialPsychological and Personality Science*.

7. Batthyany, A., Russo-Netzer, P. (Eds.). (2014). *Meaning in Positive and ExistentialPsychology*. Springer.

M.Sc. Psychology
Semester-I

The student has to opt one from the following two discipline specific courses

DSE-01 Climate Change and Mental Health (241/MPSY/DS 105)
Credit: 3

Maximum Marks: 75
Theory Examination: 50
Internal Assessment: 25
Time: 3 Hour

Course Outcomes:

- Students will be able to comprehend the complex interplay between climate change and mental health, including psychological responses and societal impacts.
- Students will be able to develop skills in building resilience and applying coping strategies to mitigate climate-related psychological distress.
- Students will be able to apply knowledge of evidence-based psychotherapeutic interventions to support individuals and communities affected by climate change.

Unit 1

Understanding the Intersection of Climate Change and Mental Health

Introduction to Climate Change and Mental Health: Definitions and concepts, Impacts of Climate change: Individuals, Communities & Society; problem of Inequity

Psychological Outcomes of Climate Change: Anxiety, stress, and depression, Grief and loss, Trauma and PTSD

Unit 2

Psychological Resilience and Coping Strategies

Building Resilience in the Face of Climate Change: Resilience and its theory, Coping mechanisms and adaptive strategies

Climate Change Communication and Perception: Media portrayal of climate change, Cognitive biases and decision-making, Effective communication strategies, Climate Change Solutions

Unit 3

Psychotherapy and Mental Health Interventions

Evidence-based interventions for climate-related distress**,** Support systems and community resources

Suggested Readings:

1. "The Age of Sustainable Development" by Jeffrey D. Sachs
2. "Climate Change and Human Health: Risks and Responses" by Anthony J. McMichael
3. "The Psychology of Climate Change Communication" by Britt Wray
4. Various academic articles and case studies provided throughout the course.
5. "Mental Health and Our Changing Climate: Impacts, Inequities, and Responses" by the American Psychological Association (APA)
6. "Climate Anxiety and the Kid Question" by Jade S. Sasser

M.Sc. MATHEMATICS 1st SEMESTER
Aptitude Reasoning-I

MDC-01 Maximum Marks: 75
Credits: 3(2L+1T) External Examination: 50
Max. Time: 3 hrs. Internal Assessment: 25
Course ID: 241/MAT/MD101

Note:*There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of five short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Students will have to attempt one question from each unit. Each question shall carry equal marks.*

Course Learning Outcomes:

CLO1 Develop proficiency in number systems, LCM/HCF, decimal fractions, simplification, roots, and discounts.
CLO2 Acquire skills in applied math: profit/loss, interest, speed/distance, area, height.
CLO3 Analyze data through tables, column graphs, bar graphs, and line charts.
CLO4 Deduce reasoning skills: analogies, blood relations, directions, series, and clocks

Unit-I

Quantitative Ability (Basic Mathematics): Number Systems, LCM and HCF, Decimal Fractions, Simplification, Square Roots and Cube Roots, Discount.

Unit-II

Quantitative Ability (Applied & Engineering Mathematics): Profit and Loss, Simple and Compound Interest, Time, Speed and Distance, Area, Height and Distance.

Unit-III

Data Interpretation: Data Introduction, Tables, Column Graphs, Bar Graphs, Line Charts.

Unit-IV

Logical Reasoning (Deductive Reasoning): Analogy, Blood Relation, Directional Sense, Number and Letter Series, Clocks.

Reference Books:

1. A Modern Approach To Verbal & Non Verbal Reasoning By R S Agarwal
2. Analytical and Logical reasoning By Sijwali B S
3. Quantitative aptitude for Competitive examination By R S Agarwal
4. Analytical and Logical reasoning for CAT and other management entrance test By Sijwali B S
5. Quantitative Aptitude by Competitive Examinations by Abhijit Guha 4th edition.

M.Sc. MATHEMATICS 2nd SEMESTER

Aptitude Reasoning-II

MDC-02 Maximum Marks: 75

Credits: 3(2L+1T) External Examination: 50

Max. Time: 3 hrs Internal Assessment: 25

Course ID: 241/MAT/MD201

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of five short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Students will have to attempt one question from each unit. Each question shall carry equal marks.*

Course Learning Outcomes:

CLO1 Acquire quantitative skills in averages, ages, surds, indices, percentages, and number-based problems.

CLO2 Develop skills in logarithms, permutations, combinations, probability, time/work, ratios, mixtures, volumes, and boat/stream problems.

CLO3 Analyze data using interpretation, pie charts, and Venn diagrams.

CLO4 Deduce reasoning through coding-decoding, calendars, Venn diagrams, seating arrangements, syllogism, and mathematical operations.

Unit-I

Quantitative Ability I: Average, Problems on Ages, Surds & Indices, Percentages, Problems on Numbers.

Unit-II

Quantitative Ability II: Logarithm, Permutation and Combinations, Probability, Time & Work, Ratio and Proportion, Mixtures and Allegation, Volume, Problem on boat and stream.

Unit-III

Data Interpretation: Data Interpretation, Pie Chart, Venn Diagrams.

Unit-IV

Logical Reasoning (Deductive Reasoning): Coding – Decoding, Calendars, Venn Diagrams, Seating Arrangement, Syllogism, Mathematical Operations

Reference Books:

1. A Modern Approach To Verbal & Non Verbal Reasoning By R S Agarwal
2. Analytical and Logical reasoning By Sijwali B S
3. Quantitative aptitude for Competitive examination By R S Agarwal
4. Analytical and Logical reasoning for CAT and other management entrance test By Sijwali B S
5. Quantitative Aptitude by Competitive Examinations by AbhijitGuha 4 th edition

241/ECO/MD101	Introduction to Economics

Max. Marks: 75 **Written Exam: 50**

Credits: 3 **Internal Assessment: 25**

Note for the paper Setter

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).
3. For the remaining six questions, students will attempt 1 out of 2 questions from each of the three units (12 marks each).

UNIT – I

Definition of Economics, Nature and scope of Economics, Basic Economic Problem - Choice and Scarcity, Basic Central Problems of an Economy, Positive and Normative Economics, Types of economies and their characteristics, Microeconomics Vs Macroeconomics

UNIT– II

Demand, Market Demand, Law of Demand, Demand Determinants, Supply, Market Supply, law of Supply, Price Mechanism – Meaning and working Mechanism.

Macroeconomic Issues of an Economy, Circular Flow of Income – Two sector, Three sector and four sector Model.

UNIT – III

Underdevelopment: Meaning and characteristics, Economic Growth and Development-Meaning, Determinants of Economic Development, Obstacles of Economic Development, Sustainable Development: Meaning, features, Importance.

241/ECO/MD201	Financial Institutions and Market

Max. Marks: 75 **Written Exam: 50**

Credits: 3 **Internal Assessment: 25**

Note for the paper Setter

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).

For the remaining six questions, students will attempt 1 out of 2 questions from each of the three units (12 marks each).

Course Objectives: The objective of this paper is to introduce students to role and functioning of financial markets, financial products that are traded in such financial markets and institutions associated with financial markets. It explains the role of financial system on economic development. This will enable students to take the rational decision in financial environment.

UNIT-I

Structure of Indian Financial System

An overview of the Indian financial system. Commercial Banking: Role of Banks. RBI: objectives and functions, NBFCs: types and difference between Banks and NBFCs, SEBI: objectives and functions.

UNIT-II

Introduction to Financial Markets in India

Role and Importance of Financial Markets, Types of Financial Markets: Money Market; Call money market; treasury bill market; Capital Market; Linkages Between Economy and Financial Markets.

UNIT-III

Introduction to Stock Markets

Major Instruments traded in stock markets: Equity Shares, Debentures, Exchange Traded Funds.Mutual Fund: types of Mutual Funds and different types of schemes. Corporate Bonds vs. Government Bonds.

Human Resource Management

241/MBA/MD101

Credits: 3

Marks: 50

External Marks: 50

Internal Marks: 25

Time Allowed: 3 Hrs

Type of Course: Multidisciplinary Course

Course Objectives:

The Objective of this course is to provide students with a conceptual understanding of HR Concepts and its usage in organizations. This will also impart the skills required in applying theory to practice for effective decision making.

Course Outcomes: **On the completion of this course the student will be able to:**

CO1: Understand the theories and concepts of Human Resource Management for strategic human resource planning.
CO2: Apply the knowledge of HRM concepts for holistic development of an individual at group as well as organizational level.
CO3: Analyze the significance of HR practices for the enhancement of competitive advantage in the globalized environment.
CO4: Evaluate the HR policies and strategies under different scenarios and its effectiveness for goal attainment, change management and critical problem solving.

Detailed Syllabus:

UNIT-I

Introduction to HRM: Objectives, challenges to HR professionals; role, responsibilities and competencies of HR professionals; HR department operations; human resource planning – objectives and process; human resource information system; Linkage between HRM and Strategic Management; Introduction to Strategic Human Resource Management and HRD

UNIT-II

Talent acquisition: Job Analysis, recruitment and selection strategies, career planning and management, succession planning, socialization and induction of new employees; training and development, investment in training, training need assessment, executive development programme, evaluation of T & D programme

UNIT-III

Performance Appraisal: Concept, objectives, process, Methods of Performance Appraisal, Performance Management, linking rewards to organizational objectives, Job Evaluation, Compensation Management and incentive plans, Executive Compensation.

UNIT-IV

HR in knowledge era: HR in knowledge industry, HR in virtual organizations, HR in mergers and acquisitions, outplacement, outsourcing HR functions, employee leasing, HR audit, international HRM, Cultural Intelligence and Impact on Work.

SUGGESTED READINGS:

1. Ivanceivich, John M., Human Resource Management, Tata McGraw Hill, New Delhi
2. Gomez. Megia, Luis, David Balkin, and Roberty Cardy, Managing Human Resources, Pearson Education
3. Dessler, G., & Biju, V, Human Resource Management. Pearson Education., New Delhi
4. Mathis, Robert, and John Jackson, Human Resource Management, Thomson Learning Inc.
5. Shell, Scott and George Bohlander, Human Resource Management, Thomson Learning Inc.
6. Pattanayak, Biswajert, Human Resource Management, PHI, New Delhi
7. Jyothi P., and D.N.Venkatesh, Human Resource Management, Oxford University Press, New Delhi
8. Hodegetts, R.M., Luthans, F., Doh, J., International Management: Culture, Strategy and Behaviour, Tata McGraw Hill, New York.

Mapping Matrix of Course:24MGMDC1

Table 1: CO-PO & CO-PSO Matrix for the Course 24MGMDC1: Human Resource Management

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2
CO1	3	2	1	2	2	3	2	2	2	2
CO2	3	2	2	2	3	2	3	3	3	3
CO3	2	3	2	3	2	2	2	2	3	2
CO4	2	3	2	2	3	3	2	3	2	3
Average	2.5	2.5	1.75	2.25	2.5	2.5	2.25	2.5	2.5	2.5

Marketing Management
24MGMDC2

Credits:3
Externa Marks: 50 (TE)

Internal Marks: 25(TI)
Time Allowed: 3 Hrs
Type of Course: Multidisciplinary Course

Course Objectives:

Marketing management course enables a student to understand the fundamentals of marketing concept and the role marketing plays in business. This course enables a student to understand the 'Marketing mix' elements and the strategies and principles underlying the modern marketing practices. Students should be able to demonstrate their comprehension of marketing concepts and knowledge by applying those in their written exams, case studies discussions, presentations and projects. The assignments/projects would enable students to apply the marketing concepts and marketing mix elements practically and illustrate those through a written report and presentation. The course methodology encourages students to explore for themselves the role of a marketing manager and the boundaries of marketing.

Course Outcomes:
On the completion of this course the student will be able to:
CO1: Memorize and understand the various concepts of marketing and their relevance in the global business environment.

CO2: Apply marketing process and tools for value based strategic decision making for global market leadership.

CO3: Analyze the significance of marketing communication for competitive positioning of products or services.

CO4: Evaluate the marketing strategies through creative thinking ability under various scenarios.

Detailed Syllabus:

UNIT I

Meaning, Scope, Nature, Importance, Recent Trends and application; Challenges in Marketing, Core concepts of Marketing, Marketing Myopia, elements of marketing environment, creation of value chain.

UNIT II

Marketing Plan and Strategy; Market Segmentation, Bases for Segmentation, Market Targeting, Developing and Communicating Positioning Strategy, identification and managing competition, new product development

UNIT III

Consumer and Business Markets; Product Classification, Product life cycle – stages and strategies, managing product and services along PLC and Product Differentiation, Developing Pricing Strategies and Programs, Role of Marketing Channels.

UNIT IV

Marketing communication framework and personal selling; Communication (viral marketing, experiential marketing), Marketing Control, Emerging trends of digital marketing, role of social media in marketing, understanding the challenges of global marketing

SUGGESTED READINGS:

1. Kotler Philip and Keller; Marketing Management; PHI, New Delhi
2. Kotler, Philip, Kevin Keller, A. Koshy and M. Jha, Marketing Management in South Asian Perspective, Pearson Education, New Delhi
3. Kerin, Hartley, Berkowtz and Rudelius, Marketing, TMH, New Delhi.
4. Etzel, Michael J, Marketing: Concepts and Cases, TMH, New Delhi
5. Dhunna, Mukesh, Marketing Management – Text and Cases, Wisdom Publications, New Delhi

Mapping Matrix of Course :24MGMDC2

Table 1: CO-PO & CO-PSO Matrix for the Course 24MGMDC2: Marketing Management

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2
CO1	3	2	1	2	2	3	2	2	2	2
CO2	3	3	3	3	3	2	3	2	3	3
CO3	2	2	2	3	3	2	2	3	3	2
CO4	3	3	2	2	2	3	3	2	2	3
Average	2.75	2.5	2	2.5	2.5	2.5	2.5	2.25	2.5	2.5

Multidisciplinary Course from the department for pool of the Courses in the University

Master of Social Work

Semester - I

Social Outreach and Community Engagement

MDC-1

Credits: 3 (Hrs./Week: 3)

Maximum Marks: 75
Theory Examination: 35
Internal Assessment: 15
Practical External: 20
Practical Internal: 5

Note: The students will be required to attempt four questions in all. Question No. I will be compulsory comprising of 4 short answer type questions of 2 marks each and will cover the entire syllabus 4X 2 = 8 marks. In addition to it, Question Nos. II to VII will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 14 marks each i.e. 3 X 14 = 42 marks thus making it the total weight age to 50 marks .Three questions to be attempted. One from each unit.

Course Outcomes:

- Understand Community and its dynamics
- Acquire knowledge of the theoretical foundations and ethical principles guiding community practice.
- Apply acquired knowledge and skills to effectively engage in diverse community settings.

Unit-I

Foundation of Social Outreach and Social Work

- Introduction to social outreach and community engagement: Importance, historical perspectives, and key principles.
- Basics of social work: Core values, ethics, and Principles
- Methods of Social Work
- Fields of Social Work

Unit-II

Understanding Community

- Community: Meaning, Definition, Types
- Indigenous Approaches
- Models of Community Practice
- Understanding Community-Based Organizations

- Skills for Practitioners

Unit-III
Rural Community Development

- Rural Community in India: Issues and Challenges
- Rural Development policies and programs at the national and state levels
- Role of Non-Government Organizations, SHG, Microfinance Institutions etc

Unit-IV
Urban Community Development

- Urban Community: Basic Concepts
- Urban Community in India: Issues and Challenges
- Urban development policies and programs at the national and state levels
- Role of Non-Government Organization

Suggested Readings:

Cox, F., & Pawar, M. (2018). International Community Development: Practice, Policy and Research. Routledge.
Gangrade K. D. (2001). Working with Community at the Grassroots Level: Strategies and Programmes. Radha Publications.
Gangrade, K. D. (2001). Working with Community at the Grassroots Level: Strategies and Programmes. Radha Publications.
George, S. (2017). Community Organization and Development Practice in India. Rawat Publications.
Hardcastle, D. A., Powers, P., & Wenocur, S. (2018). Community Practice: Theories and Skills for Social Workers. Oxford University Press.
Kirst-Ashman, K. K., & Hull, G. H. (2018). Understanding Generalist Practice. Nelson Education.
McKnight, J., & Plummer, J. M. (2014). Community Organizing: Theory and Practice (Advancing Core Competencies). Pearson.
Misra, R. (2019). Community Development: An Indian Perspective. SAGE Publications India.
Popple, K. (2015). Analysing Community Work: Theory and Practice. Open University Press.
Ahuja, R. (2014). Social Problems. Rawat Publications.
Gangrade, K. D. (2001). Working with Community at the Grassroots Level: Strategies and Programmes. Radha Publications.
Hardcastle, D. A., Powers, P., & Wenocur, S. (2018). Community Practice: Theories and Skills for Social Workers. Oxford University Press.

Master of Social Work
Semester -

Master of Social Work
Semester - II
Environmental Concerns and Social Work

MDC-2
Credits: 3 (Hrs./Week: 3)

Maximum Marks: 75
Theory Examination: 50
Internal Assessment: 25

Note: The students will be required to attempt four questions in all. Question No. I will be compulsory comprising of 4 short answer type questions of 2 marks each and will cover the entire syllabus 4X 2 = 8 marks. In addition to it, Question Nos. II to VII will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 14 marks each i.e. 3 X 14 = 42 marks thus making it the total weight age to 50 marks .Three questions to be attempted. One from each unit.

Course Outcomes:

- Demonstrate a nuanced understanding of the complex interrelationships between human societies and their environmental contexts.
- Critically analyse the differential impacts of environmental changes on marginalized groups
- Integrate Ecological Social Work principles and practices into the Social Work profession

Unit-I
Understanding the Environment and Environmental Social Work

- Definition and components of the environment
- Differential impact of environmental degradation on marginalized groups
- Context, significance, and scope of Environmental Social Work

Unit-II
Environment, Development, and Sustainability

- The interface between environment and development
- Implications of environmental sustainability for food security, livelihoods, energy, and community well-being
- Concept, potentialities, and challenges of Sustainable Development

Unit-III
Global and National Environmental Issues

- Climate change: Social implications and consequences such as disasters, food shortages, migration, and conflict
- Constitutional provisions, policies, and legislative framework related to environmental conservation
- UN and Climate Change

Unit-IV
Approaches to Environmental Conservation and Movements

- Deep Ecology, Eco-feminism, Eco-Socialism, and community-based natural resource management
- Typology and ideologies of environmental movements
- Role of civil society organizations in addressing environmental issues

Suggested Readings:

Trivedi, V. (2011). Environment and social concerns (1st ed.). Concept Publishing Company Pvt. Ltd.

Gray, M., Coates, J., & Hetherington, T. (Eds.). (2013). *Environmental social work* (1st ed.). Routledge.

Yadav, S., Negm, A. M., & Yadava, R. N. (Eds.). (2024). Environmental management in India: Waste to wealth. Springer.

Agnimitra, Neera., Bhatt, Sanjay. (2014). *Social Work Response to Environment and Disaster(Ed),* Shipra Publication.

Agnimitra Neera. (2014). *Going Green – Women and Grassroots Environmentalism*, Shipra Publication

Dominelli, L. (2012*). Green social work – From environmental crises to environmental justice.* Rawat Publication

Grey, M., Coates, J., & Hetherington, T. (2013). Environmental social work. New York: Routledge.

Rogers, P., Jalal, K., & Boyd, J. (2008). An introduction to sustainable development. London: Earthscan.

Agarwal, B. (2015). Gender and green governance: the political economy of women's presence within and beyond community forestry. Oxford: Oxford University Press.

Carter, N. (2007). The politics of the environment: Ideas, activism, policies (2nd edition). London: Cambridge University Press.

Roser, D., & Seidel, C. (2017). Climate justice: An introduction. New York: Routledge.

Mies, M., & Shiva, V. (2010). Ecofeminism. Jaipur: Rawat Publications.

Sessions, G. (1995). Deep ecology for the 21st century: Readings on the philosophy and practice of the new environmentalism. Boston: Shambhala Publications.

Guha, R., & Alier, J. (1997). Varieties of environmentalism: essays north and south. New York: Routledge.

Rangarajan, M. (2006). Environmental issues in India. New Delhi: Pearsons.

Master of Social Work Semester
– III
NGO Management

MDC-3
Credits: 2 (Hrs./Week: 2)

Maximum Marks: 73
Theory Examination: 50
Internal Assessment: 25

Note: The students will be required to attempt four questions in all. Question No. I will be compulsory comprising of 4 short answer type questions of 2 marks each and will cover the entire syllabus 4X 2 = 8 marks. In addition to it, Question Nos. II to VII will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 14 marks each i.e. 3 X 14 = 42 marks thus making it the total weight age to 50 marks .Three questions to be attempted. One from each unit.

Course Outcomes:

- Understanding the Importance and Significance of NGO
- Proficiency in navigating legal requirements and frameworks governing NGOs in India and South Asia.
- Effective planning, implementation, and evaluation of development projects using various approaches and techniques.
- Skills to mobilize and manage internal and external resources to support organizational objectives.

Unit-I
Introduction to Development Organizations

- Conceptual Understanding: Definition, functions and Forms of Not for Profit Sector
- Growing Roles, Importance, and the need of NGO Sector
- Globalization and NGO

Unit-II
Legal Consideration

- Legal Frameworks: Registration Acts - Society's Registration Act and Indian Trust Act, Memorandum of Association and Bye Laws
- Charitable Endowment Act and FCRA
- Tax Relief Under Various Acts

Unit-III
Approaches to Project Planning

- Programme Planning
- Monitoring and Evaluation
- Project Management

Unit-IV
Resource Mobilization and Communication

- Human Resource Management
- Financial Management and Public Relations
- Networking and Collaboration

Suggested Readings:

Chakravarty, S. (Ed.). (2019). Understanding civil society: Perspectives from South A**sia**. Routledge.
Chandra, S., & Trollope, A. K. (2015). Non-governmental organizations: Origin and development. Routledge.
Desai, P. (2022). Transforming communities: The role of NGOs in rural India**.** Oxford University Press.
Desai, R. (2016). Non-governmental organizations in India: Challenges and opportunitie**s**. Routledge.
Desai, V., & Kulkarni, V. (Eds.). (2018). NGOs in India: The challenges of women's empowerment and accountability**.** Springer.
Lumde, N. (2024). SG and CSR: Strategies for career success and corporate responsibility (Kindle Edition).
Sarangi, N., & Srivastava, R. (Eds.). (2017). Handbook of NGOs in India: Development, issues and perspectives**.** Springer.

Master of Social Work
Semester - IV
Corporate Social Responsibility and Social Entrepreneurship

MDC-4
Credits: 3 (Hrs./Week: 3)

Maximum Marks: 75
Theory Examination: 35
Internal Assessment: 15
Practical External: 20
Practical Internal: 5

Note: The students will be required to attempt four questions in all. Question No. I will be compulsory comprising of 4 short answer type questions of 2 marks each and will cover the entire syllabus 4X 2 = 8 marks. In addition to it, Question Nos. II to VII will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 14 marks each i.e. 3 X 14 = 42 marks thus making it the total weight age to 50 marks .Three questions to be attempted. One from each unit.

Course Outcomes:

- Develop a nuanced understanding of CSR and Social Entrepreneurship
- Articulate the significance of stakeholder engagement in the formulation and execution of CSR strategies.
- Evaluate the legal frameworks and regulatory guidelines governing CSR implementation

Unit-I
Corporate Social Responsibility

- Definition, Key Theories and Frameworks, Importance of CSR in modern business
- CSR Models
- Social, Economic and Environmental Responsibilities
- Global Perspective on CSR and Social Entrepreneurship

Unit-II
Social Entrepreneurship

- Definition and Characteristics
- Social Entrepreneurship Models
- Theories of Social Innovation and Impact

Unit-III
CSR and Social Entrepreneurship in Practice

- CSR legislations

- CSR Reporting and Communication
- Social Enterprise Marketing and Outreach

Unit-IV
Emerging Areas

- Challenges in CSR implementation
- Technology adoption in CSR
- Social Entrepreneurship and Successful CSR Case Studies

Suggested Readings:

Blowfield, M., & Murray, A. (2014). *Corporate responsibility* (3rd ed.). Oxford University Press.
Bornstein, D. (2007). *How to change the world: Social entrepreneurs and the power of new ideas* (Updated ed.). Oxford University Press.
Borzaga, C., & Defourny, J. (2001**).** *The emergence of social enterprise*. Routledge.
Brooks, A. (2009). *Social entrepreneurship: A modern approach to social value creation*. Prentice Hall.
Carroll, A. B. (1977**).** *Managing corporate social responsibility*. Little, Brown and Company.
Crane, A., Matten, D., & Spence, L. J. (Eds.). (2014**).** *Corporate social responsibility: Readings and cases in a global context* (2nd ed.). Routledge.
Dees, J. G. (2001). *The meaning of social entrepreneurship*. Centre for the Advancement of Social Entrepreneurship, Duke University, Fuqua School of Business.
Leadbeater, C. (1997). *The rise of the social entrepreneur*. Demos.
Mallin, C. A. (2016). *Corporate governance*. Oxford University Press.
Mitra, N., & Schmidpeter, R. (Eds.). (2016). *Corporate social responsibility in India: Cases and developments after the legal mandate*. Springer.
Utting, P., & Marques, J. C. (2010**).** *Corporate social responsibility and regulatory governance: Towards inclusive development?* Palgrave Macmillan.
Welford, R. (2013). *Hijacking environmentalism: Corporate responses to sustainable development*. Routledge.

Lumde, N. (2024). *Corporate social responsibility in India: A practitioner's perspective* (Kindle ed.).

Literature and Cinema
Course code: MDC-1

Max Marks: 75

Theory: 50

Internal Assessment: 25

Course Objectives

CO	Description
CO-1	Understand how literature has been adapted into cinema, analyzing the similarities and differences between the two mediums
CO-2	Encourage students to critique the effectiveness of film adaptations in conveying the themes, characters, and narratives of the original literary works.
CO-3	Examine how these cinematic techniques contribute to the storytelling process and the overall impact of a film.

Course Outcomes

On completing the paper **Literature and Cinema** the students shall be able to realize following program outcomes:

CO	Description
CO-1	Articulate the processes and challenges involved in adapting literary works into films.
CO-2	Develop the ability to critically analyze both literary texts and their cinematic adaptations, identifying key themes, motifs, and narrative strategies.
CO-3	Gain a deeper appreciation for the technical and artistic aspects of filmmaking.

Unit 1: Introduction to basic terms

Language of Cinema, Elements of Theatre, Greek Theatre, Indian Classical Theatre with reference to Natyashastra, Folk element and Indian Theatre, Black theatre, Realistic theatre, Angry Young Man, Street play, Third theatre.

Mise en scene, cinematography, editing, sound

Unit 2: Popular Theatrical Forms and Practices

• Nautanki, Jatra, Tamasha, Bhramyamaan Theatre, Street Theatre, Campus Theatre Topics for Student Presentations:

a) On the different types of performative space in practice

b) Poetry reading elocution expressive gestures and choreographed movement

Unit 3: Cinematic Adaptation of popular texts

Othello (movie, dir. Oliver Parker, 1995)

Omkara (movie, dir. Vishal Bhardwaj, 2006)

Instructions to the Paper-Setter and the students:

All questions are compulsory and carry equal marks.

Question 1 will comprise four short-answer type questions. There will be at least one question from each Units. Students will be required to attempt any 4 selecting at least one from each Unit. 5X4 (20marks)

Questions 2, 3 and 4 (with internal choice) will be long answer-type questions based on Units I, II, III respectively. 3X10 (30 marks)

Introduction to Phonetics

Course code: MDC-2

Max Marks: 75

Theory: 50

Internal Assessment: 25

Course Outcomes:

CO	**DESCRIPTION**
CO-1	Understand the system of sounds and sound combinations in English.
CO-2	Understand how words are produced, how they are transmitted, and how they are perceived.
CO-3	Differentiate between consonants and vowels.
CO-4	Pronounce English sounds in isolation and in connected speech.

Course objectives:

CO	**DESCRIPTION**
CO-1	Understand systematic , conscious consideration of how speech sounds are made, what they sound like, and how they compare with each other.
CO-2	Know the structure of the English syllable.
CO-3	Know the different types of stress in English.
CO-4	Know the different intonations patterns of English.

Unit 1: Basic of Phonetics

Definition and Division of Phonetics

Consonant and Vowels: Sound with Transcriptions

Syllable: Definition, Types and Rules

Stress and Intonation: Definition and Types

Unit 2 : Reading Patterns in English

Difference between British, American and Indian English.

Characteristics and Problems of Indian English

Essentials of Reading English

Reading Skills: Scanning, Skimming Eyes, Extensive Reading and Intensive Reading

Unit 3: English Language Teaching (ELT)

First Language Acquisition

Second Language Acquisition/Learning

Instructions to the Paper-Setter and students:

All questions are compulsory and carry equal marks.

Question 1 will comprise 6 short-answer type questions. There will be at least one question from each Unit. Students will be required to attempt any 4 selecting at least one from each Unit. 4X5 (20 marks)

Questions 2, 3, and 4 (with internal choice) will be long answer-type questions based on Units I, II, III respectively. 3X10 (30 marks)

Suggested Readings:

A Course in Phonetics by Peter Ladefoged and Keith Johnson

Introducing Phonetics and Phonolgy by Mike Davenport and S.J. Hannahs

Phonetic Data Analysis: An Introduction to Fieldwork and Instrumental Techniques by Peter Ladefoged

The Sounds of Language: An Introduction to Phonetics and Phonology by Elizabeth Zsiga

Phonetics: A Practical Introduction by Ratree Wayland

Nomenclature of the Course: Modern Indian Novel in English

Core Course- MDC- 3

Max Marks: 75

Theory: 50

Internal Assessment: 25

Course Objectives

CO	Description
CO-1	Understand the historical and socio-political context of the emergence and development of the modern Indian novel in English.
CO-2	Develop critical and analytical skills to interpret and evaluate major works of modern Indian fiction.
CO-3	Encourage interdisciplinary approaches by connecting literature with history, politics, sociology, and cultural studies.

Course Outcomes

On completing the paper **Modern Indian Novel in English** the students shall be able to realize following program outcomes:

CO	Description
CO-1	Examine the narrative techniques, thematic concerns, and stylistic features of modern Indian novels.
CO-2	Reflect on the ethical implications of literary representations and the responsibility of writers and readers in addressing social injustices.

CO-3	Appreciate the diversity and richness of modern Indian novels, recognizing the variety of voices and perspectives that contribute to this body of literature.

Nomenclature of the Course: Modern Indian Novel in English

Core Course- MDC- 3

Unit 1

Meenakshi Mukherjee	"The Anxiety of Indianness" from *The Perishable Empire: Essays on Indian Writing in English*

Unit 2

Amitav Ghosh	The Shadow Lines (1988)

Unit 3

Chitra Banerjee Divakurani	The Palace of Illusions (2008)

Instructions to the Paper-Setter and students:

All questions are compulsory and carry equal marks.

Question 1 will comprise 6 short-answer type questions. There will be at least one question from each Unit. Students will be required to attempt any 4 selecting at least one from each Unit. 4X5 (20 marks)

Questions 2, 3, and 4(with internal choice) will be long answer-type questions based on Units I, II, III respectively. 3X10 (30 marks)

Suggested Readings:

Naik, M. K. A History of Indian English Literature. Delhi: Sahitya Akademi, 1992.

Mukherji, Minakshi . The Twice Born Fiction. New Delhi: Heinemann, 1971.

Ansani, Shyam M. New Dimensions of Indian English Novels, Delhi: Doaba House, 1987. Devy, G.N. An Another Tongue: Essays on Indian English Literature, Madras: Macmillan India Ltd. 1995. Gandhi, Leela. Post-Colonialism, New : Oxford University Press, 2002. Gokak, V K Indian and World Culture, Delhi: Sahitya Akademi, 1989.

Bhongle, Rangrao (ed.). 2003. The Inside View: Native Responses to Contemporary Indian English Novel. Delhi: Atlantic Publishers

MDC 4
Women's Writing

Max Marks: 75
Theory: 50
Internal Assessment: 25

Course Objectives

CO	Description
CO-1	Trace the historical development of women's writing from various literary periods and genres.
CO-2	Identify and analyze recurring themes such as gender, identity, sexuality, and power in women's literature.
CO-3	Foster critical thinking by comparing and contrasting women's writing across different cultures and time periods.

Course Outcomes

On completing the paper **Women's Writing** the students shall be able to realize following program outcomes:

CO	Description
CO-1	Recognize the diverse contributions of women writers to the literary landscape.
CO-2	Apply feminist and gender theories to analyze and critique literary texts.
CO-3	Develop the skills to critically analyze literary texts, identifying key themes, motifs, and narrative strategies.

Couse code: MDC- 4

Nomenclature of the course: Women's Writing

Unit 1: Introduction to basic terms

1. What is Patriarchy?
2. Mary Wollstonecraft/ Reform Bills- Right to Vote for Women
3. Ecriture Feminine
4. Concepts of Gender. Gender Stereotypes. Gender and Culture.
5. Feminism, feminist consciousness and its evolution.
6. Importance of gender sensitization and gender equality

Unit 2: Poetry

Kamala Das - A Hot Noon in Malabar

Sarojini Naidu - The Soul's Prayer

Sylvia Plath - Daddy

Maya Angelou - Still I Rise

Unit 3: Novels

Shashi Deshpande: That Long Silence

Alice Walker: The Color Purple

Instructions to the Paper-Setter and the students:

All questions are compulsory and carry equal marks.

Question 1 will comprise four short-answer type questions. There will be at least one question from each Units. Students will be required to attempt any 4 selecting at least one from each Unit. 5X4 (20marks)

Questions 2, 3 and 4 (with internal choice) will be long answer-type questions based on Units I, I I, III respectively. 3X10 (30 marks)

MDC
Semester I
MDC-1: Public Policy of India

241/PPAG/MD101	Public Policy in India
Semester I	Maximum Marks: 75
Credits: 3 (Hrs./week:3)	Theory Examination: 50
Time: 3 hours	Internal Assessment: 25

Course Outcome:

Remembering: Recall definitions and concepts related to public policy and the policy process.

Understanding: Explain the nature and scope of policy science and the significance of various policy process stages.

Analyzing: Analyze the evolution of development models and the roles of institutions in Indian public policy making.

Evaluating: Evaluate the effects of globalization on Indian public policy and assess its impact on key sectors.

Note for External Examiner:

1. **Seven Questions will be set in all and students will be required to attempt 4 questions.**
2. **Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).**
3. **For the remaining six questions, students will attempt 1 out of 2 questions from each of the three units (12 marks each).**

Unit I: Introduction to Public Policy

1. Public Policy: meaning, scope and types
2. Policy Science: nature, scope and evaluation
3. Policy Process: policy formulation, policy implementation, policy monitoring and policy evaluation

Unit II: Public policy making in India

1. Models of development in India from independence till date
2. Governmental and non-governmental institutions involved in public policy making in India
3. Impact of globalization on public policy making in India

Unit III: Selected Public Policies in India

National policies made from independence to date in the following sectors-

1. Health
2. Education
3. Agriculture

Suggested Readings:

1. Anderson, J. E. (2003). *Public policymaking: An introduction* (6th ed.). Boston: Houghton Mifflin.

2. Banerji, D. (1982). *Poverty, class and health culture in India*. Prachi Prakashan.

3. Birkland, T. A. (2010). *An introduction to the policy process: Theories, concepts, and models of public policy making* (3rd ed.). M.E. Sharpe.

4. Chakravarty, S. (1987). *Development planning: The Indian experience*. Oxford University Press.

5. Drèze, J., & Sen, A. (1995). *India: Economic development and social opportunity*. Oxford University Press.

6. Dunn, W. N. (2004). *Public policy analysis: An introduction* (3rd ed.). Pearson Prentice Hall.

7. Dye, T. R. (2013). *Understanding public policy* (14th ed.). Boston: Pearson.

8. Gangolli, L. V., Duggal, R., & Shukla, A. (Eds.). (2005). *Review of healthcare in India*. Centre for Enquiry into Health and Allied Themes (CEHAT).

9. Ghosh, J. (2004). *Globalization and the Indian economy: Roadmap to a convertible rupee*. Routledge.

10. Gulati, A., & Fan, S. (2008). *The dragon and the elephant: Agricultural and rural reforms in China and India*. Oxford University Press.

11. Gupta, D., & Singh, A. (2002). *Higher education in India: Issues in access, equity, and quality*. SAGE Publications.

12. Hill, M., & Hupe, P. (2009). *Implementing public policy: An introduction to the study of operational governance* (2nd ed.). SAGE Publications.

13. Howlett, M., & Ramesh, M. (2003). *Studying public policy: Policy cycles and policy subsystems* (2nd ed.). Oxford University Press.

14. Jenkins, R. (2004). *Regional reflections: Comparing politics across India's states*. Oxford University Press.

15. Kapur, D., & Mehta, P. B. (2007). *Public institutions in India: Performance and design*. Oxford University Press.

16. Kumar, K. (2005). *Political agenda of education: A study of colonialist and nationalist ideas*. SAGE Publications.

17. Lasswell, H. D. (1951). *The policy orientation*. Stanford University Press.

18. Mahajan, G. (1998). *Democracy, difference and social justice*. Oxford University Press.

19. Nayyar, D. (2006). *Globalization, history and development: A tale of two centuries*. Cambridge University Press.

20. Panagariya, A. (2008). *India: The emerging giant*. Oxford University Press.

21. Reddy, V. R., & Mishra, S. (2009). *Agrarian crisis in India*. Oxford University Press.

22. Sabatier, P. A. (Ed.). (2007). *Theories of the policy process* (2nd ed.). Westview Press.

23. Singh, M. P., & Saxena, R. (2012). *Indian politics: Contemporary issues and concerns*. PHI Learning.

24. Singh, V. (1976). *Land reform in India: Trends and perspectives*. People's Publishing House.

25. Tilak, J. B. G. (1990). *Education for development in Asia*. SAGE Publications.

Semester II

MDC- 2 : Citizenship in Global Perspective

241/PPAG/MD201	Citizenship in Global Perspective
Semester II	Maximum Marks: 75
Credits: 3 (Hrs./week:3)	Theory Examination: 50
Time: 3 hours	Internal Assessment: 25

Course Outcome:

Understand: Students will define disaster governance, including its features and significance.

Analyze: Students will analyze the roles and responsibilities of governmental bodies, the market, and civil society in disaster governance in India.

Evaluate: Students will evaluate the challenges faced by international organizations in global disaster governance.

Creative: Students will critique and propose improvements to existing disaster governance frameworks based on global perspectives.

Note for External Examiner:

1. **Seven Questions will be set in all and students will be required to attempt 4 questions.**
2. **Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).**
3. **For the remaining six questions, students will attempt 1 out of 2 questions from each of the three units (12 marks each).**

Unit 1: Conceptual framework

a) Citizenship and social class
b) Group differentiated citizenship
c) Multicultural citizenship

Unit 2: Citizenship beyond Nation-State

a) Flexible citizenship
b) Dual citizenship
c) Idea of cosmopolitan citizenship

Unit 3- India and Citizenship

a) Theory and practice
b) Indian Constitution and Citizenship laws

Suggested Readings:

1. Benhabib, S. (2004). *The Rights of Others: Aliens, Residents, and Citizens*. Cambridge University Press.
2. Hammar, T. (1990). *Democracy and the Nation-State: A Comparative Perspective*. Sage Publications.

3. Hollifield, J. F. (2004). *The Politics of Migration and Immigration in Europe*. Blackwell Publishing.
4. Jha, S. (2016). *Citizenship in India: Theory and Practice*. *Indian Journal of Political Science, 77*(2), 201-214.
5. Kumar, R. (2014). *The Indian Constitution and Citizenship Laws*. *Journal of Indian Law and Society*, *5*(1), 25-41.
6. Kymlicka, W. (1995). *Multicultural Citizenship: A Liberal Theory of Minority Rights*. Oxford University Press.
7. Marshall, T. H. (1964). *Citizenship and Social Class*. Pluto Press.
8. Mishra, K. C. (2008). *Citizenship in India: Historical and Contemporary Perspectives*. *Indian Review of Books*, *9*(3), 45-60.
9. Shapiro, I., & Hacker-Cordon, C. (1999). *Democracy's Edges*. Cambridge University Press.

Semester III

MDC- 3: An Introduction of Indian Constitution

241/PPAG/MD301	**An Introduction of Indian Constitution**
Semester III	**Maximum Marks: 75**
Credits: 3 (Hrs./week:3)	**Theory Examination: 50**
Time: 3 hours	**Internal Assessment: 25**

Course Outcome:

Understand: Students will explain the philosophy of the Preamble and the Basic Structure Theory of the Indian Constitution.

Analyze: Students will analyze the powers and functions of the Parliament, President, Prime Minister, and the judiciary.

Evaluate: Students will evaluate Centre-State relations and the roles of Panchayats and Municipalities in federalism.

Assess: Students will assess and propose improvements to federal and decentralization mechanisms in India.

Note for External Examiner:

1. **Seven Questions will be set in all and students will be required to attempt 4 questions.**
2. **Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).**
3. **For the remaining six questions, students will attempt 1 out of 2 questions from each of the three units (12 marks each).**

Unit 1: Philosophy of Indian Constitution

a) Preamble of the Constitution
b) Basic structure theory

Unit 2: Organs of the Government

a) The Legislature: Power and functions of Parliament, Debates on representation in Parliament
b) The Executive: Power and functions of President and Prime Minister
c) The Judiciary: Appointment of judges in High Courts and the Supreme Court of India, Powers and functions of the Supreme Court

Unit 3: Federalism and Decentralisation

a) Centre-State relations, asymmetrical features of federalism
b) The Panchayats and Municipalities

Suggested Readings:

1. Agarwal, R. K. (2015). *Indian Constitutional Law* (6th ed.). Eastern Book Company.
2. Austin, G. (2017). *The Indian Constitution: Cornerstone of a Nation*. Oxford University Press.

3. Chandhoke, N. (2001). *State and Civil Society: Explorations in Political Theory*. Sage Publications.

4. Dey, S. (2020). *The Indian Parliament: Powers and Functions*. *Journal of Political Science and Public Affairs, 8*(4), 223-234.

5. Jain, M. P. (2017). *Indian Constitutional Law* (7th ed.). LexisNexis.

6. Kumar, R. (2018). *Centre-State Relations in India: An Analysis*. *Indian Journal of Federal Studies, 7*(2), 145-160.

7. Mishra, A. (2015). *Decentralization and Local Governance in India: The Role of Panchayats and Municipalities*. *Local Governance Review, 14*(3), 112-128.

8. Rao, B. S. (2019). *The Judiciary in India: Appointments and Functions*. *Indian Law Review, 11*(1), 67-80.

9. Seervai, H. M. (2014). *Constitutional Law of India* (4th ed.). Tripathi Publications.

Semester IV

MDC- 4: Governance: Emerging Issues and Challenges

241/PPAG/MD401	Governance: Emerging Issues and Challenges
Semester IV	**Maximum Marks: 75**
Credits: 3 (Hrs./week:3)	**Theory Examination: 50**
Time: 3 hours	**Internal Assessment: 25**

Course Outcome:
Remembering: Define governance and recall its historical evolution.
Applying: Apply AI knowledge to assess its impact on key sectors and identify associated challenges.
Analyzing: Analyze AI challenges and evaluate their implications for governance.
Understanding: Explain the concept and historical context of pandemics, focusing on the impacts of COVID-19.

Note for External Examiner:

1. **Seven Questions will be set in all and students will be required to attempt 4 questions.**
2. **Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).**
3. **For the remaining six questions, students will attempt 1 out of 2 questions from each of the three units (12 marks each).**

Unit I: Understanding Governance

i) What is Governance?

ii) Evolution of the concept of Governance

Unit II: AI: Transformative power and governance challenges

i) Introduction to Artificial Intelligence

ii) Impact of Artificial Intelligence on society with a focus on

a) Healthcare

b) Environment

c) Humanitarian Aid

d) Education

e) Agriculture

iii) Challenges:

a) Misinformation and Disinformation

b) Bias and Discrimination

c) Surveillance and invasion of privacy

d) Fraud and violation of human right**s**

Unit III: Pandemic (COVID-19) and crisis of governance

i) What is Pandemic?

ii) History

iii) Impact of the Pandemic (COVID-19) on society with a focus on

a) Education

b) Healthcare

c) Waste management

iv) Challenges

a) Effective and inclusive service delivery

b) Equitable access to health and education

c) Issue of integrity and corruption in public sector procurement process

d) Upholding human rights and The Rule of Law

Suggested Readings:

1. Anderson, C. W., & McNeal, R. S. (2019). *AI, robotics, and the future of jobs and work.* Sage Publications.
2. Bostrom, N. (2014). *Superintelligence: Paths, dangers, strategies.* Oxford University Press.
3. Floridi, L. (2019). *Soft ethics, the governance of the digital, and the general data protection regulation.* Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, 377(2140), 20180081.
4. Kitchin, R. (2017). *Thinking critically about and researching algorithms.* Information, Communication & Society, 20(1), 14-29.
5. Mittelstadt, B. D., Allo, P., Taddeo, M., Wachter, S., & Floridi, L. (2016). *The ethics of algorithms: Mapping the debate.* Big Data & Society, 3(2), 2053951716679679.
6. Moor, J. H. (2006). *The nature, importance, and difficulty of machine ethics.* IEEE Intelligent Systems, 21(4), 18-21.
7. Russell, S. J., & Norvig, P. (2016). *Artificial intelligence: A modern approach.* Malaysia; Pearson Education Limited.
8. Tegmark, M. (2017). *Life 3.0: Being human in the age of artificial intelligence.* Vintage.
9. United Nations Development Programme. (2019). *Artificial Intelligence for Sustainable Development.* Retrieved from https://www.undp.org/content/undp/en/home/librarypage/democratic-governance/the-case-for-ai-in-sustainable-development.html

World Health Organization. (2020). *Artificial intelligence for health.* Retrieved from

Semester -I

MDC-01: Political Sociology

MDC-01	Political Sociology
Semester I	Maximum Marks: 75
Credits: 3 (Hrs./week:3)	Theory Examination: 50
Time: 3 hours	Internal Assessment: 25

Course Objective: This paper aims at highlighting some of the major areas in the domain of political sociology with reference to India. The paper intends to familiarize the students with the social, cultural and economic structures of power in Indian society and their mechanism of functioning in a critical perspective.

• Seven Questions will be set in all and students will be required to attempt 4 questions.

• Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread

over the entire syllabus (2x7=14 marks).

• For the remaining six questions, students will attempt 1 out of 2 questions from each of the three units

(12 marks each).

Unit-I Basic Concepts in Political Sociology

- Interrelationship between Polity and Sociology Political Scoialization, Political Culture, Political Communication.

Unit-II Society and Polity in India

- Constitutional aspects, Institutional Structure, Social basis of Politics in India: Caste, Religion, Gender.
- Criminalization of Politics

Unit-III Contemporary Trends in Political Sociology in India

- Social inequality and Exclusion
- Political participation
- Media and Politics

Suggested Readings:

- Aron, Raymond Main currents in Sociological thoughts I & II Translation by Richer Howeard and Halen Weaners (Harmondsworth Penguin, 1965).
- Beteille, A. Closed and Open Social Stratification in India, Europe Journal of Sociology, June, 1967. Bottmore, T.B. Elites and Society (Harmondsworth Penguin 1971)
- Duverger The Idea of Politics : The Use of poser in Society. Lipset, S.M. Politics and the Social Science. (New Delhi Wiley Eastern, 1973
- Runciman, W.G. Social Science and Political Theory (Cambridge, Cambridge University Press, 1967)
- Rush, Michael and Philip, A. An Introduction to Political Sociology (Nelson Series).
- Gandhi, Madan G. Modern Political Analysis, Oxford & IBH (Delhi, 1982)
- Rathore, L.S. Political Sociology (Meenakshi, Meerut, 1982) Almond and Powell
- Comparative Politics : A Developmental Approach (New Delhi, 1972).
- Bailey, F. Politics and SocialChange (Berkeley University of California Press, 1974).
- Bendix, R. and Lipset, Class, Status and Power: Social S.M.(ed). Stratification in Comparative Perspective, 2nd (London, Routledge and Kegan Paul, 1970)
- Beteille A., Caste Class and Power (Berkeley and Los Angels : University of California, 1968)
- Bottomore, T.B. Classes in Modern Society (London, George, Alien and Unwin,
- Key, V.O. Politics, Parties and Pressure Groups Kothari, R. Politics in India, (New Delhi, 1970).
- Philip, C.H. (ed.) Society and Politics in India (London : London University Press, 1964)

Semester II

MDC-02:Political Economy

MDC- 02	Political Economy
Semester II	Maximum Marks: 75
Credits: 3 (Hrs./week:3)	Theory Examination: 50
Time: 3 hours	Internal Assessment: 25

• Seven Questions will be set in all and students will be required to attempt 4 questions.

• Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread

over the entire syllabus (2x7=14 marks).

• For the remaining six questions, students will attempt 1 out of 2 questions from each of the three units

(12 marks each).

Unit-I

(a) Development of Classical Political Economy and its Contributiors:

- -Adam Smith
- -David Ricards
- -J.S Mill

(b) Marxist and Neo- Marxist Political Economy and its Critique.

Unit-II

(a) State Intervention and Development;

- Keyenns
- Hayek
- Amertya sen

(b) Developmental State; East Asian Model

Unit-III

- Democratic Developmental State; The Indian Model
- Challenges and Critique of The Indian Developmental Model.

Suggested readings:

- Samir Amin Unequal Development : An Esay on the Social Formation of Peripherical Capitalism, Haddocks: Harvester Press, 1976 Accumulators on a World Scale
- John s. Augustine Strategies for Third World Development, New Delhi : SagePublications, 1989.
- Hartmut Elsonhans Development and Underdevelopment : The History, Economics and Politics of North-South Relations, New Delhi : Sage Publications, 1991
- Stoessinger, John G. United Nations and the Super Powers : China USA and USSR Gordenker, Leon UN Secretary General and the Maintenance of Peace
- Pedelford, Norman J and The United Nations in the Balance Goodrich, L.M. (Eds.) Accomplishments and Prospects Institution.
- Samir Amin Unequal Development : An Essay on the Social Formation of Peripherical Capitalism, Haddocks : Harvester Press, 1976. Accumulators on a World Scale.
- John S. Augustine Strategiesforthird World Development, New Delhi : Sage Publications, 1989.
- Hartmut Elsonhans Development and Underdevelopment : The History, Economics and Politics of North-South Relations, New Delhi : Sage Publications, 1991.
- Andre Gunder Frank Capitalism & Underdevelop in Latin Wolterstein America, Penguin, 1971 Globalization of Capital, 1997.
- Andre Gunder Frank Capitalism & Underdevelop in Latin Wolterstein America, Penguin, 1971 Globalization of Capital, 1997.
- Michael Chossodovsky Globalization of poverty, New Delhi : Other Indian Press, 1997

Semester- III

MDC-03: Geo-Politics

MDC-03	Geo-Politics
Semester III	Maximum Marks: 75
Credits: 3 (Hrs./week:3)	Theory Examination: 50
Time: 3 hours	Internal Assessment: 25

Course Objective :The course on Geopolitics has been designed to apprise the student with an understanding of the definition, origins and development of the concept of Geopolitics. The history and changing nature of geopolitical and geostrategic environment would form a greater focus in understanding the whole debate on international relations and foreign policy. An attempt of the course would also be to provide the students with an Indian perspective on the ongoing geopolitical and geostrategic debate. This course has been designed for a fresher, who is keen to learn and understand the complex issuesrelating to the dynamic nature of international and national security environment.

• Seven Questions will be set in all and students will be required to attempt 4 questions.

• Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread

over the entire syllabus (2x7=14 marks).

• For the remaining six questions, students will attempt 1 out of 2 questions from each of the three units

(12 marks each).

Unit-I Understanding Geopolitics

- Definition of Geopolitics
- Concepts in Geopolitics; Territory, Sovereignty, State, Religion.

Unit-II Theory of Geopolitics

- Classical Theories; Heartland Theory, Sea Power, Rimland Theory,
- Critical Geopolitics; Modern geopolitics, Post Modern Geopolitics.

Unit-III Contemporary Issues In Geopolitics

- Global Environmental Issues
- Geopolitics Of Energy
- Globalization & Geopolitics
- Boundary Issues

Suggested Readings :

- Andrew Herod, Gearoid O Tuathail and Susan M. Roberts (eds.), An Unruly World ? Globalisation, Governance and Geography, London and New York : Routledge, 1998
- Ciro, E., Zoppe (ed.), Charles Zorgbibe :On Geopolitics, Classical and Nuclear, Boston, Nijhoff, 1985.
- David, Hoosan (ed.), Geography and National Identity, Oxford, U.K. and Cambridge : USA : Blackwell, 1994.
- Geoffrey, Parker, Geopolitics : Past, Present and Future, London and Washington : Pinter, 1998.
- Gertjan, Dijkink, National Identity and Geopolitical Visions, London, New York : Routledge, 1996.
- Gearoid, O. Tuathail, Critical Geopolitics : The Politics of Writing Global Space, London and New York : Routledge, 1996.
- Gearoid, O. Tuathail, Simon Dalby and Paul Routledge (ed.), The Geopolitics Reader, London and New York, Routledge, 1998.
- Gearoid, O. Tuathail, Simon Dalby (eds.), Rethinking Geopolitics, London and New York : Routledge, 1998.
- Sloan, G.R., Geopolitics in United States Strategic Policy, 1890-1987, Brighton Wheatsheaf Books, 1988.
- Jan Nederveen Pieterse, World Orders in the Making : Humanitarian Intervention and Beyond, Houndmills, Macmillan, 1998.
- Jan Nijman, The Geopolitics of Power and Conflict : Superpowers in the International Systems, London and New York : Belhaven Press, 1993.
- John, Agnew and Stuart Corbridge, Mastering Space, Hegemony, Territory and Political Economy, London, New York : Routledge, 1995.
- John, Agnew, Geopolitics :Re Visioning World Politics, London and New York : Routledge, 1998.
- Klaus, John Dodds, "Geopolitics, Cartography and the State in South America," Political Geography 12 (4), July 1993 : 361-381.
- Kurt Mills, Human Rights in the Emerging Global Order, A New Sovereignty, Houndmills : Macmillan Press Limited, 1998.
- Mathew, B. Fielden, "The Geopolitics of Aid : The Provision and Termination of Aid to Afghan Refugees in North West Frontier Province, Pakistan," Political Geography, 1998,
- Simon, Dalby, Creating the Second Cold War, London : Pinter, 1990.

MA(JMC)

SEMESTER -1

Name of Subject: **Introduction to Communication**		Maximum Theory marks: 75 (25+50)
Subject Code: MDC-01	Course ID: 241/JMC/MD-101	

Instructions for paper setter: Examiner is requested to set one compulsory and eight other questions, two from each unit all questions carry equal marks. The compulsory question should be of 10 marks and should cover entire syllabus. Student should attempt four other questions i.e. one from each unit.

Objective: with this course students would gain knowledge about basic aspects of Communication. Students would learn about the process and functions of communication and its role in developing self that play crucial role in the process of socialization.

Course Outcomes:

1.Students will be able to speak confidently in interpersonal and group communication.
2.They will be able to apply ethics of communication in psychological as well as social contexts.
3.They will be able to differentiate and utilize various forms and types of communication, including verbal, non-verbal, and media-specific channels.

COURSE CONTENTS:

Unit 1: Introduction
1.1 Human communication and Process of Socialization 1.2 Process and Functions of Communication 1.3 Barriers of Effective Communication 1.4 Communication and Self (Johari window)
Unit 2: Types of Communication
2.1 Language: Verbal (oral and written) and Nonverbal 2.2 Structure: Formal and Informal 2.3 Flow: Horizontal and Vertical (Upward and Downward) 2.4 Medium: Audio, Visual and Audio-visual
Unit 3: Forms of Communication
3.1 Intra-personal Communication 3.2 Interpersonal Communication 3.3 Group Communication: Small Group and Large Group 3.4 Dyad and Triad

Suggested Readings:

1. The Process of Communication D.K. Berlo, New York: Halt Renehart and Winston.
2. Introduction to Communication Studies by John Fiske, Routledge
3. Mass Communication in India by Keval J. Kumar, Jaico Publishing House

MA(JMC)

SEMESTER -2

Name of Subject: **Writing for Media**		Maximum Theory marks: 75 (25+50)
Subject Code: MDC-02	Course ID: 241/JMC/MD-202	

Instructions for External Examiner: This question paper shall be divided in two sections. Examiner is requested to set section A as compulsory question containing 10 marks and from the entire syllabus (can be either objective or subjective). Section B will be in choice from two of the questions from each unit. The students will be required to attempt one question from each unit. All questions from each unit will carry equal marks.

Objective: Developing a comprehensive understanding of various writing formats across print, broadcast, web, film, and documentary mediums. Emphasizing skills in news reporting, feature writing, broadcast scriptwriting, online media writing, and film/documentary scripting to prepare students for diverse roles in the field of media communication.

Course Outcomes:

Students will be able to:

1. Develop skills in writing news, features, and opinion pieces for print media.
2. Learn techniques for writing scripts for radio and television.
3. Gain proficiency in creating content for digital and social media.

COURSE CONTENTS:

Unit 1: Writing for Print Media
1.1 News, News Values and News Stories 1.2 Structure and Principal of News 1.3 Writing Formats: Article, Editorial, Column, Op-ed, Review, Interview and Caption Writing 1.4 Various Types of Features: Travelogue and Memoir
Unit 2: Writing for Broadcast
2.1 Writing for the Ear and Radio News 2.2 Copy Writing for Radio Advertisement (Jingle and Slogans) 2.3 Television Language and Technique of News Writing 2.4 Television Script Format and Packaging: (PTC, V.O. Anchor links, STD shots, STD graphics, Head link)
Unit 3: Writing for Web
3.1 Types of Online Media Writing (Breaking News, Developing News Stories, Multimedia: Visual Story Telling) 3.2 Platforms Based Online Media Writing (News Websites and Blogs, Social Networking sites, Interactive Writing) 3.3 Search Engine and Optimization (SEO) Based Online Writing 3.4 Fact Checking While Writing (Visuals Fact Check and Fake News Fact Check)

Suggested Readings:

1. "News Writing" by George A. Hough

2. "Creative Writing: A Beginner‟s Manual" by Neira Anjana Dev, Anuradha Marwah, and Swati Pal

3. "News Reporting and Editing" by Jan R. Hakemulder, Ray Ac De

4. "The News Writers‟ Handbook" by M. L. Stein and Susan F. Peterno

5. "Basic Source Material for News Writing" by M. K. Joseph

6. "Practical Photography" by O. P. Sharma

7. "Basic Photography" by Michael Langford

8. "Handbook of Photography" by James A. Folts, Ronald P. Lovell

9. "Photography" by Lee Frost

MA(JMC)

SEMESTER -3

Name of Subject: **Media and Society**		Maximum Theory marks: 75 (25+50)
Subject Code: MDC-03	Course ID: 241/JMC/MD-303	

Instructions for paper setter: Examiner is requested to set one compulsory and eight other questions, two from each unit all questions carry equal marks. The compulsory question should be of 10 marks and should cover entire syllabus. Student should attempt four other questions i.e. one from each unit.

Objective: To provide an understanding of the intricate relationship between media and society, focusing on the socio-cultural, economic, and political contexts.

Course Outcomes:

Students will be able to:

1.Understand the basic concepts of media and society.
2.Analyze the relationship between media and socio-political power.
3.Evaluate media content and its representation in society.
4.Explore the dynamics between media and audiences.

COURSE CONTENTS:

Unit 1: Introduction to Society and Media
1.1 Basic Concepts 1.2 Relationship Between Media and Society 1.3 Media in Socio-Cultural Context 1.4 Cultural Imperialism
Unit 2: Media and Power
2.1 Communication and Social Order 2.2 Socio-Political Power 2.3 Democracy and the Internet 2.4 Media Ownership and Control
Unit 3: Media Content and Representation
3.1 Concept of Representation 3.2 Construction of Media Content 3.3 Stereotypes in Media 3.4 Impact of Globalization on Local Media

Suggested Reading:

1. Media/Society: Industries, Images, and Audiences" by David Croteau
2. Media Convergence: Networked Digital Media in Everyday Life" by Tim Dwyer
3. Western Media Narratives on India: From Gandhi To Modi by Umesh Upadhyay
4. The Media and Modernity: A Social Theory of the Media" by John B. Thompson

M.Sc. ENVIRONMENTAL SCIENCE – SEMESTER- I
SUBJECT NAME: POLLUTION AND CLIMATE CHANGE
Course code: MDC-01
Course ID: 241/EVS/MD101
NO. OF CREDITS: 3

L	T	P
3	0	0

TI	:	25
TE	:	50
Total	:	75

Note: 1. Nine questions will be set in all. All questions will carry equal marks.
2. Question no. 1 which will be short answer type, covering the entire syllabus will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each unit I to IV.
The candidates will be required to attempt question no.1and four more questions.

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

CO1. Understand the complex environmental issues, sources and fate of different environmental pollutants along with their effects on environment.
CO2. Learn the standard methods of sampling, analysis and standards set up for different environmental pollutants
CO3. Understand the concept of global climate change, its causes, impacts, adaptation and mitigation strategies
CO4. Learn the role of international and national organizations in mitigating climate change
CO5. Predict the environmental changes and provide simple, technological and socially acceptable solutions
CO6. Understand the tools to study climate change and importance of carbon trading

UNIT-I: Air and noise Pollution

Sources, classification and properties of air pollutants, behaviour and fate of air pollutants, effects of air pollution on human health & materials, sampling and analysis of air pollutants, SOx, NOx, CO, Ozone, hydrocarbons and particulate matter, Air quality standards.

Noise pollution: Definition, sources and effects; noise-monitoring-sound level meter.

UNIT-II: Water and Soil Pollution:

Sources, consequences, characteristics of domestic, industrial and agricultural wastes, their effects on water bodies; thermal pollution. Marine pollution-a general account; water quality standards. Soil pollution from use of fertilizers, pesticides, heavy metals, waste disposal, industrial effluents and surfactants. Detrimental effects of soil pollutants, Remedial measures for soil pollution.

UNIT-III: Global climate change:

Greenhouse effect, trends, radiative forcing, warming potential of gases. CO_2 fertilization effect on

plants; potential impacts of global warming – polar ice caps and melting of glaciers, sea level increase, weather extreme, ecosystems, human health, coral leaf bleaching.

UNIT IV: Mitigation strategies for global warming;

Biological carbon sequestration, carbon sequestration in geological formations; role of forests in soil carbon storage. Kyoto protocol; carbon trading. Global environmental change programmes, IPCC; Indian initiative for mitigating global climate change.

Reference Books:

1. Botkin, D.B. and E.A. Keller (2004). *Environment Science: Earth as a Living Planet*, John Wiley & Sons Inc., New York.
2. Miller Jr., G.T. (1997). *Environmental Science: Working With the Earth*. Wadsworth Publishing Company, Belmont, California
3. Philander, S.G. (ed.) (2008). Encyclopedia of global warming and climate change. 2nd edition, SAGE Publications, Inc., California.
4. Singh, J.S., Singh, S.P. and Gupta, S.R. (2015). *Ecology, Environment and Resource Conservation,* S. Chand Publishing, New Delhi.
5. Steffen, W., A. Sanderson, P. D. Tyson, J. Jager, P. M. Matson, B. Moore, III, F. Oldfield, K. Richardson, H. J. Schnellnhuber, B. L. Turner, II, and R. J. Wasson. (2004). *Global change and the Earth system: a Planet under Pressure*. Springer-Verlag, New York, New York, USA.

Teaching-Learning Process

- **Lectures:** Supported by black board teaching, power point presentations, related videos and demonstrations
- **Assignments and exercises**
- **Test:** Knowledge of the students is tested through surprise tests, quiz, sessional tests and seminars.

M.Sc. ENVIRONMENTAL SCIENCE – SEMESTER- II
SUBJECT NAME: NATURAL RESOURCES MANAGEMENT
Course code: MDC-02
Course ID: 241/EVS/MD202

NO. OF CREDITS: 3

L	T	P			
3	0	0	**TI**	:	25
			TE	:	50
			Total	:	75

Note: 1. Nine questions will be set in all. All questions will carry equal marks.
2. Question no. 1 which will be short answer type, covering the entire syllabus will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each unit I to IV. The candidates will be required to attempt question no.1and four more questions.

COURSE OUTCOMES:
At the completion of this course, the learner will be able to:
CO1: Understand the fundamental principles of various natural resources
CO2: Illustrate the factors affecting and consequence of resource degradation.
CO3: Appraise the integrative approach to suggest sustainable solutions to the resource degradation.
CO4: Able to effectively apply various steps for conservation and management of natural resources.

UNIT-I: FOREST RESOURCES
Natural Resources: Concept and classification of natural resources; Natural resource degradation and conservation; Impacts of resource depletion on environment.
Forest Resources: Forest cover, classification and types of forest in India; Importance and values of forest resources; Use and over-exploitation, Deforestation: cause and effects; Forestry programme: Social Forestry, Urban Forestry

UNIT-II: WATER AND MARINE RESOURCES
Water Resources: Surface and Groundwater problems; Water logging and salinity; Water conservation and management techniques: Rain water harvesting, Watershed management, River action plans
Marine Resources: Introduction to Marine resources; Deep sea mineral resources: Exploration prospective, challenges and environmental impacts; Sustainable deep sea mining

UNIT-III: LAND AND MINERAL RESOURCES
Land resources: Land degradation; Loss of soil fertility, Salinization and waterlogging; Soil Conservation Methods: Wasteland reclamation, Organic farming, Green manuring; Wetland: Definition, classification, functions, ecological importance and conservation.
Mineral resources: Mineral resources of India: Use and exploitation; Mineral exploration and extraction; Environmental impacts of extraction

UNIT-IV: BIORESOURCES

Definition, types and significance of biodiversity; Values and threats; Biodiversity conservation strategies; Bioprospecting and biopiracy; REDD+; Conventions and protocols; Wildlife resources and their conservation measures

REFERENCE BOOKS:

1. Anderson, D. A. (2013). *Environmental economics and natural resource management*. Routledge.
2. Beckman, D. (2012). *Marine environmental biology and conservation*. Jones & Bartlett Publishers.
3. Grigg, N. S. (2009). *Water resources management: principles, regulations, and cases* (No. 631.7 G72). New York: McGraw-Hill.
4. Kudrow, N. J. (2009). *Conservation of Natural Resources*. Nova Science Publishers, Incorporated.
5. Kumar, H. D. (2001). *Forest Resources: Conservation and Management*. Affiliated East-West Press.
6. Lynch, D. R. (2009). *Sustainable natural resource management: For scientists and engineers*. Cambridge University Press.
7. Peacock, K. W. (2008). *Natural resources and sustainable development*. Infobase Publishing.
8. Primack, R. B. (2002). *Essentials of conservation biology*. 5th ed. Sunderland: Sinauer Associates
9. Sampson, R. N. (2010). *Natural resources for the 21st century*. Island Press.
10. Singh, G., & Ahuja, V. (1992). *Land resource management: a case study of Goa.* Land resource management: a case study of Goa.

SUGGESTED WEB SOURCES:

1. http://envis.nic.in/ENVIS_html/ENVISSubject/subject.html
2. https://www.iucn.org/
3. https://www.cbd.int/
4. https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=14
5. http://moef.gov.in/en/#

MODE OF TRANSACTION:

Lecture, Demonstration, PowerPoint presentation, E-tutoring, Discussion, Assignments, Case study;

LMS/ICT TOOLS: Digital Classrooms, DLMS, ZOOM, G-Suite, MS Power-Point, Online Resources

M.Sc. ENVIRONMENTAL SCIENCE – SEMESTER- III
SUBJECT NAME: NATURAL HAZARDS AND DISASTER MANAGEMENT
Course code: MDC-3
Course ID: 241/EVS/MD303
NO. OF CREDITS: 3

L	T	P			
3	0	0	**TI**	:	25
			TE	:	50
			Total	:	75

Note: 1. Nine questions will be set in all. All questions will carry equal marks.
2. Question no. 1 which will be short answer type, covering the entire syllabus will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each unit I to IV. The candidates will be required to attempt question no.1and four more questions.

COURSE OUTCOMES:
On completion of the course, the students will be able to:
CO1: Describe hazard, emergency, disaster, vulnerability, disaster management and risk,
CO2: Gain insight into different types of disasters/hazards, their implication on environment and to identify the main hazards to which our region is, or may be, vulnerable.
CO3: Differentiate, assess and apply the theoretical knowledge of disaster and emergency management activities and risk assessment to reduce the effects of disasters on vulnerable groups.
CO4: Critically analyze the influence of new emergent technologies on the disaster management.

UNIT-I: INTRODUCTION TO DISASTERS
Introduction to Natural and Manmade Disasters; Floods, flood hazards, urbanization and flooding, flood hydrographs, Drought, Landslides; Coastal hazards – tropical cyclone, coastal erosion, sea level changes, coastal zone management; Earthquakes - Seismic waves, quake resistant buildings; Tsunamis; Volcanoes; Wild fires; Oil spills; Urban hazards and disasters.

UNIT-II: RISK ASSESSMENT
Pre-Disaster Management activities; Hazard and vulnerability analysis; capability assessment; emergency/contingency planning and post-disaster management activities; Development planning, types of plans, MBO, SWOT analysis.

UNIT-III: GEOINFORMATICS IN DISASTER MANAGEMENT
Role of GPS, GIS and Remote Sensing in disaster management - Landslides, Volcanoes, Tsunami, Cyclones, Urban and Forest fires, Landslides; Decision-making models and processes; Hazard monitoring, tracking and modelling; Early warning systems; Indian space programme, future satellites for disaster management; Case studies.

UNIT-IV: LEGISLATIONS AND POLICIES FOR DISASTER MANAGEMENT
India Disaster Resource Network; Organization and structure for Emergency

Management; Principles and Practice of Disaster Relief and Recovery; Disaster management policy; Role of legislations in Disaster Management, Disaster Management Act 2005 and amendments, National Green Tribunal, Environment Protection Act, 1986, Explosive Substances Act, 1908, Atomic Energy Act, 1962, Local Administration and disaster risk reduction; Relief and Rehabilitation.

REFERENCE BOOKS:

1. William H. D and Bruce R. M., *Geology and Engineering*, WCB Publishers, Iowa, 1986.
2. Sushmitha Bhaskar and R. Bhaskar, *Natural Disasters*, Unicorn Books, 2011.
3. Bell, F.G.2003, *Geological Hazards, Their Assessment Avoidance and Mitigation*, CRC Press
4. Smith, K. 2003, *Environmental Hazards: Assessing Risk and Reducing Disasters*. Routledge.
5. John M. Wallace and Peter V. Hobbs, *Atmospheric Science: An Introductory Survey*, Academic Press, New York, 1977.
6. Barbar W. Murk et. al., *Environmental Geology*, John Wiley & Sons, New York, 1996.
7. Bohle, H. G., Downing, T. E. and Watts, M. J. *Climate change and Social vulnerability: the sociology and geography of food insecurity*, Global Environmental Change. No.4, pp. 37-48.
8. Collins Larry R. and Schneid Thomas D., *Disaster Management and Preparedness*, Taylor and Francis 2000
9. Goel S.L. and Kumar Ram, *Disaster Management*, Deep and Deep Publications, 2001
10. Kukal, S. S., Kingra, P. K. (2019). *Introduction to Environmental and Disaster Management*, Kalyani Publishers.
11. Parasuraman S., *India Disasters Report: Towards a Policy Initiatives*, Oxford University Press, 2004.

SUGGESTED WEB SOURCE:

1. https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=14
2. https://nptel.ac.in/courses/105/104/105104183/

MODE OF TRANSACTION:

Lecture, demonstration, E-tutoring, discussion, assignments, case study, power point;

Semester 1

MDC-1- Understanding Sociology and Indian Society

Credit-3 **Maximum Marks –75**

241/SOC/MD101 **Theory – 50**

Internal Assessment – 25

Time – 3 hours

The students will be required to attempt four questions in all. Question No. I will be compulsory comprising of 4 short answer type questions of 2 marks each and will cover the entire syllabus 4X 2 = 8 marks. In addition to it, Question Nos. II to VII will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 14 marks each i.e. 3 X 14 = 42 marks thus making it the total weight age to 50 marks .Three questions to be attempted. One from each unit.

Course Outcomes:

- Students will learn about the nature, scope, significance and development of Sociology
- The Students would be familiarized with Indian society, its linkage and continuity with past and present.
- It would enhance knowledge of the students about the Indian social institutions.

UNIT – I

Sociology: Nature, Scope and Significance; Development of Sociology as a discipline in General, and in India; Universalistic Sociology vis-a-vis Indigenization

Unit-II

Evolution of Indian Society: Traditional view of Indian Society; Factors Promoting Unity and Diversity in India; India as Pluralistic Society, Multi-Ethnic; Multi-Religious; Cultural and Lingual

UNIT – III

Indian Social Institutions: Kinship, Family, Marriage; Caste and its Changing Dimensions.

Readings:

Ahuja, Ram (1997): Society in India: Concept, Theories and Recent Trends, Jaipur: Rawat Publication.

Beteille, Andre (1992): Backward Classes in Contemporary India, New Delhi: OUP.

Dube, S.C.(1991): Indian Society, New Delhi : National Book Trust.

Ghurye, G.S. (1968): Social Tension, Bombay: Popular Prakashan.

Karve, Iravati (1961): Hindu Society: An Interpretation, Pune: Daccan College.

Mandelbaum, D.G. (1970): Society in India, Bombay: Popular Prakashan.

Sharma K.L.(ed.) (1994): Caste and Class, Jaipur, Rawat Publication.

Srinivas, M.N.(1980): India's : Social Structure, New Delhi : Hindustan Publication.

Srinivas, M.N.(1985): Social Change in Modern India, New Delhi : Orient Longman.

India: 2010 Govt. of India, New Delhi, Govt. of India publication division.

Semester-2

MDC-2- Rural Society: Structure and Change

Credit-3 **Maximum Marks –75**

241/SOC/MD201 **Theory – 50**

Internal Assessment – 25

Time – 3 hours

The students will be required to attempt four questions in all. Question No. I will be compulsory comprising of 4 short answer type questions of 2 marks each and will cover the entire syllabus 4X 2 = 8 marks. In addition to it, Question Nos. II to VII will consist of long answer (essay type) questions, two Questions from each Unit with internal choice carrying 14 marks each i.e. 3 X 14 = 42 marks thus making it the total weight age to 50 marks .Three questions to be attempted. One from each unit.

Course Outcome:

- Students would be acquainted with rural social structure.
- It will provide an understanding of rural economy and trends of change in rural society.
- Students will understand rural political structure & status of women in rural society.

UNIT – I

Rural Social Structure: Caste and Class in Rural Set Up, Inter Caste Relations and Jajmani System, Rural Family and Changing pattern

UNIT – II

Rural Economy: Land Tenure, Land Reforms, Green Revolution and Its Impact, Bonded and Migrant Labourers, Trends of Change in Rural Society

UNIT – III

Rural Political Structure: Traditional Caste Panchayats, Panchayat before and after 73rd Amendment, New Panchayati Raj and Empowerment of Women

Readings :

Jain , P.C. (2021), Rural Sociology: Indian Context, Jaipur: Rawat Publication

Beteille, A. (1974), Studies in Agrarian Social Structure, Delhi: Oxford University Press.

Desai, A.R. (1969), Rural Sociology in India, Bombay : Popular Prakashan.

Dube, S.C.(1955), Indian Village, London : Routledge and Kegan Paul.

Doshi, S.L. and P.C.Jain (1999), Rural Sociology, Jaipur : Rawat Publication.

Jodhka, S.S. (1995), Debt, Dependence and Agrarian Change, Jaipur : Rawat Publication.

Sharma, K.L. (1997), Rural Society in India, Jaipur : Rawat Publication

Multidisciplinary Course

BOTANY: SEMESTER-I								
CourseType	**Course Code**	**Name of theCourse**	**Credit**	**Contact Hours/Week**	**Internal Assessment marks**	**End Term Marks**	**Max. Marks**	**Exam Duration**
MDC-01 **3 credit**	**241/BOT/MD101**	**Principles of Plant Pathology**	2	2	15	35	**50**	**3 hrs.**
		Practical	1	1	5	20	**25**	

Course Learning Outcomes (CLO)

1. Imparts knowledge regarding the various mechanisms involved during pathogenesis.
2. Students will be able to understand plant disease epidemiology, forecasting and management
3. Students gets familiar with applications of biotechnology in plant pathology
4. Students will form concepts about host-pathogen interactions and mycotoxins

Instructions for Paper-Setter

1. Nine questions will be set in all. All questions will carry equal marks.
2. Question No. 1, which will be short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more questions selecting one question from each unit.

UNIT	TOPICS	CONTACT HOURS
I	How pathogens attack plants : chemical weapons of pathogens (enzymes and toxins) How plants defend themselves against pathogens: structural defense and biochemical defense.	12
II	Plant disease epidemiology and plant disease forecasting: Importance of disease forecasting services, methods used in plant disease forecasting. Management of plant pathogens: cultural, chemical and biological methods.	11
III	Applications of biotechnology in Plant Pathology: The use of tissue culture techniques (callus culture, apical meristem culture and protoplast fusion), Recombinant DNA technology, use of monoclonal antibodies in plant pathology. Effect of environmental factors on disease development.	11
IV	. Mycotoxin producing fungi during storage and major mycotoxins produced by them. Host-pathogen interaction of population level: transmission and spread of plant pathogens.	11

Learning Resources

Agrios, G.N. (2005): Plant Pathology, Acad. Press, Inc. California.
Alexopoulos, C.J. Mins, C.W. & Blackwell, M. (1995): Introductory Mycology, John Willy and Sons. Inc.
Biswas, S.P. & Biswas, A. (1984): An Introduction to Viruses, Vani Education Books, New Delhi.
Clifton, A. (1958): Introduction to the Bacteria. McGraw Hill Books Co. New York.
Mehrotra, R.S. & Aneja, K.R. (1990): An introduction of Mycology, New Age International Press, New Delhi.
Mehrotra, R.S. and Ashok Aggarwal (2003): Plant Pathology, Tata Mc Graw Hill Publ. Ltd., New Delhi.
Michael J. Pelezar, E.C.S. Shan & N.R. Krieg (1993): Microbiology. Tata Mc Graw Hill Publ. New Delhi.
Ronald M. Atlas (1995): Principles of Microbiology. Mosby-Year Book, Inc. St. Louis, Missouri, USA.
Singh, R.S. (1990): Plant Disease, 6th Edition, Oxford, IBH Publ., New Delhi.
Sumbali, G. (2005): The Fungi, Narosa Publ. House, New Delhi.
Webster, J. (1985): Introduction of Fungi. Cambridge University, Press.

BOTANY: SEMESTER-II								
CourseType	**Course Code**	**Name of theCourse**	**Credit**	**Contact Hours/Week**	**Internal Assessment marks**	**End Term Marks**	**Max. Marks**	**Exam Duration**
MDC-02 **3 credit**	**241/BOT/MD202**	**Conservation Biology**	**3**	**3**	**25**	**50**	**75**	**3 hrs.**

Course Learning Outcomes (CLO)

1. Students will become aware and understand the concept and significance of different conventions and Protected Area Networks in relation to conservation of Biodiversity.
2. Students will be able to develop own conservation values and ethics and appreciate the importance of biodiversity services.
3. Student will be able to develop the skills necessary to work efficiently in areas like conservation, EIA, environment management and monitoring.
4. After completion of the course, the student be able to formulate one's own scientific and realistic approach towards Conservation Biology.

Instructions for Paper-Setter

1. Nine questions will be set in all. All questions will carry equal marks.
2. Question No. 1, which will be short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more questions selecting one question from each unit.

UNIT	TOPICS	CONTACT HOURS
I	Principles, characteristics and importance of conservation biology Conservation values and ethics, Role of species in conservation	12
II	Global biodiversity I: Patterns and Processes Global biodiversity II: Losses, Pattern of species vulnerability, Habitat fragmentation and degradation, Synergistic interactions Biodiversity and ecosystem services	11
III	Biodiversity of wetlands, mangroves and coral reefs- A general account Biosphere reserves and RAMSAR sites in India, The Design of Conservation Reserves Major approaches to management, Indian case studies on conservation/management strategy (Project Tiger, Biosphere Reserves)	11
IV	Importance of genetic resources and conservation of crop genetic resources International and National efforts to conserve biodiversity: Convention on biological diversity, CITES, Ramsar convention; National Biodiversity strategy Role of remote sensing and GIS and biodiversity conservation	11

Learning Resources

1. Chape, S., Fish, L., Fox, P. And Spalding, M. 2003. United Nations list of protected areas. IUCN/UNEP/World Conservation Monitoring Centre, Gland, Switzerland/Cambridge
2. Gopal, B. (ed.) 1987. Ecology and Management of Aquatic Vegetation of the Indian Subcontinent. W. Junk bv. The Hague.
3. Heywood, V.(Ed.) (1995). Global Biodiversity Assessment. United Nations Environment Programme, Cambridge University Press, Cambridge, U.K.
4. Hunter (Jr.) M.L. (1996); Fundamentals of Conservation Biology, Blackwell Science. Meffe G.K. and C. Ronals Corroll (1994) Principles of Conservation Biology, Sinaur Associates, Inc., Sunderland. Massachusetts.
5. Huston, M.A. 1994. Biological Diversity: The Coexistence of Species on Changing Landscapes. Cambridge University Press, Cambridge.
6. Peter H. Raven, P.H. and Berg , L. R. Berg. 2005. Environment, 5th Edition. John Wiley & Sons Inc., New York.
7. Singh,J.S., Singh,S.P. and Gupta, S.R. 2006. Ecology, Environment and Resource Conservation, Anamaya Publishers, New Delhi.
8. Soule, M.E. (ed.) (1986) : Conservation Biology. The Science of Scarcity and Diversity. Sinaur Associates, Inc., Sunderland, Massachusetts.
9. Turner, M.G., Gadner,R.H. and O,Neill, R.V. 2001. Landscape Ecology: In theory and Practice, Pattern and Processes. Spinger Verlag, New York.

Multidisciplinary Course

BIOTECHNOLOGY:
SEMESTER-I

Course Type	Course Code	Name of the Course	Credit	Contact Hours/Week	Internal Assessment marks	End Term Marks	Max. Marks	Exam Duration
MDC-01 3 credit	**241/BIOT/MD101**	Introduction to Biotechnology	**2**	**2**	**15**	**35**	**50**	**3 hrs.**
		Practical	**1**	**2**	**5**	**20**	**25**	**4 hrs.**

Course Learning Outcomes (CLO) After completing this course, the students are expected to learn the following:

1. Understand the interdisciplinary scope and applications of biotechnology, including its role in India and the developing world, and public perception of its products.
2. Explain the tools and techniques of genetic engineering, including the history and applications of DNA fingerprinting.
3. Describe the principles and methods of animal tissue culture, including culture media, substrate surfaces, and types of cultures.
4. Outline the history and techniques of plant tissue culture, including culture media, explants, totipotency, and types of cell and tissue cultures.

1.

Instructions for Paper-Setter

1. Nine questions will be set in all. All questions will carry equal marks.
2. Question No. 1, which will be short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more questions selecting one question from each unit.

UNIT	TOPICS	CONTACT HOURS
I	Introduction to Biotechnology – an interdisciplinary pursuit; Main areas of application of biotechnology; Biotechnology research in India, and biotechnology in context of developing world; Public perception of biotechnological products.	8
II	Introduction of genetic engineering (Brief introduction of tools of Genetic engineering), history of genetic manipulations, DNA fingerprinting	8
III	Introduction of animal tissue culture (brief of history, culture media, substrate surfaces, culture procedures, primary cultures, cell lines, organ culture and tissue engineering etc.).	7
IV	Introduction of plant tissue culture (in brief history, culture media, explants, totipotency, dedifferentiation and types of cell & tissue culture etc.). Scope and applications of animal biotechnology and plant biotechnology	7
Practical	1. Study of structure and working of laminar air flow cabinets. 2. Study of working, maintenance and safety measures during handling of autoclaves. 3. To study working, maintenance/calibration and precautions during handlingof pH-meter, weighing balance, microscopesand other miscellaneous biotechlab instruments. 4. To study maintenance of hygiene/ aseptic conditions of biotech labs, instruments and glassware /plasticwares. 5. Precautions in handling of biochemicals and study of their proper disposal after use.	30

Learning Resources

1. Elements of Biotechnology - PK Gupta
2. Gene Biotechnology - S.N. Jogdand
3. Biotechnology 5th Edition (Cambridge) - John E. Smith
4. Biotechnology for beginners – Reinhard Renneberg Academic Press

BIOTECHNOLOGY:
SEMESTER-II

Course Type	Course Code	Name of the Course	Credit	Contact Hours/Week	Internal Assessment marks	End Term Marks	Max. Marks	Exam Duration
MDC-02 3 credit	**241/BIOT/MD202**	**Biology of infectious Disease**	**2**	**2**	**15**	**35**	**50**	**3 hrs.**
		Practical	**1**	**2**	**5**	**20**	**25**	**4 hrs.**

Course Learning Outcomes (CLO) After completing this course, the students are expected to learn the following:

1. This course will make understand different types of disease cause by Virus,Bacteria, Fungi, protozoa.

2. Aware of warfare agents, hospital-acquired infections (nosocomial).

3. Aware of water born disease and wastewater management.

4. Hospital-acquired infections, concepts of vaccines, National Immunization Programme(NIP).

Instructions for Paper-Setter

1. Nine questions will be set in all. All questions will carry equal marks.
2. Question No. 1, which will be short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more questions selecting one question from each unit.

UNIT	TOPICS	CONTACT HOURS
I	**Bacteria: Representative diseases- tetanus, cholera, leprosy ,plague, and syphilis. Infections caused by anaerobic bacteria ,spirochetes , rickettsiae.**	8
II	**Viruses:** Representative diseases to be studied in detail are-viral hepatitis, influenza/ respiratory viruses, HPV, rabies, polio and viral cancers, dengue, chicken guinea and AIDS. **Fungi: Superficial, subcutaneous, systemic and opportunistic mycoses infections**	8
III	**Protozoa:** Toxoplasmosis, trichomoniasis & leishmaniasis. **Parasitic diseases:** Ascariasis, Liverfluke, Malaria. **Water Born Disease and Waste Water Management**	7
IV	**Disease Burden and Its Economic Impact:** Bacterial and viral vectors;Biological warfare agents. **Hospital-Acquired Infections(Nosocomial):** Immune compromised states. Concepts of vaccines, national immunization programme (NIP)&other important vaccines.	7
Practical	1. To study the Immunization, Collection of Serum. 2. Sterilization Methods (dry, wet, UV, chemical agents) 3. Preparation of media for cultivation of bacteria. 4. Study from Permanent slides of different pathogens.	30

Learning Resources

1. **Medical Microbiology (Lange Basic Science). 23rd ed.,Brooks, G.F., Butel, J.S. ,Stephen ,A. ,Morse McGraw-Hill Medical.**
2. **Medical Microbiology: with Student Consult.7th ed.,Patrick,R.M.,KenS.Rosenthal,K.S..**
3. **Mims'MedicalMicrobiology.Goering,R.,Dockrell,H.,Zuckerman,M.,IvanM.Roitt,J.M.,PeterL.ChiodiniSaunders(W.B.)CoLtd.**

Course code	MDC-01				
Category	Multidisciplinary Course				
Course title	Importance of Interior Design: Daily Lifestyle				
Course ID	241/DESID/MD101				
Scheme and Credits	L	T	P	Credits	
	2	1	0	3	
Class work	25 Marks				
Exam	50 Marks				
Total	75 Marks				
Duration of Exam	3 Hours				

COURSE OBJECTIVES

The objective of the "Importance of Interior Design: Daily Lifestyle" course is to educate students on how interior design impacts daily life, influencing physical and mental well-being, productivity, and overall quality of life, and to equip them with the knowledge and skills to design spaces that promote health, safety, and sustainability, while also considering aesthetics, functionality, and social responsibility, enabling students to create interiors that enhance the human experience and support the well-being of individuals and communities.

UNIT-1

The Impact of Interior Design on Well-being

- The psychological effects of color, lighting, and texture
- The importance of ergonomics and spatial planning
- Designing for mental health and stress reduction

UNIT-2

Designing for Daily Functionality

- Space planning for efficiency and productivity
- The role of furniture and fixtures in daily life
- Designing for accessibility and universal design

UNIT-3

Sustainable and Socially Responsible Design

- Green design principles and sustainable materials
- Designing for energy efficiency and indoor air quality
- Socially responsible design practices and community engagement

COURSE OUTCOMES:

CO1	Students will be able to analyze the impact of interior design elements on human behavior, health, and well-being, and apply this knowledge to design spaces that promote occupant health and satisfaction.
CO2	Students will be able to design functional and efficient spaces that support daily activities and tasks, considering factors such as ergonomics, spatial planning, and furniture selection.
CO3	Students will be able to integrate sustainable and socially responsible design principles into their work, creating spaces that minimize environmental impact, promote social equity, and support community well-being.

Suggested Text Books:

1. Owen Jones (1856). *"The Grammar of Ornament"*
2. Elsie de Wolfe (1913). *"The House in Good Taste"*
3. Ellen Mazur Thomson (1997). *"Origins of Graphic Design in America"*

Suggested Reference Books

1. The Interior Design Reference & Specification Book by Chris Grimley and Mimi Love
2. The colour Scheme Bible: Inspirational Palettes for Designing Home Interiors by Anna Starmer
3. Residential Interior Design: A Guide to Planning Spaces by Maureen Mitton and Courtney Nystuen
4. TIME-SAVER STANDARDS FOR INTERIOR DESIGN by Joseph Dechiara, Julius Panero, and Martin Zelnik
5. Interior Design: Principles And Practice by M. Pratap Rao

***Additional references/ reading material could be suggested by the subject faculty**

Course code	MDC-02				
Category	Multidisciplinary Course				
Course title	Critical & Historic Studies: Styling, texture & textiles				
Course ID	241/DESID/MD201				
Scheme and Credits	L	T	P	Credits	
	2	1	0	3	
Class work	25 Marks				
Exam	50 Marks				
Total	75 Marks				
Duration of Exam	3 Hours				

COURSE OBJECTIVES

The course objective of "Critical & Historic Studies: Styling, Texture & Textiles in Interior Design" is to provide students with a comprehensive understanding of the historical and cultural contexts of textiles and their applications in interior design, enabling them to critically analyze, evaluate, and apply this knowledge to create informed and thoughtful design solutions that consider the social, cultural, and sustainable implications of textile selection and specification in interior spaces. By the end of the course, students will be able to demonstrate a deep understanding of the evolution of textiles, styling, and texture in interior design, and apply this knowledge to contemporary design practices, considering ethical and sustainable principles that promote responsible design decisions.

UNIT-1

Historical Context of Textiles in Interior Design

- Overview of textile history and development
- Textiles in ancient civilizations (Egypt, Greece, Rome)
- Textiles in medieval and Renaissance Europe
- Textiles in Asian and African cultures

UNIT-2

- Styling and Texture in Interior Design
- Principles of styling and texture in interior design
- Historical styles and their textile applications (Baroque, Rococo, Art Nouveau)
- Textile techniques and technologies (weaving, printing, dyeing)
- Contemporary textile design and innovation

UNIT-3

- Critical Perspectives on Textiles in Interior Design
- Cultural and social significance of textiles in interior design
- Textiles and identity (gender, class, ethnicity)

- Sustainability and ethical considerations in textile selection
- Contemporary debates and future directions in textile design for interior spaces.

COURSE OUTCOMES:

CO1	Students will be able to analyze the historical and cultural development of textiles and their applications in interior design, and evaluate their impact on the built environment.
CO2	Students will be able to apply critical thinking skills to the selection and specification of textiles in interior design, considering factors such as sustainability, ethics, and cultural sensitivity.
CO3	Students will be able to design innovative and effective textile solutions for interior spaces, integrating styling, texture, and textile knowledge to enhance the user experience and promote well-being.

Suggested Text Books:

1. Craven, R. C. (2006). *Indian art: A concise history*. London: Thames and Hudson.
2. Gombrich, E. H. J. (1979). *The story of art: With 398 illustrations*. Oxford: Phaidon.
3. Malek, J. (2003). *Egypt: 4000 years of art*. London: Phaidon.

Suggested Reference Books

1. "Textiles: The Art of Mankind" by Mary Schoeser (2012) - a comprehensive history of textiles from ancient to modern times.
2. "The Textile Book" by Agnes Geijer and Eva Öman (2017) - a thorough guide to textiles, covering materials, techniques, and applications.
3. "Textiles and Interior Design" by Karin Gangloff and Caroline Boot (2018) - a detailed exploration of textiles in interior design, including styling, texture, and sustainability considerations.

***Additional references/ reading material could be suggested by the subject faculty**

Course code	MDC-03				
Category	Multidisciplinary Course				
Course title	Introduction of Ergonomics				
Course ID	241/DESID/MD301				
Scheme and Credits	L	T	P	Credits	
	2	1	0	3	
Class work	25 Marks				
Exam	50 Marks				
Total	75 Marks				
Duration of Exam	3 Hours				

COURSE OBJECTIVES

The course objective for Introduction to Ergonomics in Interior Design is to equip students with the knowledge and skills to design spaces that promote comfort, efficiency, and safety by applying ergonomic principles, thereby enhancing the well-being and productivity of users, and enabling students to analyze and design interior spaces that accommodate the physical and cognitive needs of users, utilizing ergonomic guidelines and standards to create functional and sustainable environments that support human performance and quality of life. By the end of the course, students will be able to design interior spaces that prioritize user comfort, health, and safety, and demonstrate a commitment to creating inclusive and accessible environments.

UNIT-1

- Defining ergonomics and its importance in interior design
- Understanding human factors and anthropometrics
- Introduction to ergonomic principles and guidelines

UNIT-2

- Applying ergonomic principles to interior design
- Designing for comfort, safety, and efficiency
- Case studies of ergonomic design in various settings (e.g. offices, homes, public spaces)

UNIT-3

- Conducting ergonomic assessments and risk evaluations
- Using ergonomic tools and software (e.g. CAD, simulation software)
- Developing ergonomic design solutions and recommendations

COURSE OUTCOMES:

CO1	Students will demonstrate a thorough understanding of ergonomic principles and guidelines, and apply them to design interior spaces that promote user comfort, safety, and efficiency.
CO2	Students will develop the skills to analyze and assess interior spaces for ergonomic risks and opportunities, and provide recommendations for design improvements that support user well-being and performance.
CO3	Students will design interior spaces that integrate ergonomic considerations with aesthetic and functional goals, resulting in sustainable and user-centered design solutions that support the physical and cognitive needs of users.

Suggested Text Books:

1. "Ergonomics in Interior Design" *by Kathleen M. Butler (2016)*
2. "The Ergonomics of Interior Design" *by Susan M. Hiatt (2012)*
3. "Ergonomic Design for Interior Spaces" *by Jeffrey C. Clarke (2010)*

Suggested Reference Books

1. "Human Factors in Interior Design" by Nancy A. Stone (2007)
2. "Ergonomics for Interior Designers" by Christine M. Piotrowski (2005)
3. "Designing for Human Performance: Ergonomics in Interior Design" by James R. Hill (2003)

***Additional references/ reading material could be suggested by the subject faculty**

Course code	MDC-04				
Category	Multidisciplinary Course				
Course title	Theory Seminar: Theory of Interior Design				
Course ID	241/DESID/MD401				
Scheme and Credits	L	T	P	Credits	
	2	1	0	3	
Class work	25 Marks				
Exam	50 Marks				
Total	75 Marks				
Duration of Exam	3 Hours				

COURSE OBJECTIVES

The course objective of Theory Seminar: Theory of Interior Design is to equip students with a deep understanding of the fundamental principles, concepts, and theories that underpin the practice of interior design, enabling them to critically analyze and evaluate the social, cultural, and environmental contexts of interior spaces, and to develop a personal design philosophy and approach that integrates theoretical knowledge with practical application, preparing them to create innovative and meaningful interior design solutions that enhance the human experience and promote social responsibility, sustainability, and aesthetic appeal. By the end of the course, students will be able to articulate a clear understanding of interior design theory, apply theoretical frameworks to design challenges, and demonstrate a sophisticated understanding of the role of interior design in shaping human experiences and perceptions.

UNIT-1

- Overview of interior design history and philosophy
- Design principles and elements: space, form, texture, color, light
- Introduction to design movements and styles

UNIT-2

- Environmental psychology and human behavior
- Social and cultural factors influencing design
- Theories of spatial experience and perception

UNIT-3

- Critical design thinking and practice
- Sustainability, ecology, and environmental design
- Advanced design theories and case studies

COURSE OUTCOMES:

CO1	Students will be able to critically analyze and evaluate the fundamental principles and theories of interior design, and apply this knowledge to develop innovative and effective design solutions.
CO2	Students will be able to articulate a personal design philosophy and approach that integrates theoretical knowledge with practical application, and demonstrates an understanding of the social, cultural, and environmental contexts of interior spaces.
CO3	Students will be able to apply advanced design theories and critical thinking skills to develop sustainable, ecological, and socially responsible design solutions that enhance the human experience and promote aesthetic appeal.

Suggested Text Books:

1. "The Interior Design Handbook" *by Frida Ramstedt (2020)*
2. "Interior Design Theory: A Critical Introduction" *by Graeme Brooker (2018)*
3. "The Theory of Interior Design: A Philosophical Approach" *by John P. Reyes (2017)*

Suggested Reference Books

1. "Interior Design: A Critical Introduction" by Mark Taylor (2016)
2. "The Language of Interior Design" by Susan M. Winchip (2015)
3. "Interior Design: An Introduction to Principles and Practices" by Marybeth C. Stalp (2014)

***Additional references/ reading material could be suggested by the subject faculty**

Semester- I

241/AE/MD101	Contemporary Economic Issues in India	L	T	P	C
		3	0	0	3

Max. Marks: 75 **Written Ex am: 50**

Credits: 3 **Internal Assessment: 25**

Note for the paper Setter:

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (12 marks each).

Course objective: The course intends to acquaint students with the strategy of economic development of Indian economy. The Course does not require any prior knowledge of economics. The paper also aims at creating an awareness among the students regarding the current issues and trends in Indian Economy. The course will be useful for students aiming towards careers in the government sector, policy analysis and business.

Course Outcomes

CO1: Describe the current problems of Indian Economy

CO2: Identify the factors contributing to the recent growth of the Indian economy

CO3: Analyze the sector specific policies adopted for achieving the aspirational goals

Unit-I

Union Budget and economic Survey **Teaching Hours:12**

Key to budget documents, Economic Survey 2022-23 Chapter 3, Tax Reforms: Direct and Indirect tax reforms since 1991, Fiscal Deficit and FRBM Act, Recommendations of Current Finance Commission

Unit-II

Governance and Development **Teaching Hours:12**

Urbanization and Smart City Mission, Atma Nirbhar Bharat Abhiyan, Agrarian Crisis, Doubling Farm Incomes, MGNREGS, Make in India, development of economic and social infrastructure, Gatishakti national Masterplan, National logistics Policy.

Unit-III

India and International Trade **Teaching Hours:12**

Composition, direction and volume of India's Balance of Trade, New Foreign Trade Policy 2023, Global Value Chains and India, Recent Trade Agreements of India- UAE, Australia, and EFTA, Benefits of Trade agreements to India.

Suggested Readings

- Agrawal A.N. - Indian Economy- Problems of Development and Planning-Kalyani publishers,2011.
- Dutt Ruddar and K.P.M Sundaram (2001): Indian Economy, S Chand & Co. Ltd. New Delhi.
- Kapila Uma: Indian Economy: Policies and Performances, Academic Foundation 11. Mishra S.K & V.K Puri (2001) "Indian Economy and –Its development experience", Himalaya Publishing House.
- Let's Talk About Budget. Centre for Budget and Governance Accountability. Chapters 4 to 6. Union Budget of India, Making of Union Budget, What does Union Budget papers look like?
- Union Budget of India:
- https://www.indiabudget.gov.in/doc/Budget_at_Glance/budget_at_a_glance.pdf
- Economic Survey:
- https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap03.pdf
- Pranab Mukherjee (2012), "Budget Making", in K. Basu and A. Maertens (eds), The New Oxford Companion to Economics in India, OUP.
- Fifteenth Finance Commison Report
- https://fincomindia.nic.in/asset/doc/commissionreports/XVFC%20VOL%20I%20Main%20Report.pdf

Semester- II

241/AE/MD201	Data Analysis with Statistical Softwares	L	T	P	C
		1	0	2	3

Max. Marks: 75 **Practical Exam: 50**

Credits: 3 **Practical/ Internal Assessment: 25**

Note For the paper Setter

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
1. Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).
2. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (12 marks each).

Course objective

The objective of the paper is to make students familiar with theory and application of statistical methods. This course covers the statistical foundations of data analysis including the statistical theory and its applications in Economics through MS Excel and SPSS.

Course Outcomes

CO1: Understand the use of MS Excel and SPSS in data analysis.

CO2: Develop research skills for in-depth analysis of Data

CO3: Ability to use mathematical, statistical, financial, and graphical functions available in MS Excel and SPSS for various computational works related to economics and business.

Unit- I

Data Collection and Fundamentals of Data Analytics

Types of data: qualitative vs quantitative, primary vs. secondary, Use of various data collection techniques across various business domains, Qualitative data collection techniques (FGDs and Depth interviews), Quantitative data collection techniques (Survey), Quantitative data collection techniques (Experiments).

Unit- II

Module I- MS-Excel: Work sheet-entering data and creating work sheets and work book opening and formatting. Concept of Data-Record and File-types of Data-Data Entry-File handling and Operations like opening, appending and cascading-closing and attribute controls-Data Storage and Retrieval Data operations-Preparation and Formatting of Text, Tables and Graphs-Estimation of Descriptive Statistics.

Unit- III

Module II- Cross Section & Panel Data Techniques and Methods using SPSS- Groups, Tables, Graphs and Objects, Descriptive Statistics, One Way Tabulation, Cross Tables, One Sample T Test, Independent Sample Test, Paired Sample T Test, One Way ANOVA,

Correlation-Bivariate Partial, Regression-Least Square, Binary& Logistic Regression, 2 Stage Least Square, Factor Analysis, Principal Component, Panel Regression Analysis.

Suggested Readings

- Ken Black, 2013, Business Statistics, New Delhi, Wiley.
- Lee, Cheng. et al., 2013, Statistics for Business and Financial Economics, New York: Heidelberg Dordrecht.
- Anderson, David R., Thomas A. Williams and Dennis J. Sweeney, 2012, Statistics for Business and Economics, New Delhi: South Western.
- Waller, Derek, 2008, Statistics for Business, London: BH Publications.
- Wayne L. Winston, 6th Edition, Microsoft Excel Data Analysis and Business Modeling.
- U Dinesh Kumar, 2021, Business Analytics: The Science of Data-Driven Decision-Making.
- James Evans, Business Analytics: 2nd Edition.

Course code	MDC-1			
Category	Multidisciplinary Course			
Course title	Digital Electronics			
Course ID	241/MCA/MD101			
Scheme and Credits	L	T	P	Credits
	3	-	-	3
Theory Internal	25			
Theory External	50			
Total	75			
Duration of Exam	3 hrs.			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no. 2 to 9 will be 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE OUTCOMES:

CO1: Outline the general concepts and terminology related to logic gates, logic families, combinational and sequential circuits.

CO2: Discuss the basic analog/digital components and their interconnections in logic families and circuits.

CO3: Apply different methods/techniques to design various digital circuits.

CO4: Analyse day to day problems and industrial problems for their solutions using digital circuits.

CO5: Contrast different types of digital circuits and their designing methods.

UNIT - I

Information Representation: Number Systems, Binary Arithmetic, Fixed-point and Floating- point representation of numbers, BCD Codes, Error detecting and correcting codes, Character Representation – ASCII, EBCDIC, Unicode

UNIT - II

Binary Logic: Boolean Algebra, Boolean Theorems, Boolean Functions and Truth Tables, Canonical and Standard forms of Boolean functions, Simplification of Boolean Functions – Venn Diagram, Karnaugh Maps.

UNIT - III

Digital Logic: Introduction to digital signals, Basic Gates – AND, OR, NOT, Universal Gates and their implementation – NAND, NOR, Other Gates – XOR, XNOR etc. NAND, NOR, AND-OR-INVERT and OR-AND-INVERT implementations of digital circuits, Combinational Logic – Characteristics, Design Procedures, analysis procedures, Multilevel NAND and NOR circuits.

UNIT - IV

Combinational Circuits: Half-Adder, Full-Adder, Half-Subtractor, Full-Subtractor, Parallel binary adder/subtractor, Encoders, Decoders, Multiplexers, Demultiplexers, Comparators, Code Converters, BCD to Seven-Segment Decoder.

TEXT / REFERENCE BOOKS

1. Gill, Nasib Singh and Dixit J.B.: Digital Design and Computer Organisation, University Science Press (Laxmi Publications), New Delhi.
2. M. Morris Mano, Digital Logic and Computer Design, Prentice Hall of India Pvt. Ltd.
3. V. Rajaraman, T. Radhakrishnan, An Introduction to Digital Computer Design, Prentice Hall of India Pvt. Ltd.
4. Andrew S. Tanenbaum, Structured Computer Organization, Prentice Hall of India Pvt. Ltd.
5. Nicholas Carter, Schaum's Outlines Computer Architecture, Tata McGraw-Hill

Course code	MDC-2			
Category	Multidisciplinary courses			
Course title	Discrete Mathematics			
Course ID	241/MCA/MD201			
Scheme and Credits	L	T	P	Credits
	3	-	-	3
Theory Internal	25			
Theory External	50			
Total	75			
Duration of Exam	3 hrs.			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no. 2 to 9 will be 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

Course Outcomes:

CO1: Solve mathematical problems based on concepts of set theory, relations, functions and lattices.

CO2: Express logical sentences in terms of quantifiers and logical connectives.

CO3: Apply basic counting techniques to solve permutation and combination problems.

CO4: Solve recurrence relations.

CO5: Develop the given problem as graph networks and solve it with techniques of graph theory.

UNIT I

Set Theory: Introduction to set theory, Venn diagrams, Set operations, Algebra of sets, Duality, Finite and infinite sets, Counting principles, Power sets, Partitions, and Multi sets.

Relations: Cartesian product, Representation of relations, Types of relation, Binary relation, Equivalence relations, Partitions, Partial ordering relations, POSET, Hasse diagram, Lattices and its types.

Functions: Definition, Types of functions, Bijective functions, Composition of functions, Inverse functions, recursively defined functions, Finite and infinite sets, Countable and uncountable sets, Cantor's diagonal argument and The Power Set theorem, Schroeder-Bernstein theorem.

Logic And Propositional Calculus: Introduction, Propositions and compound propositions, Logical operations, Propositions and truth tables, Tautologies, Contradictions, Logical equivalence, Algebra of propositions, Conditional and Bi-conditional statements, The use of Quantifiers.

UNIT II

Basic Counting Techniques: Pigeon-hole principle, Permutation and Combination, the Division algorithm: Prime Numbers, The GCD: Euclidean Algorithm, The Fundamental Theorem of Arithmetic.

Recursion And Recurrence Relation: Polynomials and their evaluation, Sequences, Introduction to AP, GP and AG Series, Partial Fractions, Recurrence Relation, Linear Recurrence Relations with constant Coefficients, Linear Homogeneous Recurrence Relations with Constant Coefficients, Particular Solution- Homogeneous Linear Difference Equations, Non-Homogeneous Linear Difference Equations, Total Solution, solving recurrence relation using generating functions.

UNIT III

Definitions and examples of Algebraic Structures with one Binary Operation: Semi Groups, Monoids, Groups, Semigroups, Subgroups, Abelian groups, Cosets, Normal Subgroup, Cyclic groups, Congruence Relation and Quotient Structures, Permutation Groups, Lagrange's Theorem, Homomorphism, Isomorphism, Automorphism.

Definitions and examples of Algebraic Structures with two Binary Operation: Rings, Integral Domain, Fields; Boolean Algebra and Boolean Ring, Identities of Boolean Algebra, Duality, Representation of Boolean Function, Disjunctive and Conjunctive Normal Form

UNIT IV

GRAPHS THEORY: Introduction to graphs and their properties, Degree, Connectivity, Path, Cycle, Directed and undirected graphs, Subgraph, Bipartite Graphs, Regular Graphs, Connected Graphs, Multigraph and Weighted graph, Homomorphic and Isomorphic graphs, cut points and bridges, Paths and circuits, shortest path algorithm for weighted graphs, Eulerian paths and circuits, Hamiltonian path and circuits, Planar Graphs, Euler's formulae, Graph Colouring.

Textbooks&ReferenceBooks:

1. Kenneth H. Rosen, *Discrete Mathematics and its Applications*, 6th Edition, Tata McGraw Hill, 2011.
2. Satinder Bal Gupta: *A Text Book of Discrete Mathematics and Structures*, University Science Press, Delhi.
3. C. L. Liu and D. P. Mohapatra, *Elements of Discrete Mathematics A Computer Oriented Approach*, Tata McGraw Hill, 3rd Edition, 2008.
4. J.P. Trembley and R. Manohar, *Discrete Mathematical Structures with Applications to Computer*

Science, Tata McGraw Hill – 13th reprint, 2012.

5. Richard Johnsonbaugh, *Discrete Mathematics*, 6th Edition, Pearson Education Asia, 2011.
6. S. Lipschutz and M. Lipson, *Discrete Mathematics*, Tata McGraw Hill, 3rd Edition, 2010.
7. B. Kolman, R. C. Busby and S. C. Ross, *Discrete Mathematical structures*, 6th Edition, PHI, 2010.

Course code	MDC-2			
Category	Multidisciplinary Course			
Course title	**Modelling & Simulation**			
Course ID	241/MCA/MD202			
Scheme and Credits	L	T	P	Credits
	3	-	-	3
Theory Internal	25			
Theory External	50			
Total	75			
Duration of Exam	3 hrs.			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no. 2 to 9 will be 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

Course Outcomes:

CO1: Able to define the different modelling terms by analyzing the system or the data that is present.

CO2: Able to learn different mathematical model and their application in simulation.

CO3: Able to implement the model and from the results check for the correctness of the assumptions.

CO4: Able to analyse the outcomes and make predictions.

UNIT-I

Introduction: System, environment, input and output variables; State variables; StaticandDynamicsystems;HierarchyofknowledgeaboutasystemandModeling strategy.

Introduction to Simulation: Simulation, Why simulation: Advantages &Disadvantages,Areas of application, Model of asystem,Types ofmodels;Step sina simulation study, Simulation of continuous and discrete processes, Hybrid Simulation, Representationof time,Simulation ClockandTimeManagement.

UNIT-II

Modelsof ArrivalProcesses: Importance &Characteristics,Poisson Processes, Non- Stationary Poisson Processes, Batch Arrivals,Probability andMonteCarloSimulation.

Models of Queuing System: Queuing system importance, Characteristics & applications, Models of QueuingSystem, Single server and Multiple server Queueing Systems, Measurement of performance.

Random Numbers: Importance & characteristics, Pseudo Random Numbers, generation of random numbers, Tests forRandomness.

UNIT-III

Analysis of Simulation Output: Input Modelling: Data collection,Identification and distribution with data, parameter estimation; Stochastic nature of output data, Measures of Performance and their estimation,Goodness of fittests,Confidence IntervalsandHypothesisTesting,Estimationmethods,Simulationrunstatistics, Elimination of initialbias.

Verification and Validation: Model Building: Design & verification of simulation models, Validation of models &calibration,Three-Step Approach for Validation of Simulation Models.

SimulationSoftware: Selectionof Simulation Software,Simulation packages,Trend in Simulation Software.

UNIT-IV

Modelling & Simulation of Cloud, Fog & Edge Computing: Concept of and differences between Cloud, Fog & Edge Computing, Application of Cloud, Edge &Fog in healthcare centre, Computing implementation issues, iFogSimsimulator and its components, installing iFogSim, Simulating with iFogSim.

Case Study: Simulation of smart healthcare system

Textbooks&ReferenceBooks:

1. Narsingh Deo, Systems Simulation with Digital Computer, PHI Publication {EEE},3rdEdition,2004
2. ZeiglerB.P.Praehofer.H.andKimI.G."Theoryofmodelingandsimulation", 2nd Edition, Academic press 2000.
3. Shannon,R. E., "SystemSimulation:theArtand Science",PrenticeHall Inc. 1990.
4. Geoffrey Gordon, System Simulation, Prentice Hallpublication, 2nd Edition, 1978
5. Jerry Banks,John S Carson, II,Berry LNelson, David MNicol, Discrete Event system Simulation, Pearson Education, Asia, 4thEdition, 2007
6. Rajkumar Buyya & Satish Narayana Srirama,"Fog and Edge Computing", Willey Series on Parallel and Distributed Computing.
7. Amir Vahid Dastjerdi and Rajkumar Buyya: Fog Computing: Helping the Internet of Things Realize its Potentialll, University of Melbourne.
8. Zaigham Mahmood: Fog Computing: Concepts, Frameworks and Technologies, Kindle Edition.
9. Assad Abbas, Samee U. Khan, Albert Y.Zomaya: Fog Computing-Theory and Practice, John Wiley & Sons, 2020.

Course code	MDC-3			
Category	Multidisciplinary Course			
Course title	**Probability and Statistics**			
Course ID	241/MCA/MD301			
Scheme and Credits	L	T	P	Credits
	3	-	-	3
Theory Internal	25			
Theory External	50			
Total	75			
Duration of Exam	**3 hrs**			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no. 2 to 9 will be 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE OUTCOMES:

CO1: Elucidate the basic principles of statistics

CO2: Apply the correlation and regression analysis to engineering problem

CO3: Apply the principles of probability to thermodynamic problems

CO4: Explain probability distribution and solve problems

Unit –I

Statistical Methods: Definition and scope of Statistics, concepts of statistical population and sample. Data: Quantitative and qualitative, attributes, variables, scales of measurement nominal, ordinal, interval and ratio.

Measures of Central Tendency: Mean, Median, Mode. Measures of Dispersion: range, quartile deviation, mean deviation, standard deviation, coefficient of variation, Moments, skewness and kurtosis.

Unit – II

Statistical Methods: correlation and regression –Karl Pearson's coefficient of correlation and rank correlation problems, regression analysis-lines of regression, problems.

Curve fitting: curve fitting by the method of least square-fitting the curves of the form

Unit –III

Probability: Introduction, random experiments, sample space, events and algebra of events. Definitions of Probability – classical, statistical, and axiomatic. Conditional Probability, laws of addition and multiplication, independent events, theorem of total probability, Bayes' theorem and its applications.

Unit –IV

Probability Distributions: Random variables (discrete and continuous), probability mass/density function, Binomial, Poisson, Exponential and normal distributions

Textbooks & References:

1. Gupta, S. C., & Kapoor, V. K. . Fundamentals of Mathematical Statistics. Sultan Chand & Sons.
2. Hogg, R. V., Tanis, E. A., & Rao, J. M. Probability and Statistical Inference (7th ed.). Pearson Education, New Delhi.
3. Goon, A. M., Gupta, M. K., & Dasgupta, B. Fundamentals of Statistics, Vol. I & II. The World Press, Kolkata.
4. Ross, S. M. Introduction to Probability and Statistics for Engineers and Scientists. Academic Press.

Course code	MDC-3			
Category	Multidisciplinary Course			
Course title	**Fundamentals of Electrical and Electronics Engineering**			
Course ID	241/MCA/MD302			
Scheme and Credits	L	T	P	Credits
	3	-	-	3
Theory Internal	25			
Theory External	50			
Total	75			
Duration of Exam	**3 hrs**			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no. 2 to 9 will be 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

COURSE OBJECTIVES

CO1. To provide basic knowledge of different elements of electrical and electronics engineering field.

CO2. To familiarize the students with the concepts of electrical circuits and network Analysis.

CO3. To understand the basics of AC and DC circuits.

CO4. To familiarize students to the analysis and design of analog electronic circuits which form the basic building blocks of almost any electronic system.

CO5. To introduce p-n junction theory, operation of the semiconductor devices and their use in basic electronic circuits.

UNIT-I

DC Circuits: Role and importance of circuits in Engineering, Concept of fields, charge, current, voltage, energy and their interrelationships. Electrical circuit elements (R, L and C), voltage and current sources (ideal &Controlled) series and parallel circuits, Network reduction: voltage and current division. Kirchhoff current and voltage laws with their applications (Nodal and Mesh Analysis), Source transformation - star delta conversion. Superposition theorem, Thevenin and Norton Theorems, Millman, Substitution and Reciprocity theorem.

UNIT-II

AC Circuits: Representation of sinusoidal waveforms, average, peak and rms values, complex representation of impedance, phasor representation, complex power, real power, reactive power, apparent power, power factor and Energy, Analysis of single-phase ac circuits consisting of R, L, C, RL, RC, RLC combinations (series and parallel),Resonance; Introduction to three- phase circuits

UNIT-III

Introduction to p-n junction diode and its applications. Half wave & full wave rectifiers. clipping and clamping circuits, Varactor, Varistor, Voltage Regulator Bipolar junction transistors and its biasing BJT operation, BJT voltages and currents, CE, CB and CC characteristics, DC load line and bias point, base bias, emitter feedback bias, collector feedback bias, voltage divider bias, Thermal stability, biasing BJT switching circuits, transistor power dissipation and switching time, Testing of bipolar junction transistor with multi-meter, Reading datasheet of BJT.

UNIT-IV

Field Effect Devices: JFET: basic Operation and characteristics, drain and transfer characteristics, pinch off voltage, parameters of JFET: Transconductance (gm), ac drain resistance (rd), amplification factor(μ), Small Signal Model & Frequency Limitations. MOSFET: basic operation, depletion and enhancement type, pinch-off voltage, Shockley equation and Small Signal Model of MOSFET, MOS capacitor.

Textbooks & References:

1. Hughes, E. Electrical Technology. ELBS.
2. Millman, J., &Halkias, C. Integrated Electronics (2nd ed.). McGraw Hill.
3. Mano, M. M. Digital Logic Design. Phi.
4. Kothari, D. P., &Nagrath, I. J. Basic Electrical Engineering. Tata McGraw Hill.
5. Del Toro, V. Principles of Electrical Engineering. PHI.
6. Sedra, A., & Smith, C. Microelectronic Circuits: Theory and Applications (6th ed.). Oxford University Press.
7. Boylestad, R., &Nashelsky, L. Electronic Devices and Circuit Theory (10th ed.). Pearson.
8. Jain, R. P. Modern Digital Electronics. Tmh.
9. Malvino, A. P., & Leach, D. P. Digital Principles and Applications (8th ed.). TMH Publishers.
10. Tyagi, M. S. Introduction to Semiconductor Materials and Devices. John Wiley & Sons.

Course code	MDC-4			
Category	Multidisciplinary			
Course title	Cloud, Edge & Fog Computing			
Course ID	241/MCA/MD401			
Scheme and Credits	L	T	P	Credits
	3	-	-	3
Theory Internal	25			
Theory External	50			
Total	75			
Duration of Exam	3 Hrs			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no. 2 to 9 will be 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

Course Outcomes:

CO1: Understand Cloud Computing comprehensively and cloud security challenges.
CO2: Deploy Models and Service Offerings
CO3: Investigate management principles in cloud computing and virtualization technologies.
CO4: Analyse case studies and real-world examples of emerging paradigms like Fog Computing and Edge Computing.

UNIT-I

Cloud computing: Concept & definitions, Characteristics of Cloud, Cloud Computing Benefits and Limitations, Evolution of Cloud Computing, NIST model, cloud cube model, Cloud Computing v/s Client Server Architecture, Cloud computing vs. Cluster computing vs. Grid computing.

Models & Services: Deployment models: public, private, hybrid & community, Deploying a web service from inside and Outside of a Cloud. Service models: laaS, PaaS,Saas,IDaaS,CaaSandothers.

Applications: Applications areas of Cloud Computing. Cloud computing as indispensable to modern smart healthcare system, Role played by cloud computing/servicesduringoutbreakofpandemics {likeCovid-19}in keepingthe life moving.

UNIT-II

Cloud Management: Concept of Service Oriented Architecture, Service Oriented Architecture & Service Level Agreements (SLAs). Monitoring of an entire cloud computingdeployment stack,lifecyclemanagement of cloudservices.

Virtualization: Objectives, Benefits of Virtualization,Importance of virtualizationin cloud computing, Load Balancing and Virtualization,Improving Performancethrough Load Balancing, Hypervisors, Machine Imaging, Case Study: VMware.

Cloud Security Concepts: Cloud security challenges, Cloud security approaches, Cloud SecurityAlliancestandards,cloudsecurity models andrelated patterns.

Case Study: Cloud services offered by popular vendors like Amazon, Microsoft, Oracle. GI Cloud initiative.

UNIT-III

Fog Computing: Concept of Fog computing: Background, Motivation & Application Scenarios, Characteristics&Issues, ProsandCons, Myths about FogComputing,Fog Computing Services, Fog Computing Components.

Fog Protocols: Fog Protocol, Fog Kit, Proximity Detection Protocols- DDS/RTPS computing protocols.

Privacy-PreservingComputationinFogComputing: Introduction,ConceptofBlock Chain,Multi-PartyComputation andBlockChain.

Simulating with iFogSim

Case study: Exploiting Fog computing in Health Monitoring.

UNIT-IV

Edge Computing: Introduction, Application Scenarios, Characteristics & Issues, Edge Architectures,Edge Computing Applications. Difference between Cloud, Edge & Fog computing(s), Mobile Edge Computing.

Challenges in Federating Edge Resources: Network challenges, management challenges, other miscellaneous challenges.

Middleware for Fog & Edge Computing: Concept & importance, middleware infrastructures. Security managementinEdgeCloud Architecture.

Casestudy: Smart surveillance video stream processing at edge

Textbooks&References:

1. Toby Velte, Anthony Velte, Robert Elsenpeter,"Cloud Computing: A Practical Approach", The McGraw-Hill.
2. KrisJamsa,"CloudComputing:Saas,PaaS,laaS,Virtualizationandmore."
3. Tim Mather, Subra Kumaraswamy, Shahed Latif, "Cloud Security and Privacy: AnEnterprisePerspectiveonRisksandCompliance.",O'ReillyMediaInc.
4. Rajkumar Buyya, JamesBroberg,AndrzejM.Goscinski,"Cloud Computing: Principles and Paradigms.", Wiley.
5. Nikos Antonopoulos,Lee Gillam,"Cloud Computing: Principles, Systems and Applications.", Springer, 2012.

6. Ronald L.Krutz, Russell Dean Vines,"Cloud Security: AComprehensive Guide to Secure Cloud Computing.", Wiley-India.
7. Barrie Sosinsky,"Cloud Computing Bible.",Wiley-India.
8. Rajkumar Buyya & Satish Narayana Srirama,"Fog and EdgeComputing",Willey Series on Parallel and Distributed Computing.
9. Amir Vahid Dastjerdi and Rajkumar Buyya,"Fog Computing: Helping the Internet of Things Realize its Potential.",University of Melbourne.
10. Zaigham Mahmood, "Fog Computing: Concepts, Framework and Technologies.",Kirtdle Edition.
11. Assad Abbas,Samee U.Khan, Albert Y. Zomaya, "Fog Computing-Theory and Practice.", John Wiley & Sons, 2020.

Course code	MDC-4			
Category	Multidisciplinary			
Course title	Internet of Things			
Course ID	241/MCA/MD402			
Scheme and Credits	L	T	P	Credits
	3	-	-	3
Theory Internal	25			
Theory External	50			
Total	75			
Duration of Exam	3 Hrs			

Note: *The examiner will set nine questions in total. Question one will have seven parts from all units and the marks of first question will be of 20% of total marks of Question Paper and the remaining eight questions to be set by taking two questions from each unit and the marks of each question from Question no. 2 to 9 will be 20% of total marks of Question paper. The students have to attempt five questions in total, the first being compulsory and selecting one from each unit.*

Course Outcomes:

CO1: Understand the concepts of Internet of Things
CO2: Analyze basic protocols network
CO3: Understand the concepts of Web of Things
CO4: Basic Understanding of Cloud Computing.
CO5: Design IoT applications in different domain and be able to analyze their performance

UNIT - I

INTRODUCTION TO IOT: Introduction to IoT, Characteristics of IoT, Physical design of IoT, Logical design of IoT, Functional blocks of IoT, Communication models & APIs, IoT & M2M Machine to Machine, Difference between IoT and M2M, Software define Network, Challenges in IoT (Design ,Development, Security)

UNIT – II

NETWORK AND COMMUNICATION ASPECTS: Wireless medium access issues, MAC protocol survey, Survey routing protocols, Sensor deployment & Node discovery, Data aggregation & dissemination.

UNIT - III

WEB OF THINGS: Web of Things vs Internet of things, two pillars of web, Architecture and standardization of IoT, Unified multi tier-WoT architecture, WoT portals and Business intelligence, Cloud of things: Grid/SOA and cloud computing, Cloud middleware, cloud standards

UNIT – IV

RESOURCE MANAGEMENT IN IOT: Domain specific applications of IoT, Home automation, Industry applications, Surveillance applications, Other IoT applications Clustering, Synchronization, Software agents.

Textbooks&References:

1. Vijay Madisetti, Arshdeep Bahga, “Internet of Things: A Hands-On Approach”

2. Waltenegus Dargie, Christian Poellabauer, "Fundamentals of Wireless Sensor Networks: Theory and Practice"

3. Cuno Pfister, “Getting Started with the Internet of Things”, Shroff Publisher/Maker Media.

4. Internet of Things, RMD Sundaram Shriram K Vasudevan, Abhishek S Nagarajan, JohnWiley and Sons

MA Advertising and Public Relations
SEMESTER -1

Name of Subject: **Concept and Importance of Public Relations**		Maximum Theory marks: 75 (25+50)
Subject Code: MDC-01	Course ID: 241/APR/MD-101	

Instructions for External Examiner: This question paper shall be divided in two sections. Examiner is requested to set section A as compulsory question containing 10 marks and from the entire syllabus (can be either objective or subjective). Section B will be in choice from two of the questions from each unit. The students will be required to attempt one question from each unit. All questions from each unit will carry equal marks.

Objective: To provide students with a thorough understanding of the principles and concepts of public relations, enabling them to develop effective PR strategies and manage organizational communication. The course aims to equip students with the skills needed to create and implement PR campaigns, handle media relations, and manage crises effectively.

Course Outcomes:
Students will be able to:
1. Understand the foundational principles of public relations.
2. Analyse the role and impact of public relations in various contexts.
3. Develop skills to create and implement PR campaigns.

COURSE CONTENTS:

Unit 1: Introduction to Public Relations
1.1 Definition and Evolution of Public Relations 1.2 Role and Functions of Public Relations 1.3 PR Ethics and Legal Considerations 1.4 Differences Between PR, Advertising, and Marketing
Unit 2: Public Relations Theories and Models
2.1 Models of PR 2.2 Systems Theory and PR 2.3 Situational Theory of Publics 2.4 Excellence Theory in PR
Unit 3: PR Campaign Planning and Management
3.1 Research in PR: Methods and Applications 3.2 Strategic Planning in PR 3.3 Developing PR Messages and Tactics 3.4 Media Relations and Press Release Writing

Suggested Readings

1. Black Sam & Melvin L. Sharpe Practical Public Relations, Universal Book Stall, New Delhi
2. JR Henry and A. Rene Marketing Public Relations, Surjeet Publications, New Delhi
3. Jefkins Frank Public Relations Techniques, Butterworth- Heinmann Ltd., Oxford
4. Cutlip S.M and Center A.H. Effective Public Relations, Prentice Hall
5. Kaul J.M. Public Relation in India, Noya Prakash, Calcutta Pvt. Ltd.
6. Heath Robert L Handbook of Public Relations, Sage Publications, New Delhi

7. K.R. Balan Applied Public Relations and Communications, Sultan Chand and Sons
8. Philip Hens lowe Public Relations: A Practical Guide to the Basics, Crest Publishing House
9. Dennis L. Wilcose & Glen T Public Relations, Pearson, New Delhi Cameron
10. Bruce E Skinner Event Sponsorship, Publisher Vladimir Rukavina Wiley 2002, ISBN 0471126012
11. Anton Shene, Bryn Parry Successful Event Management Thomson Learning ISBN 1844800768, 2004
12. Judy Alley Event Planning, John Wiley and Sons ISBN 0471644129, 2000

MA Advertising and Public Relations

SEMESTER -2

Name of Subject: **Crisis Communication and its Applications**		Maximum Theory marks: 75 (25+50)
Subject Code: MDC-02	Course ID: 241/APR/MD-202	

Instructions for External Examiner: This question paper shall be divided in two sections. Examiner is requested to set section A as compulsory question containing 10 marks and from the entire syllabus (can be either objective or subjective). Section B will be in choice from two of the questions from each unit. The students will be required to attempt one question from each unit. All questions from each unit will carry equal marks.

Objective: To equip students with the knowledge and skills necessary to manage communication during crises, understanding the importance of timely, transparent, and effective communication in mitigating the impact of crises on organizations and individuals.

Course Outcomes:

1.Understand the fundamental principles and theories of crisis communication.
2.Develop skills in planning, implementing, and evaluating crisis communication strategies.
3.Analyze real-world case studies to identify best practices and lessons learned in crisis communication.

COURSE CONTENTS:

Unit 1: Introduction to Crisis Communication
1.1 Crisis Communication: Meaning, Process and Elements 1.2 Types of Crises 1.3 Actors/Agents of Crises 1.4 Stages of Crises Communication
Unit 2: Crisis Communication Planning and Implementation
2.1 Crisis Communication Plan: Components and Structure 2.2 Identifying and Assessing Potential Crises 2.3 Stakeholder Analysis and Communication 2.4 Developing Key Messages and Spokesperson Training
Unit 3: Evaluating and Learning from Crises
3.1 Post-Crisis Evaluation and Analysis 3.2 Learning from Case Studies: Successes and Failures 3.3 Rebuilding Trust and Reputation After a Crisis 3.4 Ethical Considerations in Crisis Communication

MA Advertising and Public Relations

SEMESTER -3

Name of Subject: **Basics of Advertisement Designing**		Maximum Theory marks: 75 (25+50)
Subject Code: MDC-03	Course ID: 241/APR/MD-303	

Instructions for External Examiner: This question paper shall be divided in two sections. Examiner is requested to set section A as compulsory question containing 10 marks and from the entire syllabus (can be either objective or subjective). Section B will be in choice from two of the questions from each unit. The students will be required to attempt one question from each unit. All questions from each unit will carry equal marks.

Objective: To provide students with a thorough understanding of the principles and concepts of advertising, enabling them to develop effective advertising strategies and manage successful advertising campaigns.

Course Outcomes:

Students will be able to:

1. Understand the foundational principles of advertising.
2. Develop skills to create compelling advertising messages.
3. Apply advertising concepts to various media platforms.

COURSE CONTENTS:

Unit 1: Introduction to Advertising
1.1 Definition and Evolution of Advertising 1.2 Types and Classifications of Advertising 1.3 Role and Functions of Advertising 1.4 Ethical and Legal Issues in Advertising
Unit 2: Creative Strategy and Execution
2.1 Creative Process in Advertising 2.2 Developing the Idea 2.3 Copywriting for Print, Electronic, and Digital Media 2.4 Visual Elements in Advertising
Unit 3: Advertising Media and Evaluation
3.1 Media Planning and Selection 3.2 Digital Advertising and Social-Media Advertising 3.3 Advertising Research and Effectiveness Measurement 3.4 Case Studies of Successful Advertising Campaigns

Suggested Readings

1. Sandage C H, Fryburger Vernon Advertising Theory and Practice: A.I.T.B.S. & Rotzoll Kim Publishers & Distributors, Delhi

2. . Mohan Mahender Advertising Management: Concepts & Cases; Tata McGraw Hill Publishers

3. Ogilvy David Ogilvy on Advertising; Prion Books Ltd.

4. Lewis Herschell Gordion The Complete Advertising and Marketing Handbook: East West Books (Madras) Pvt. Ltd., Chennai

5. Little Field James E & Kirkpatrik C.A.: Advertising: Mass Communication in Marketing; Vakils, Feffer & Simons Pvt. Ltd., Bombay

ABILITY ENHANCEMENT COURSE (AEC-1) **SEMESTER 1**

English Communication Skills- Level 1

Maximum Marks: 50

Theory: 35

Internal Assessment: 15

Course Objectives

- To make the students confident of speaking in English impeccably and with utmost enthusiasm.
- To familiarize the students with different styles of communication.
- To enlighten the students with the seven concepts of communication.
- To make the students understand the nuances of communication.
- To train the students and make them comprehend various aspects of Interview skills.

Course Outcomes

On completing 'English Communication Skills- Level 1' the students shall be able to realize following program outcomes: -

CO	Description
CO-1	Students will heighten their awareness of correct usage of English grammar in writing and speaking
CO-2	Students will improve their speaking ability in English both in terms of fluency and comprehensibility
CO-3	Students will strengthen their ability to write academic papers, essays and summaries using the process approach

UNIT 1

Oral Communication (Practical)

a) Listening and hearing

b) Presentation Skills

c) Mock Interviews

d) Group Discussions

UNIT 2

Written Communication

a) Letter writing

b) Article writing

c) Newspaper writing

d) Journal writing

e) Paraphrasing & Summarizing

f) Magazine writing

Instructions to the Paper setter and the students:

All questions are compulsory to attempt.

Question no. 1 will be on short notes. Write short notes on any 3 out of 5 (15 marks)

Unit 1

Question no. 2 will be an essay type question (10 marks)

Unit 2

Question no. 3 will be an essay type question (10 marks)

AEC-1

Tarseel-e-aama,Nazariya,Ibtida aur Irtiqa Max Marks:35

Objective:

اس پرچے کا مقصد یہ ہے کہ:

ا۔طلباء عوامی ذرائع ترسیل،جدید ابلاغ عام سے واقف ہو سکے۔

۲۔عوامی ترسیل،نئی تکنالوجی اور سوشل مڈیا کے صحیح استعمال کو سمجھ سکے۔

Course Outcome:

اس پرچے کی مکمل تدریس کے بعد طلباء اس قابل ہو جائیں گے کہ:

ا۔وہ ترسیل کی تعریف ونظریات اور عوامی ترسیل کی تاریخ سے واقف ہو جائیں گے۔

۲۔سوشل میڈیا اور نئی تکنالوجی کے بہتر استعمال سے واقف ہو جائیں گے۔

۳۔عوامی ترسیل کے سیاسی سماجی پہلو کے ساتھ ساتھ اس کے معاشی پہلو بھی جا سکیں گے۔

unit-1

ترسیل کی تعریف اور نظریات

unit-2

عوامی ترسیل کی مختصر تاریخ

unit-3

عوامی ترسیل،نئی تکنالوجی اور سوشل میڈیا

unit-4

عوامی ترسیل کے سیاسی،سماجی اور معاشی پہلو

کتب برائے مطالعہ

ا۔اے اے چٹرجی،عوامیتر سیل،نیشنل بک ٹرسٹ،نئی دہلی

۲۔اشفاق محمد خان،عوامی ذرائع ترسیل،مصنف،نئی دہلی

۳۔مہدی حسن، جدید ابلاغ عام، مقتدرہ قومی زبان، اسلام اباد
۴۔محمد شاہد حسین، ابلاغیات، ایجوکیشنل پبلشنگ ہاؤس، دہلی

Instructions to the Paper-Setter and Students:

All questions are compulsory to attempt.

Unit-1 There will be two questions of which one is to be opted of 7 marks.

Unit-2 There will be two questions of which one is to be opted 8 marks.

Unit-3 There will be two questions of which one is to be opted 10 marks.

Unit-4 There will be two questions of which one is to be opted 10 marks.

AEC-01 हिंदी भाषा में रचनात्मक अभिव्यक्ति- **I**

SEMESTER- 1st

पूर्णांक **35+15=50** **COURSE ID – 241/HIN/AE101**

Course Objectives:

रचनात्मक लेखन का विश्लेषणात्मक ज्ञान

रचनात्मक लेखन और उनके माध्यमों का व्यावहारिक प्रयोग

Course Learning Outcome :

रचनात्मक लेखन और हिंदी साहित्य की सैद्धांतिक समझ

रचनात्मक लेखन के विश्लेषण की क्षमता

ईकाई-**1**

- रचनात्मक लेखन से अभिप्रायः परिभाषा, अवधारणा, स्वरूप एवं सिद्धांत
- रचनात्मक लेखन के विविध क्षेत्रों का संक्षिप्त परिचय- मौखिक, लिखित, गद्य-पद्य, नाट्य-पाठ्य, मुद्रित-इलेक्ट्रानिक
- विविध अभिव्यक्ति क्षेत्र- साहित्य, पत्रकारिता, विज्ञापन

ईकाई-**2** विविध विधाओं की आधारभूत संरचनाओं का व्यावहारिक अध्ययन

- कविता- संवेदना, काव्यरूप, भाषा-सौष्ठव, छंद, लय, गति, और तुक
- कथा साहित्य- वस्तु, पात्र परिवेश एवं विमर्श
- नाट्य साहित्य- वस्तु, पात्र, परिवेश एवं रंगकर्म

इकाई-**3**

- मीडिया एवं फीचर लेखन में रचनात्मक अपेक्षा तथा आवाज
- मीडिया तथा फीचर लेखन से अभिप्राय : स्वरूप, महत्व, क्षेत्र
- फीचर लेखन की विशेषताएं
- फीचर लेखन की रचना प्रक्रिया

प्रस्तावित पुस्तकें-

1. मीडिया लेखन कला : सूर्य प्रसाद दीक्षित, पवन अग्रवाल
2. फीचर लेखन : पूरचंद टंडन, सुनील तिवारी
3. रचनात्मक लेखन : सं. रमेश गौतम, राजेंद्र गौतम, प्रभात रंजन

अन्य सहायक पुस्तक-

- सृजनात्मक साहित्य और अनुवाद- सुरेश सिंहल, पूरनचंद टंडन

निर्देश-

1. पाठ्यक्रम में निर्धारित प्रत्येक खंड में कम से कम एक दीर्घ प्रश्न अवश्य पूछा जाएगा। पूछे गए प्रश्नों की संख्या चार होगी, जिसमें से परीक्षार्थी को कुल दो प्रश्न करने होंगे। प्रत्येक प्रश्न के लिए 8 अंग निर्धारित है। पूरा प्रश्न कुल 16 अंकों का होगा।
2. पूरे पाठ्यक्रम में से कुल छः लघुत्तरी प्रश्न पूछें जाएंगे, जिनमे से परीक्षार्थी को 150 शब्दों में किन्हीं चार प्रश्नों का उत्तर देना होगा। प्रत्येक प्रश्न तीन अंक का होगा। पूरा प्रश्न 12 अंकों का होगा।
3. पूरे पाठ्यक्रम में से 7वस्तुनिष्ठ अनिवार्य प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न एक-एक अंक का होगा।

Semester-I

Ability Enhancement Course(s)

COURSE ID: 241/PHY/AE101

PROGRAMMING USING PYTHON

Marks (Theory): 20 **Credits: 1**

Marks (Internal Assessment): 05 **Time: 3 Hours**

Note: The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist of 4 parts covering entire syllabus. The question paper is expected to contain problems to the extent of 20% of total marks. The examinee will be required to attempt 5 questions; selecting one question from each unit and the compulsory.

Course Outcomes:

After successful completion of the course on Programming using Python, a student will be able to:

- *To grasp fundamental programming concepts and Python syntax: Understand variables, data types, basic operations, control flow (conditionals and loops), and error handling.*
- *To describe basic data structures and functions: lists, dictionaries, sets, and tuples.*
- *To use functions in some basic applications.*
- *To create and work with numpy arrays and perform different operations on arrays.*

Unit – I

Basics of Python: The Python Interpreter; The print Statement; Variables and Assignments; Strings; Comments and Docstrings; Debugging; Input; Data types and Data conversion; Lists and List Operations; Comparison Operations; Logical Operations.

Unit – II

Control Flow: Sequencing, Iteration and Selection; For and While Loops; Conditional Statements: if, if-else, elif; Break and Continue Statements; Ranges; Practice Programs: Reversing a String, Sum of Consecutive Numbers, To Find the factorial of a Number.

Unit – III

Functions: Built-in Functions, List and String Functions, User-defined function, Dictionaries and Dictionary Functions, Tuples, Sets, List Comprehensions, Practice Programs: Hashtag Generator, Search Engine, Make a Simple Calculator.

Unit – IV

NumPy Fundamentals: Importing Numpy; Difference between List and NumPy array; Adding, removing and sorting elements; creating arrays using ones(), zeros(), random(), arrange(), linspace(); Basic array operations (sum, max, min, mean, variance); 2-d arrays; matrix operations; reshaping and transposing arrays; savetxt() and loadtxt().

References/Books:

1. Python Crash Course by Eric Matthes (No Starch Press, 2nd ed., 2019).
2. Python Programming: An Introduction to Computer Science by John Zelle (Franklin, Beedle & Associates Inc., 2003).
3. Computation Physics: Problem Solving with Python, 3rd Edition by Rubin H. Landau, Manuel J Páez, Cristian C. Bordeianu (Wiley VCH, 2015).
4. Python documentation available at the Python web page (https://docs.python.org/3/).
5. Numpy documentation: https://numpy.org/doc/stable/index.html.

COURSE ID: 241/PHY/AE101

PROGRAMMING USING PYTHON LAB

Marks (Final Exam): 35 **Credits: 2**

Marks (Internal Assessment): 15 **Time: 3 Hours**

Course Outcomes:

After successful completion of the course on Programming using Python Lab, a student will be able to:

- *Learn different modules of python for numerical calculations.*
- *Utilize matplotlib for data visualization.*
- *Calculate various integrals using RK method.*
- *Perform matrix operations and manipulation of matrix data using numpy module.*

List of Programs:

1. Program to calculate mean, median and mode from a dataset.
2. Program to plot experimental data with error bars using Matplotlib.
3. Program to fit experimental data with a polynomial curve.
4. Program to find roots of a function using Newton-Raphson method.
5. Program for numerical integration using the Runge-Kutta method.
6. Program to create a 2D array (matrix) and perform basic operations like addition, subtraction, and multiplication.
7. Program for Random Walk Problem.

References/Books:

1. Python Crash Course by Eric Matthes (No Starch Press, 2nd ed., 2019).
2. Python Programming: An Introduction to Computer Science by John Zelle (Franklin, Beedle & Associates Inc., 2003).
3. Computation Physics: Problem Solving with Python, 3rd Edition by Rubin H. Landau, Manuel J Páez, Cristian C. Bordeianu (Wiley VCH, 2015).
4. Python documentation available at the Python web page (https://docs.python.org/3/).
5. Numpy documentation: https://numpy.org/doc/stable/index.html.

241/ECO/AE101	Basics of International Trade

Maximum Marks:50 **Written exam:35**
Credits:2 **Internal assessment:15**
Note:

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3*5=15 marks).
3. For the remaining three questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit I

Meaning, International trade and Internal trade, features of international trade, importance of international trade: Arguments against international trade; International trade and economic development

Trades theories: classical theory of trade: absolute and comparative advantage theory.

Unit II

Meaning of Free trade area and protection: Arguments for and against free trade and protection; Methods of Trade Barriers: Tariff and non- Tariff barriers, Types of non- tariff barriers.

Foreign Exchange, exchange market function, fixed and flexible exchange rates.

Semester-I

241/AE/AE101	Survey Design & Representation of Data	L	T	P	C
		1	0	1	2

Maximum Marks: 50 **Written xam:35**

Credits:2 **Internal assessment:15**

Note for the paper Setter

1. Five Questions will be set in all and students will be required to attempt 3 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the two units (10 marks each).

Course objective

This course introduces students to the principles and techniques of designing effective surveys and presenting data in meaningful ways. Students will learn the entire survey process from question formulation to data analysis and visualization.

Course Outcomes

CO1: Understanding of various survey methods and their applications in different contexts.

CO2**:** Learn to design surveys that are clear, unbiased, and effective in gathering the required data.

CO3**:** Apply survey design principles and data representation techniques to real-world scenarios or case studies.

Unit-I

Survey & Questionnaire **Teaching Hours:12**

Survey: Meaning & Definition- Identifying need for Survey- Identifying sample- Characteristics of Sample- Types of Survey- Survey methods- Advantages and Disadvantages of Survey- Essential steps in Survey-Online Survey

Questionnaire: Types and parts of Questionnaire, Qualities of good Questionnaire and Precautions in preparing Questionnaire.

Unit-II

Data **Teaching Hours:12**

Data, Methods of Collecting Data; Methods of Organising Data, Forms of Data Presentation- Tables and Figures- Basic Statistical Methods of Analysis of Data- Percentage, Mean, Mode and Median, Simple ways of showing results- Tables/Graphs/Diagrams.

Suggested Readings

- Fink, A. (2017). *How to conduct surveys: A step-by-step guide* (6th ed.). SAGE Publications.
- Groves, R. M., Fowler, F. J., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2009). *Survey methodology* (2nd ed.). Wiley.
- Fowler, F. J. (2013). *Survey research methods* (5th ed.). SAGE Publications.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). Wiley.
- Bryman, A., & Cramer, D. (2011). *Quantitative data analysis with IBM SPSS 17, 18, and 19: A guide for social scientists*. Routledge.

241/AE/AE102	Start-up Ecosystem	L	T	P	C
		2	0	0	2

Maximum Marks: 50 **Written xam:35**

Credits:2 **Internal assessment:15**

Note for Paper Setter

1. Five Questions will be set in all and students will be required to attempt 3 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the two units (10 marks each).

Course Objectives: The objective of the course is to understand the concept of a start-up, identify the required strategic resources and entrepreneurial strategies in developing entrepreneurship competencies

Course Outcomes

CO1**:** Understand the concept of entrepreneurship and identify the dimensions and resources required to establish a start-up.
CO2: Identify the various sources of finance for a new venture and role of central and state government in promoting entrepreneurship
CO3: Analyse start-up capital requirement by analysing legal factors

Unit I

Introduction to Start-up **Teaching Hours:10**

Meaning and Definition of Start-up, Concept of Entrepreneur – Features, Types and Functions, Startup Growth Stages: Concept/Idea stage, Pre-Seed/Validation, Seed/Early Stage, Growth Stage/Scaling Stage, Maturity/Exit/IPO/M&A Stage; Identifying Startup Capital Resource requirements, The Legal Environment- Approval for New Ventures-Taxes or Duties Payable for New Ventures. Start Ups Journey in India

Unit II

Financial Issues & Government Support to Start up **Teaching Hours:14**

Feasibility Analysis - The cost and process of raising capital – Unique funding issues of a high-tech ventures - Funding with Equity – Financing with Debt- Funding startups with bootstrapping- crowd funding- strategic alliances.
Start Up India Seed Fund Scheme, Tax Concessions, Other incentives for start ups, Start Up Venture funds, DPIIT and its role in nurturing start ups.

Suggested Readings:

- Vasant Desai, Small-Scale Enterprises and Entrepreneurship Ecosystem, 6th Edition, Himalaya Publishing House, 2016.

- Robert Hisrich, Michael Peters, and Dean Shepherd, Entrepreneurship, 11th Edition, McGraw Hill Education, 2019.
- Madhukar Shukla, Social Entrepreneurship in India, 1st Edition, SAGE Publications India Pvt Ltd., 2020.
- Peter Thiel & Blake Masters, Zero to One: Notes on Start Ups, or How to Build the Future, Random House, 2014.
- Steven Fisher, Ja-nae' Duane, The Startup Equation -A Visual Guidebook for Building Your Startup, Indian Edition, Mc Graw Hill Education India Pvt. Ltd, 2016.
- Eric Ries, The Lean Start-up: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses, 1st Edition, Crown Publishing, 2011.
- https://www.startupindia.gov.in/

AEC-2 ENGLISH LANGUAGE TEACHING

SEMESTER 2 **Maximum Marks: 50**

Theory: 35

Internal Assessment: 15

Course Objectives

- To explore theories and processes involved in first and second language acquisition, with a focus on English.
- To trace the evolution of the English language from its origins to its contemporary forms, examining key historical and cultural influences.
- To analyze the development of English vocabulary, including word formation, etymology, and shifts in meaning over time.

Course Outcomes

On completing '**English Language Teaching**' the students shall be able to realize following program outcomes: -

CO	Description
CO-1	Students will be able to explain major theories of language acquisition and how they apply to English language teaching.
CO-2	Students will be able to critically analyze different forms of English language use, including formal and informal registers, and their implications for communication.

CO-3	Students will be able to apply concepts from pragmatics and discourse analysis to understand how meaning is constructed in various contexts of English usage.

Unit-1

ELT: Approaches, Principles and Methods of ELT

English Language Learning Theories, Language Teaching Methods, Learners' Errors

Unit-2

Literature, ELT and Grammar

Teaching of English Grammar with Poetry, Fiction and Drama; Grammar Games; English Functional Grammar; Indian and Western Tradition of Grammar

Unit -3

Business English Business Correspondence-I (Building Business Vocabulary, News Reports, Business Magazines, Business Letters, Business Travel);

Business Correspondence-II(Writing using technology: faxes, emails, Making Resume, Writing Minutes)

Suggested readings:

Brown, H. Douglas. Principles and Practices of Language Learning and Teaching. Englewood Cliffs, NJ: Prentice hall, 1980.

Chomsky, Noam. Language and Mind. New York: Harcourt, Brace & World, 1968.

Emmorey, Karen. Language, Cognition and the Brain: Insights from Sign Language Research.NJ:Lawrence Erlbaum Associates, 2002

Gardner, R.C. Social Psychology and Second Language Learning: The Role of Attitude and Motivation.London: Edward Arnold Publishers, 1985.

Instructions to the Paper Setter and the students

All questions are compulsory to attempt.

Question no. 1 will be of short notes. Write short notes on any 4 out of 6 (8 marks)

Unit 1

Question no. 2 will be an essay type question (15 marks)

Unit 2

Question no. 3 will be an essay type question (9 marks)

Unit 3

Question no. 4 will be an essay type question (9 marks)

AEC-2

Sahafat Max Marks:35

صحافت

Objective:

اس پرچے کا مقصد یہ ہے کہ:

۱۔طلبہ کو صحافت کے رموز ونکات سے واقف کرایا جائے۔

۲۔صحافت کی فنی قدر و قیمت کو واضح ہوتے ہوئے اس کے تخلیقی وغیر تخلیقی امکانات سے روشناس کرایا جائے۔

۳۔طلبہ میں صحافت کے مختلف درجوں اور ان کے ذیلی پہلوؤں کا فہم پیدا کیا جائے۔صحافت کے گہرے مطالعے کے ذریعے صحافتی اصناف کے پیشہ ورانہ امکانات کی طرف طلبہ کو متوجہ کیا جائے تاکہ اس کورس کے اختتام کے بعد وہ بھی صحافت کے نئے امکانات تلاش کر کے اپنی صحافتی صلاحیتوں کو نکھارنے کے اہل ہوں۔

Course Outcome:

اس پرچے کی تعلیم کو کامیابی کے ساتھ مکمل کرنے کے بعد طالب علم اس قابل ہوگا کہ:

۱۔صحافت کے فن اس کی اقسام، پیشکش اور اطلاق طریقوں کو سمجھ سکے۔

۲۔صحافتی اصناف اور صحافتی/غیر صحافتی زبان میں امتیاز کر سکے۔

۳۔صحافت کے مختلف درجات کا شعور حاصل کر سکے۔

unit-1

صحافت کی تعریف

unit-2

صحافت کی تاریخ

unit-3

اردو صحافت کا ارتقاء

unit-4

اخباری تحریر کی خصوصیات

کتب برائے مطالعہ

۱۔اردو صحافت کی تاریخ، نادر علی خان

۲۔اردو میڈیا، خواجہ اکرام الدین

۳۔تاریخ صحافت اردو، امداد صابری

Instructions to the Paper-Setter and Students:

All questions are compulsory to attempt.

Unit-1 There will be two questions of which one is to be opted of 7 marks.

Unit-2 There will be two questions of which one is to be opted 8 marks.

Unit-3 There will be two questions of which one is to be opted 10 marks.

Unit-4 There will be two questions of which one is to be opted 10 marks.

SEMESTER - 2

AEC – 02 हिंदी भाषा में रचनात्मक अभिव्यक्ति - II

पूर्णांक-35+15=50 **Course Id- 241/HIN/AE202**

पाठ्यक्रम का उद्देश्य :

हिंदी रचनात्मक काव्य का विश्लेषणात्मक ज्ञान

रचनात्मक काव्य और रचनात्मक लेखन की रचना प्रक्रिया का व्यावहारिक प्रयोग

पाठ्यक्रम अध्ययन के परिणाम:

रचनात्मक काव्य और हिंदी साहित्य की सैद्धांतिक समझ

लेखन की विषयवस्तु का निर्धारण एवं चयन करना सीखेंगे।

पाठ्यक्रम:

इकाई 1 :रचनात्मक काव्य का स्वरूप

रचनात्मक लेखन की रचना प्रक्रिया

लेखन की विषयवस्तु का निर्धारण एवं चयन

गीत लेखन, प्रबंध लेखन, लंबी कविता लेखन, लघु कथा, एकांकी, उपन्यास आदि के लेखन की प्रविधि एवं प्रक्रिया

इकाई 2 :प्रिंट एवं दृश्य श्रव्य माध्यमों के लिए लेखन के क्षेत्र एवं विस्तार

रेडियो, टी.वी. और कम्प्यूटर आदि के लिए रचनात्मक लेखन के क्षेत्र, प्रविधि और प्रक्रिया

इकाई 3 : रेडियो लेखन और रचनात्मकता

रेडियो बच्चों के लिए रचनात्मक लेखन

रेडियो प्रहसन और नाट्य लेखन

रेडियो प्रसारण, एनीमेशन और सृजनशीलता

हास्य, व्यंग्य एवं मनोरंजन विषयक लेखन और रचनाशीलता

कृषको, ग्रामीणों के लिए लेखन और रचनाशीलता

निर्देश-

1. पाठ्यक्रम में निर्धारित प्रत्येक खंड में कम से कम एक दीर्घ प्रश्न अवश्य पूछा जाएगा। पूछे गए प्रश्नों की संख्या चार होगी, जिसमें से परीक्षार्थी को कुल दो प्रश्न करने होंगे। प्रत्येक प्रश्न के लिए 8 अंक निर्धारित है। पूरा प्रश्न कुल 16 अंकों का होगा।

2. पूरे पाठ्यक्रम में से कुल छः लघूत्तरी प्रश्न पूछें जाएंगे, जिनमें से परीक्षार्थी को 150 शब्दों में किन्हीं चार प्रश्नों का उत्तर देना होगा। प्रत्येक प्रश्न तीन अंक का होगा। पूरा प्रश्न 12 अंकों का होगा।

3. पूरे पाठ्यक्रम में से 7 वस्तुनिष्ठ अनिवार्य प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न एक-एक अंक का होगा।

प्रस्तावित पुस्तकें-

1. मीडिया लेखन कला : सूर्य प्रसाद दीक्षित, पवन अग्रवाल

2. फीचर लेखन : पूरचंद टंडन, सुनील तिवारी

3. रचनात्मक लेखन : सं. रमेश गौतम, राजेंद्र गौतम, प्रभात रंजन

अन्य सहायक पुस्तक-

* सृजनात्मक साहित्य और अनुवाद- सुरेश सिंहल, पूरनचंद टंडन

Semester-II

Ability Enhancement Course

COURSE ID: 241/PHY/AE201

ELECTRONIC DEVICES

Marks (Theory): 20 **Credits:01**

Marks (Internal Assessment): 5 **Time: 3 Hours**

Note: The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist of at least 4 parts covering entire syllabus. The question paper is expected to contain problems to the extent of 20% of total marks. The examinee will be required to attempt 5 questions; selecting one question from each unit and the compulsory.

Course Objectives:

After successful completion of the course on Electronics, a student will be able to:

- *Understand the workings and principles of Microwave devices.*
- *Gain Knowledge of Photonic devices and their operating characteristics*
- *Obtain a fair understanding of Memori devices and other electronic devices of importance, such as Piezoelectric sensors and actuators and Transducers, OLED, CCD and LCD*

Unit – I

Microwave Devices: Transfer electron devices: Tunnel and Gunn diode, Avalanche Transit time devices (Read, IMPATT diodes, parametric devices).

Unit – II

Photonic Devices: Radiative transition and optical absorption, LED, semiconductor lasers, heterostructure and quantum well devices, photodetector, Schottky barrier and p-i-n photodiode, avalanche photodiode, photomultiplier tubes, Solar cells.

Unit – III

Memory Devices: Volatile-static and dynamic RAM, CMOS and NMOS, nonvolatile NMOS, Optical and magnetic memories. charge coupled devices (CCD).

Unit – IV

Other Devices: Piezoelectric sensors and actuators, Transducers (temperature, pressure, vacuum, magnetic field, vibration, particle detector). OLED and LCD.

References/Books:

1. Physics of Semiconductor Devices, S. M. Sze and K. K. Ng (3rd Ed., Wiley, 2008)
2. Semiconductor devices Physics and Technology, S. M. Sze (2nd Ed., Wiley, 2008)
3. Microwave Devices and Circuits, S. Y. Liao (3rd Ed., Pearson, 2003)
4. Electronic Instrumentation and Measurement Techniques, W. D. Cooper and A. D.Helfrick (2nd Ed., Phi Learning, 2008)

ELECTRONIC DEVICES LAB

Marks (End Semester exam): 35 **Credits: 02**

Marks (Internal): 15

Course Objectives (COs):

After successful completion of the course on Physics lab, a student will be able to:

- Designing and working of diodes, solar cell, transistor and their applications.
- Explore the operation and advantages of operational amplifiers.
- Learn to design filters and analog to digital converts.
- Learn and understand about oscillators circuits.
- Understanding and working of 8085 nicroprocessor.

Students assigned the electronic/ general physics laboratory work will perform at least 8 experiments of the following sections:

1. To study the V-I characteristics of a Zener diode and its use as voltage regulator.
2. Study of V-I & power curves of solar cells, and find maximum power point & efficiency.
3. To design a Wien bridge oscillator for given frequency using an op-amp.
4. To design a phase shift oscillator of given specifications using BJT.
5. To design a digital to analog converter (DAC) of given specifications.
6. To design an inverting/ non-inverting amplifier using Op-amp (741,351)
7. To investigate the use of an op-amp as an Integrator and Differentiator..
8. To design a circuit to simulate the solution of simultaneous equation and 1st/2ndorder differential equation.
9. To Design filters (Low pass, High pass, band pass and band rejection) of the given specifications.
10. To Design multistage amplifiers of the given specifications.
11. To Design a triangular wave to sine wave converter.
12. To design, analyse and demonstrate positive and negative voltage level detectors.
13. To design and analyse Pulse Width Modulation using op-amp.

14. To study the zero-crossing detector and comparator using op-amp.
15. To design RC-Oscillator using an Op-Amp.
16. To design a Square Wave Generator.
17. Programs using 8085 Microprocessor: Addition, subtraction, multiplication and division.

References/Books:

1. Electronic Instrumentation and Measurement Techniques, W. D. Cooper and A. D. Helfrick (2nd Ed., Phi Learning, 2008)
2. Electronic Devices and Circuits, J. Millman and C. C. Halkias and S. Jit (4th Ed., McGraw-Hill, 2015)
3. Measurement, Instrumentation and Experimental Design in Physics and Engineering, M. Sayer and A. Mansingh (Prentice Hall India, 2010)
4. Microprocessor Architecture Programming and applications with 8085, R.S. Goankar, 2002, Prentice Hall.
5. Microprocessor 8085: Architecture, Programming and interfacing, A. Wadhwa, 2010, PHI Learning.
6. Basic Electronics: A text lab manual, P.B.Zbar, A.P.Malvino, M.A.Miller, 1994, McGraw Hill.
7. OP-Amps and Linear Integrated Circuit, R. A. Gayakwad, 4th edition, 2000, Prentice Hall.

Semester- II

241/AE/AE201	Quantitative Research Methods	L	T	P	C
		1	0	1	2

Maximum Marks:50 **Written exam:35**
Credits:2 **Internal assessment:15**

Note for Paper Setter

1. Five Questions will be set in all and students will be required to attempt 3 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the two units (10 marks each).

Course objective

This course introduces students to essential quantitative techniques used in economic research. Topics covered include statistical analysis, econometrics, and empirical methods relevant to economic modeling and policy analysis.

Course Outcomes

CO1: Understand fundamental quantitative methods used in economic analysis.

CO2: Apply statistical techniques to analyze economic data and draw meaningful conclusions.

CO3: Conduct independent empirical analysis using appropriate econometric methods.

Unit I

Introduction to Quantitative Methods in Economics **Teaching Hours:12**

Overview of quantitative research in economics, Types of data in economic research, Principles of statistical inference, Measures of central tendency and dispersion, Sampling techniques and estimation, Simple and multiple regression models.

Unit II

Time Series & Panel data Analysis **Teaching Hours:12**

Stationarity and trend analysis, Autoregressive and moving average models, Forecasting techniques, Panel data models: fixed effects and random effects.

Suggested Readings

- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

- Punch, K. F. (2013). *Introduction to social research: Quantitative and qualitative approaches* (3rd ed.). SAGE Publications.
- Trochim, W. M. K., & Donnelly, J. P. (2008). *The research methods knowledge base* (3rd ed.). Cengage Learning.
- Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches* (7th ed.). Pearson.

241/AE/AE202	Micro, Small & Medium Enterprises in India	L	T	P	C
		2	0	0	2

Maximum Marks:50 **Written exam:35**

Credits:2 **Internal assessment:15**

Note for Paper Setter

1. Five Questions will be set in all and students will be required to attempt 3 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the two units (10 marks each).

Course objective

The objective of this course is to make students understand the meaning of MSMEs, the challenges faced by them and various government initiatives taken in India to promote MSMEs.

Course Outcomes

CO1: Knowledge on Performance, Key Challenges of MSMEs and Role & Importance of MSMEs in India.

CO2: Gain knowledge on various support system of MSMEs and the role of government in promoting MSMEs

Unit I

MSMEs in India **Teaching Hours:10**

MSMEs: MSMED Act 2006, Revised Definition of MSMEs (2020), Features, Role of MSMEs in Economic Development, Challenges Faced by MSMEs.

Unit II

Institutional Support to MSMEs **Teaching Hours:14**

Institutional Support to MSMEs: SIDBI, Mudra Banks, Ministry of MSME, National Service and Technology Entrepreneurship Development Board. Government Initiatives for Promoting MSMEs, Steps Taken in Recent Budget to Encourage MSMEs.

Suggested Readings

- Mishra & Puri, (2015), '*Indian Economy'*, Himalaya Publishing House.
- Ministry of MSME ebook https://msme.gov.in/sites/default/files/FlipbookEnglishSchemeBooklet.pdf
- Garg, (2020), *Handbook on MSMEs (Micro, Small & Medium Enterprises)*, Bharat
- *Micro, Small & Medium Enterprises*, Indian Institute of Banking and Finance.
- Kapila, U. (2018), '*Indian Economy since Independence'*, Academic Foundation, 28th Edition.
- Latest Union Budget