

Information Brouchure

Admission to Ph D Programmes July 2022



**RESEARCH UNIT
INDIRA GANDHI
NATIONAL OPEN UNIVERSITY**

Maidan Garhi
New Delhi-110 068

www.ignou.ac.in

For queries applicants may contact :researchunit@ignou.ac.in

011-29571984/1985/1986

From 10.00 A.M. to 5.30 P.M

Monday to Friday (excluding Gazetted holidays)

1. GENERAL INFORMATION

- a) Applications are invited for admission to Ph.D programme in selected disciplines for the July 2022 session. The list of disciplines, name of the Programme coordinators, discipline wise number of seats available and eligibility criteria are given in **Appendix II**.
- b) The Ph D Programme is offered in strict compliance with the UGC (Minimum Standards and Procedures for award of Ph.D Degree) Regulations, 2022 and amendments there to from time to time.
- c) Selected candidates will be governed by IGNOU Ordinance/IGNOU Regulation/Guidelines for conduct of Ph.D Degree Programmes.
- d) Admission to the Ph.D Degree Programmes is strictly on merit, based on the performance in the Entrance Test and Interview.
- e) The syllabus of the Entrance Test is as per the 'University Grants Commission (UGC (Minimum Standards and Procedures for award of Ph.D Degree) Regulations, 2022 comprising 50% on Research methodology and 50% on specific subject.
- f) The question paper shall have questions consisting of 50% on research methodology and 50% on specific subject.
- g) The Entrance Test shall carry a weightage of 70% and 30% weightage shall be given to the interview/viva.
- h) IGNOU offers Ph.D programme under two categories: Part time and Full time. Both categories of students will be required to attend classes, if course work is allotted to them.
- i) In case a candidate does not meet minimum eligibility criteria and appears in the entrance test, it is at the candidates own risk and cost and if at any stage, it is found that the minimum eligibility criteria requirements are not fulfilled, the admission, if granted, shall be cancelled ipso facto.
- j) The minimum and maximum duration of Ph.D programme is three years and six years respectively. The Women Candidates and Persons with Disabilities (40% or more / "severe" where percentage is not defined) are given two years extra in the maximum duration.
- k) The Ph.D programme involves coursework during the first six months of admission, which will be conducted in IGNOU Campus at New Delhi only. A student has to attend the coursework on a regular basis. At least 80 per cent attendance is compulsory.
- l) As of now, IGNOU does not have hostel facilities for students. Students have to make their own arrangements for stay in Delhi.

2. GENERAL ELIGIBILITY CRITERIA FOR Ph.D.

The eligibility criteria for admission to Ph.D programme are as follows:

- a) Master's Degree from a University recognized by UGC in the relevant discipline with at least 55% marks [50%marks in the case of SC, ST and OBC(Non-creamy Layer)/Differently-Abled, EWS and other categories of candidates as per the decision of UGC from time to time.
- b) See **Appendix II** for further details.

3. SELECTION

PROCEDURE

Stage 1: Entrance Test

- a) The Entrance Test will be conducted by the University across the country. The list of eligible candidates to appear for the Entrance Test will be displayed on IGNOU website.
- b) No separate communication shall be sent to candidates in this regard.
- c) Hall Tickets enabling the candidates to take the Entrance Test will also be displayed on IGNOU website. Candidates are required to download and print the same to appear in the Entrance Test.
- d) Candidates are required to bring with them an original identity proof having photograph, such as Aadhar Card, Voter ID Card, Driving License, Passport and ID Card issued by Govt. Agencies.
- e) Those who secure at least 50% marks in the Entrance Test (45% marks in case of SC/ST/OBC (Non Creamy layers) / Differently abled persons, EWS and other categories of candidates as per the decision of UGC from time to time will be shortlisted for the interview in order of merit subject to the maximum limit of five times of the available seats.

Stage 2: Interview/ Presentation

- a) Short-listed Candidates in the Entrance Test will be called for interview/presentation of Synopsis before the Discipline specific Doctoral Research Committee.
- b) Offer letters for admission will be sent to the Selected Candidates only.

**Application fee Rs 1000/-
(Non-refundable)**

Note:

1. The candidates before applying for PhD Entrance Test must ensure their eligibility to appear the test and to go through the specific criteria (Appendix-II) before applying for a particular discipline.
2. In case, a Candidate applies for a particular Discipline which does not fall under the specific eligibility criteria of that Discipline, the University shall not consider such application.
3. The candidates are required to download the filled in registration / application form for future reference.
4. Candidates are required to apply online only. No offline/hardcopy of the application form will be accepted. Entrance Test is compulsory for all candidates including M.Phil/NET/JRF qualified candidates for admission to Ph.D Degree Programmes. No exemption from appearing for the entrance test is permissible.
5. A list of States and Cities for Research Entrance Examination is given in **Appendix-I**.
6. While applying, candidates must select **four** Examination City Centers in order of their preference. Since the seating capacity at each centre is limited, they will be considered for the allotment of the examination city centers as per University norms.
7. The University can change the examination city centre opted by the candidate to another nearby centre, if number of candidates are more/less at any examination city centre.
8. **The Examination City Centre, once opted, shall not be changed.**
9. **The Admit Card will be uploaded on IGNOU website.**
10. **Please check the admit card carefully for your Name, Subject Group, Date of Birth, Gender, Examination Centre Name, City, and Category, etc.**

11. Reservation of seats shall be as per Government of India rules**. (** Five percent (5%) seats shall be reserved for PWD-Person with Disability-(with not less than 40 percent). However, such candidates shall be adjusted against the appropriate category (GEN/SC/ST/OBC/EWS) to which they belong. No request for change in category shall be entertained once the application has been successfully submitted.
12. For any discipline specific query at any stage, candidates are advised to contact the concerned Programme Coordinator (see **Appendix II**)
13. For Discipline specific syllabus for Entrance Test please refer to **Appendix III**
14. **Being called for interview does not entitle a candidate to stake claim for admission. The Doctoral Research Committee may not recommend a candidate if the discipline does not have the specialization in which he/she wants to carry out research.**
15. **The University reserves all the rights not to fill up some or all the seats vacant in a Research Degree programme in case suitable candidates are not found at the level of Test/ Interview.**

Appendix-I
Examination CITY Centres

Sl. No.	RC CODE	CENTRE CODE	EXAM CITY
1	01	01152	HYDERABAD
2	02	0201	PORTBLAIR
3	03	0301	ITANAGAR
4	04	0401	GUWAHATI
5	05	0500	PATNA
6	06	06038D	CHANDIGARH
7	07	07185	KALKAJI
8	08	08035	GOA
9	09	0902	VADODARA
10	09	0905	SURAT
11	09	0909	MEHSANA
12	09	0920	AHMEDABAD
13	10	1075	KARNAL
14	11	1101	SHIMLA
15	11	1104	MANDI
16	11	1105	DHARAMSHALA
17	11	1113	BILASPUR
18	12	1232	JAMMU
19	13	1305	MYSORE
20	13	1306	SHIMOGA
21	13	1314	BANGALORE
22	14	14184	ERNAKULAM
23	15	1501	BHOPAL
24	15	1504	GWALIOR
25	15	15113D	INDORE
26	16	1608	NASIK
27		16144	PUNE
28	17	1701	IMPHAL
29	18	1800	SHILLONG
30		1802	TURA
31	19	1911	AIZAWL
32	20	2001	DIMAPUR
33	21	21185	CUTTACK
34	21	2109	PHULBANI
35	21	2141	KENDRAPARA
36	21	2114	BARIPADA
37	21	2102	CUTTACK
38	21	2100	BHUBANESHWAR
39	21	2112	KEONJHAR
40	21	2106	BALASORE
41	21	2104	BERHAMPUR
42	21	2118	BHADRAK
43	21	2135	BHANJANAGAR

44	22	2206	LUDHIANA
45	23	2357	JAIPUR
46	24	2401	GANGTOK
47	25	2501	CHENNAI
48	26	2636	AGARTALA
49	27	2701	LUCKNOW
50	28	2801	KOLKATA
51	29	0729	ALIPUR
52	29	29049(P)	INDRAPRASTHA DELHI
53	29	29078	KAROLBAGH
54	30	30039	SRINAGAR
55	31	2705	DEHRADUN
56	31	2711	HALDWANI
57	32	32019	RANCHI
58	32	32024	JAMSHEDPUR
59	32	0503	DHANBAD
60	33	0103	VIJAYAWADA
61	33	33029	TIRUPATI
62	35	1510	RAIPUR
63	36	1607	NAGPUR
64	36	1613	NANDED
65	36	1609	AMRAVATI
66	36	36062	GADCHIROLI
67	37	0410	JORHAT
68	38	0773P	NANGLOI, DELHI
69	38	38036	JANAKPURI, DELHI
70	39	07107	VASUNDHARA ENCLAVE
71	39	2702	AGRA
72	39	2718	GHAZIABAD
73	39	39010	MEERUT
74	39	2714	MORADABAD
75	40	1441	THIRUVANANTHAPURAM
76	40	1413	KOLLAM
77	41	4100	JABALPUR
78	42	42012	RAJKOT
79	43	2502	COIMBATORE
80	43	2503	MADURAI
81	43	2504	TRICHY
82	44	2110	JEYPORE
83	44	2113	BHAWANIPATNA
84	45	45030	SILIGURI
85	46	0522	DARBHANGA
86	47	2713	ALIGARH
87	48	2708	VARANASI
88	49	1603	VILE PARLE
89	49	1632	PANVEL
90	82	0505	BHAGALPUR
91	83	1403	VATAKARA

92	84	0109	VISAKHAPATNAM
93	84	84101	NAUSENABAUGH
94	84	84002	RAJAHMUNDRY
95	85	1303	DHARWAD
96	85	1308	BELGAUM
97	85	1310	BALLARI
98	85	1385	GULBARGA
99	85	1612	SOLAPUR
100	86	0555	SAHARSA
101	87	3609	DEOGHAR, JHARKHAND
102	88	2302	UDAIPUR
103	88	2305	BIKANER
104	88	88008	JODHPUR
105	89	2105	ANGUL, Odisha
106	89	2108	SAMBALPUR, Odisha
107	89	21116	DEOGHAR, Odisha
108	89	2134	BARGARH, Odisha
109	89	2103	ROURKELA, Odisha

Appendix – II

Sl. No.	School	Discipline	PhD vacancies	Name of Programme Coordinator /Contact	Specific Eligibility Criteria, if any
1.	School of Social Sciences (SOSS)	Economics (PHDEC)	GEN - 05 OBC - 01 SC - 00 ST - 00 EWS - 00 Total - 06	Prof. Kausuva Barik kbarik@ignou.ac.in 011 - 29572734	Master's Degree or M.Phil. Degree in Economics
2.		Sociology (PHDSOC)	GEN - 07 OBC - 02 SC - 01 ST - 00 EWS - 01 Total - 11	Prof. Nita Mathur nitamathur@ignou.ac.in 011- 29572720	Master's Degree in Sociology
3.		History (PHDHIS)	GEN - 06 OBC - 02 SC - 01 ST - 00 EWS - 01 Total - 10	Dr. Mayank Kumar mayankkr@ignou.ac.in 011- 29572740	Master's Degree in History in the field of Ancient and Medieval/Early Modern/Environmental History.
4.		Library and Information Science (PHDLIS)	GEN - 13 OBC - 06 SC - 03 ST - 01 EWS - 02 Total - 25	Dr. Z. Yanthan zyanthan@ignou.ac.in 011- 29572723	Master's Degree and/or M.Phil. Degree in Library and Information Science
5.		Psychology (PHDPC)	GEN - 08 OBC - 03 SC - 01 ST - 01 EWS - 01 Total - 14	Prof. Suhas Shetgovekar, Dr. Monika Misra sshetgovekar@ignou.ac.in ; monikamisra@ignou.ac.in 011- 29572721; 011 -29572781	Master's Degree in Psychology or a concerned/relevant/ allied subject (applied psychology, counselling psychology, forensic psychology, clinical psychology and cognitive psychology) from a recognized University/Institute
6.	School of Journalism and Mass Communication (SOJNMS)	Journalism and Mass Communication (PHDJMC)	GEN - 05 OBC - 01 SC - 01 ST - 00 EWS - 00 Total - 07	Dr. Shikha Rai 011- 29571608 shikharai@ignou.ac.in	Master's degree in communications
7.	School of Performing and Visual Arts (SOPVA)	Theatre Arts(T) (PHDPVA)	GEN - 04 OBC - 01 SC - 00 ST - 00 EWS - 00 Total - 05	Dr. G. Bharadwaza 011- 29571654 dr.g_bharadwaza@ignou.ac.in	1.MPhil in Theatre Arts from any recognized University with Post Graduate Degree in Theatre Arts 2. Post Graduation in Theatre Arts

8.		Fine Arts (F) (PHDPVA)	GEN – 04 OBC – 01 SC - 00 ST - 00 EWS – 00 Total - 05		Master's degree in Fine Arts
9.		Dance (D) (PHDPVA)	GEN – 03 OBC – 01 SC - 00 ST - 00 EWS – 00 Total - 04		Master's degree in Dance
10.	School of Management Studies (SOMS)	Commerce (PHDCOM)	GEN – 07 OBC – 03 SC - 01 ST - 00 EWS – 01 Total– 12	Prof. Nawal Kishor & Dr. Madhulika P. Sarkar nkishor@ignou.ac.in / Madhulikap.sarkar@ignou.ac.in 011-29573026 /29573023	Master's Degree in Commerce or Candidates having qualified CA /CS/ICWA
11.		Management (PHDMGMT)	GEN – 08 OBC – 03 SC - 01 ST - 01 EWS - 01 Total - 14	Prof Neeti Agrawal. phdmanagement@ignou.ac.in 011- 29573020	Master's Degree and/or M. Phil.Degree in Management Studies or in allied disciplines. Candidates having qualified CA / CS/ ICWA qualifications are also eligible to apply.
12.	School of Education (SOE)	Education (PHDES)	GEN – 11 OBC – 05 SC - 03 ST - 01 EWS – 02 Total– 22	Prof. Bharti Dogra 011-29572993, bhartidogra@ignou.ac.in	MA(Education) or M.Ed.
13.		Distance Education (PHDDE)	GEN – 08 OBC – 03 SC - 02 ST - 01 EWS – 01 Total– 15	Prof. Santosh Panda & Prof. Amiteswar Ratra 29572615 / 2609 spanda.ignou@gmail.com / amiteshwar@ignou.ac.in	Master's Degree and/or M.Phil. Degree in Distance Education/Education/ Mass Communication and New Media Studies Master's Degree in Distance Education/ MA Education/M.Ed / Masters in Mass Communication and new media study / any Masters Degree with B.Ed/M.Ed

14.	School of Gender & Development (SOGDS)	Gender & Development Studies (PHDGDS)	GEN – 04 OBC – 01 SC - 00 ST - 00 EWS – 00 Total - 05	Prof. Himadri Roy 29571615 himadriroy@ignou.ac.in	Master's degree in Women's Studies or Gender Studies with 55% OR Master's degree in other streams with one or two courses in the area of Women's Studies or Gender Studies and/or with demonstrable evidence of teaching and / or research and publications in the area of Women's Studies or Gender Studies .
15.	School of Inter Disciplinary and Trans. Disciplinary Studies (SOITS)	Inter Disciplinary and Trans. Disciplinary Studies (PHDITS)	GEN – 06 OBC – 02 SC - 01 ST - 00 EWS – 01 Total - 10	Dr. Sadananda Sahoo ssahoo@ignou.ac.in 011-29573378	Master's Degree from a University recognized by UGC
16.	School of Agriculture (SOA)	Dairy Science and Technology (PHDDR)	GEN – 03 OBC – 01 SC - 00 ST - 00 EWS – 00 Total - 04	Dr P. Vijaya Kumar / Dr Mita Sinhamahapatra 011- 29573092 / 2973 pvkumar@ignou.ac.in , / mitasmp@yahoo.co.in	Master's Degree in Dairy Science (Dairy Technology / Dairy Chemistry / Dairy Microbiology / Dairy Engineering) / Food Science / Food Technology / MVSc (Animal Products Technology / Livestock Products Technology / Dairy Science) M.Sc. Agriculture (Dairy Science / Dairy Technology) / M.Sc. (Agriculture Processing and Food Engineering) with B.Tech in Dairy Technology.
17.	School of Extension & Development Studies (SOEDS)	Development Studies (PHDDV)	GEN – 06 OBC – 02 SC - 01 ST - 00 EWS – 01 Total - 10	Dr. Pradeep Kumar 011-29571664 / 1669 pradeep@ignou.ac.in	Possesses Master's Degree from a University recognized by UGC or any other qualification recognized as equivalent thereto in such fields of study
18.	School of Tourism and Hospitality Service Management (SOTHSM)	Tourism and Hospitality Service Management Studies (PHDTS)	GEN – 10 OBC – 04 SC - 02 ST - 01 EWS – 01 Total - 18	Dr. Arvind Kr. Dubey 011 -29571754 / 1751 arvindkrdubey@ignou.ac.in	Masters degree in Tourism/Hospitality or relevant

19.	School of Computer & Information Science (SOCIS)	Computer Science (PHDCS)	GEN – 05 OBC – 01 SC - 01 ST - 00 EWS –00	Dr. Akshay Kumar akshay@ignou.ac.in 011-29572914	Master of Computer Applications (MCA) or M.Sc in Computer Science / IT/ equivalent or ME/MTech in Computer Science/IT/ equivalent
			Total - 07		
20.	School of Health Sciences (SOHS)	Nursing (PHDNS)	GEN – 04 OBC – 01 SC - 00 ST - 00 EWS – 00	Dr. Reeta Devi, Dr. Neerja Sood 011-29572807 / 29572805 reetadevi@ignou.ac.in ; neerjasood@ignou.ac.in	Master's Degree in Nursing
			Total - 05		
21.	School of Foreign Languages (SOFL)	French (PHDFL)	GEN – 03 OBC – 00 SC - 00 ST - 00 EWS –00	Dr. Deepanwita Srivastava 011 – 29571639 deepan@ignou.ac.in	M.A / M Phil Degree in French from a recognized Indian or Foreign University
			Total – 03		
22.	School of Vocational Education and Training (SOVET)	Vocational Education and Training (PHDVE)	GEN – 07 OBC – 03 SC - 01 ST - 00 EWS –01	Prof. A. K. Gaba Prof. R.S.P Singh akgaba@ignou.ac.in rspsingh@ignou.ac.in 011-29571642 29571645 /	Master's Degree in Economics, Commerce, Management, Education, Agriculture Extension or Extension Education, Environmental Sciences
			Total – 12		
23.	School of Humanities (SOH)	Hindi (PHDHIN)	GEN – 08 OBC – 03 SC - 01 ST - 00 EWS –01	Prof. Jitendra KumarSrivastava jksrivastava@ignou.ac.in 011 - 29572795;	Master's Degree and/or M.Phil. Degree in Hindi Language and Literature
			Total – 13		
24.	School of Continuing Education (SOCE)	Child Development (PHDCD)	GEN – 05 OBC – 02 SC - 01 ST - 00 EWS –00	Prof. Rekha S.Sen rekhasharmasen@ignou.ac.in 01129572958	M.Sc. Home Science (withspecialization in Child Development / Human Development / HumanDevelopment and Childhood Studies / Human Development and Family Studies)/M.Sc. Home Science (General / Composite)/MA / M.Sc.Early Childhood Development/MA Education (with specialization inEarly childhood Care and Education)/M.Ed in Special Education in any
			Total – 08		

					disability area/ M.Sc. in Counseling and Family Therapy
25.		Home Science (PHDHC)	GEN – 04 OBC – 01 SC - 00 ST - 00 EWS –00 Total – 05	Prof. Heena K. Bijli 011- 29572948 heenakbijli@ignou.ac.in	M.Sc. in Home Science with a specialization in Community Resource Management and Extension / Family and Community Resource Management / Development Communication and Extension / Resource management and Design Applications/ Extension / Extension Education and Communication / M.Sc. Home Science (General)
26.		Rural Development (PHDRD)	GEN – 03 OBC – 00 SC - 00 ST - 00 EWS –00 Total – 03	Dr. Bishnu Mohan Dash 011-29572955 bmdash@ignou.ac.in	Master's Degree with 55% in Rural Development/Social work/Sociology/ Development Studies.
27.	School of Social Work (SOSW)	Social Work (PHDSW)	GEN – 13 OBC – 06 SC - 03 ST - 01 EWS –02 Total – 25	Prof. Rose Nembiakkim 29571695 rosenembiakkim@ignou.ac.in	Master's Degree in Social Work.

Appendix– III

Syllabus of Entrance Test for various disciplines

1. PhD in Economics (PHDEC)

The syllabus includes topics from Microeconomics, Macroeconomics and Research Methodology.

Microeconomics

Consumer Behavior: Theory of Demand, Recent developments of Demand theory

Producer Behavior: Theory of Production, Theory of Cost

Price and Output Determination: Perfect Competition, Monopoly, Monopolistic Competition, Collusive and non-Collusive Oligopoly, Alternative theories of Firm

Welfare Economics: Pigovian vs. Paretian Approach, Social Welfare Function, Externality and Public Goods, Social Choice and Welfare

General Equilibrium

Economics of Uncertainty: Choice in Uncertain Situations, insurance Choice and Risk

Game Theory: Cooperative and non- Cooperative games

Macroeconomics

Classical and Keynesian Approaches, neoclassical Synthesis, Economic Growth- Solow Model,

Endogenous Growth Model, Rational Expectations,

Inter-temporal decision-making- Ramsey Model, Overlapping generations Model, Money and the Role of Monetary Policy,

Business Cycles- Traditional Theories, Real Business Cycles

Unemployment- Traditional Theories, Search Theory, Nominal and Real Rigidities, New Keynesian Theories of Unemployment

Open-Economy: Flexible and Fixed Exchange Rate Systems, Sluggish Price Adjustment

Research Methodology

Approaches to Social Enquiry, Research Process, Hypothesis: Its Types and Sources, The Nature, Sources and Types of Data, Measurement Scales of Variables

Descriptive Statistics and Data Presentation, Correlation and Regression, Probability and Probability Distributions

Sampling Theory- Sampling Distribution, Statistical Inference

Measurement of Inequality, Construction of Composite Index

Introduction to Differential Calculus- Functions, Limit and Continuity, Differential Calculus Partial and Total Differentiation

Extreme Values and Optimisation- maxima and Minima, Unconstrained Optimisation, Constrained Optimisation
Integral Calculus and Economic Dynamics: Integration and Applications of Economic Dynamics, Difference Equations and Economic Dynamics
Linear Algebra and Economics Applications- Vectors and Matrices, Input-Output Analysis, Linear Programming.

2. PhD in Sociology

Section - A

1. Research Methodology

- Logic of enquiry in social research
- Logic of Theory Building
- Issues of epistemology
- Positivism and its critique
- Comparative Method
- Feminist Method
- Participatory Method

2. Research Methods and Research Design

- Types of Research
- Methods of Research
- Research Design
- Techniques of Data Collections: Sampling, Interview, Case Study, Life History, Observation, Hypothesis, Correlation and regression.

Section - B

- Sociological concepts: social groups, social structure, community, association, culture, identity, tradition, modernity, social processes, social Institutions- family, marriage, kinship, state, religion
- Sociological Theories: Evolutionary- Functional, Marxian, Structural-Functional, Structural, Symbolic interactionism, Phenomenology, Post-Modernism
- Social stratification-castes, class, race, gender, ethnicity
- Types of societies: colonial, post colonial, simple, agrarian, Industrial, post industrial, knowledge society
- Social change: Theories of social change, social transformation, social movements, social development

3. PhD in History

Section-A

Research Methodology and Historiography

- i. Objectivity and Interpretation
- ii. Ancient Indian Historiography
- iii. Medieval Indian Historiography
- iv. Modern Indian Historiography

Section-B

Ancient India

- v. Indus Valley Civilization
- vi. Vedic Society
- vii. Buddhism and Jainism
- viii. Polity in Ancient India
- ix. Economy in Ancient India

Medieval India

- x. Indian Feudalism
- xi. Land Revenue
- xii. Urbanization
- xiii. Polity in Medieval India
- xiv. Bhakti & Sufi Movements
- xv. 18th Cent. Debate

Modern India

- xvi. Revolt of 1857
- xvii. National Movement
- xviii. Economic Impact of Colonial Rule
- xix. Social and Intellectual Reform Movements
- xx. Gandhi and Gandhian Ideology

4. PhD in Library & Information Science (PHDLIS)

Section - A

1. Introduction to Research Methodology

- Fundamentals of research
- Types of research
- Research methods – quantitative and qualitative
- Research Tools,
- Research design
- Ethical issues in research (IPR, plagiarism)
- Research Communication (report writing, style manuals, web enabled citation management tools)
- Methods and techniques of Reviewing (book review, literature review,

Section – B

1. Information, Communication and Society
2. Information Sources, Systems and Services
3. Information Processing and Retrieval
4. ICT Applications
5. Recent Trends in LIS

6. PhD in Psychology (PHDPC)

Research Methodology (50%)

7.

Constructs and variables, Steps in psychological research Problem and hypothesis, Type 1 and type 2 errors; Types of research: experimental, non experimental, field experiments, field studies, survey research; action research; Research designs; Paradigms of research; Methods of data collection including interview, observation, objective tests, questionnaire; test construction, reliability and validity, standardisation and norms; Areas of psychological testing, Computer based psychological testing; Applications of psychological testing; Sampling and sampling techniques; Qualitative and quantitative research; Methods of data collection and data analysis in qualitative research; Ethics in research; Statistics in psychology; levels of measurement, descriptive and inferential statistics, measures of central tendency and measures of variability; Correlation and Regression; Normal distribution and normal probability curve; Parametric and nonparametric statistics and their techniques.

Subject Specific (50%)

Eastern and Western Perspectives in Psychology; Historical development of Psychology in India; Indian Psychology; Human cognition and mental processes, Theories and assessment of Personality, Intelligence and Creativity; Motivation and Emotions, Stress and Stress Management, Coping and Coping styles and Strategies; Nature and Scope of Social Psychology, Social Cognition, Social Influence, Attitude, Prosocial behaviour and Altruism, Group dynamics, Aggression, Applied social psychology; Nature, principles and factors in human development, Theories of human development; Concepts related to disadvantage and deprivation, discrimination and marginalisation, Glass-ceiling and glass-floor effects, Theories of gender development; Conflict resolution; Factors influencing positive health, well-being and quality of life, Character strengths and virtues; Positive psychology interventions; Influence of media on human cognition and behaviour, Digital learning, Cyber bullying, Artificial intelligence.

Introduction to Industrial and Organisational Psychology; Human Resource Management and Human Resource Development; Recruitment and Selection; Training and Training Methods; Performance Appraisal; Leadership; Managing Diversity; Accidents and Industrial safety; Workplace behaviour and ethical issues; Workplace violence and harassment; Managing

conflict; Work motivation; Personality and Attitude in the context of organization; Job Satisfaction; Team work and team building; Organisational Behaviour and Organisational development, Organisational Change, Organisational culture and climate; Management by Objectives; Organisational Citizenship Behaviour; Corporate Social Responsibility, Employee counselling.

Introduction to Counselling; Theories of Counselling; Career counselling and guidance; Stages of counselling and counselling relationship; Assessment in Counselling; Counselling Skills and Techniques; Counselling with regard to various developmental stages; Counselling for Special Population; Counselling in diverse settings; Multicultural counselling; Expressive Therapies; Group and Family counselling; Contemporary trends in Counselling; Ethics in Counselling.

Paradigms and perspectives of psychopathology; Classification of mental disorders (DSM 5 and ICD 10); Personality disorders; Schizophrenia; Mood disorders; Feeding and Eating Disorders; Anxiety Disorders; Obsessive Compulsive and Related Disorders, Dissociative Disorders and Somatic Symptom Disorders; Substance use disorders; Sexuality Disorders and Gender Dysphoria, Stress, Trauma and Psychopathology; Developmental disorders in Childhood, Emotional and Behavioural disorders in Childhood, Diagnosis and tools for diagnosis of mental disorders; Psychoanalysis, Psychotherapies, Behaviour therapy, Humanistic and Existential therapy, Person centered therapy, Gestalt therapy, Cognitive therapy, Cognitive Behaviour therapy; Rational Emotive Behaviour Therapy, Solution focused therapy, Narrative therapy; Indigenous therapies; Group and Family therapies; Ethical issues in psychotherapy.

7. Ph. D in Journalism and Mass Communication

Entrance Exam Syllabus for PhD in Journalism and Mass Communication

1. Media and Society - functions, role, access and interaction. Contemporary developments in the media as an institution.
2. Concepts and models of various communication settings : Communication: Concept & Process; Models of Communication; Theories of Mass Communication
3. Different Schools of thoughts - related communication discipline : Media Content: Information, Education & Entertainment; Functions of Media; Impact of Media; and Media Economics and Finance.
4. Mass Audience; Access to Media; Mass Media Policies. Health & Education; Gender and Media; Media and Environment; Media & Human Rights.
5. Mass Communication and Culture; New Media, Networked Society – New Theory; Media Economics, Ownership, Control and Governance; The Production of Media Content; Media Content: Issues, Concepts and Method of Analysis;
6. Media and Information Literacy; MIL Competencies; Theoretical approaches of MIL, Interplay between MIL and Sustainable Development Goals.
7. The Behaviorist and Cognitive Orientations: The Learning Theories. The Yale Communication Research Studies. Persuasion and Attitude. Social Judgement Theory (Sherif et al.) Theory of Reasoned Action (Fishbein & Ajzen). The Cognitive Theories: The Balance, Dissonance, Congruity and Consistency theories and their applications to communication research.
8. Media and communication role in Open Learning
9. Critical Orientations: The Feminist Theories – The Culture Studies Theories.
10. Children and Media Violence: Social learning Theory/Social Cognition (Bandura); Disinhibition and Cue Theory (Berkowitz); and Arousal Theory / Excitation Transfer (Tannenbaum and Zillman).
11. “Middle Range” Theories (Selections): Uses and Gratifications; Agenda Setting by the Media; Cultivation of Perceptions of Reality (George Gerber); Limited and Selective Influences Theory.

12. Overview of communication research paradigms: philosophical assumptions of positivism, interpretivism, critical paradigms. What is scientific? Logic of scientific reasoning: Terms, propositions, arguments; deductive and inductive reasoning in research
13. Research design: Quantitative Variables: Types of variables; unit of analysis; exploratory, explanatory and predictive research, Measurement: conceptual and operational definitions; levels of measurement: nominal, ordinal, interval, ratio; basic understanding of reliability and validity. Sampling: why sample? Samples and population of interest; sampling design: probability and non-probability sampling; factors affecting choice of sampling design; sample size and determining sample size; stages of quantitative research
14. Data collection methods: Quantitative Experimentation: Logic of experimentation: testing causal relationships; random assignment; internal and external validity; sampling in experiments; experimental designs; field experiments. Survey research: General features of survey design; strengths and limitations; survey research designs: cross-sectional and longitudinal. Questionnaire construction: Steps leading to construction of questionnaire; content and format; leading and loaded questions; pre-testing questionnaires; tabulating data.
15. Data analysis: Quantitative. Introduction to statistics, Measures of central tendency: Mean, median , mode; when to use them. Measures of dispersion: range, semi-quartile range, standard deviation. z-scores: location of scores and standardized distributions. Introduction to probability; Probability and samples: The distribution of sample means; Hypothesis testing procedure.

8. PhD in Theatre Arts

Syllabus for Entrance Exam for Ph.D in Theatre Arts

Research Methodology

1. Research and its meaning
2. Objectives of Research
3. Motivation in Research
4. Types of Research
5. Research and its approaches
6. Significance of Research
7. Research Methods Vs Methodology
8. Research and Scientific Methods
9. Research Process: Research Problem, Review of the literature, Hypothesis, research design, Data collection, Analysis, Interpretation, Report.
10. Tools and Techniques
11. Field Methods
12. Qualities of good research
13. Problems and issues in research
14. Research Ethics

Theatre Arts

1. History and origins of Western and Indian Theatre /drama
2. Elements of Theatre and Drama (Western and Indian)
3. Bharata's Natyasastra and Aristotle Poetics.
4. Origin and development of Traditional Theatre and Folk theatrical Forms of India
5. History and Development of Modern Western Drama and Theatre
6. History and development of Modern Indian Drama and Theatre
7. Makers of Modern Theatre (Indian and Western)
8. Major acting theories
 9. Technical Aspects of Theatre (design, direction, set design, costume design, lighting, stage craft, theatre music, Play production Process)
10. Theatre Aesthetics (Western and Indian)
11. Indigenous Theatre Practices (Indian context)
12. Theatre- in- education, Children theatre, creative drama, applied theatre, political theatre, street theatre.
13. Theatre management and Theatre festivals.
 14. Post modern theories of theatre (Theatre Semiotics, Feminist Theatre, Intercultural Theatre, Phenomenology, Historiography, Post-Dramatic theories etc)
15. Theatre Pedagogies and Theatre Education (Universities and Institutions) PhD in Fine Arts

9. Ph.D in Fine Arts Syllabus for Entrance Exam

Research Methodology in Fine Arts

1. Research and its meaning
2. Objectives of Research
3. Motivation in Research
4. Types of Research
5. Research and its approaches
6. Significance of Research
7. Research Methods Vs Methodology
8. Research and Scientific Methods
9. Research Process: Research Problem, Review of the literature, Hypothesis, research design, Data collection, Analysis, Interpretation, Report.
10. Tools and Techniques
11. Field Methods
12. Qualities of good research
13. Problems and issues in research
14. Research Ethics

Indian Art History

Sculpture:

Formal and stylistic aspects of sculpture in Indus Valley, Mauryan, Sunga, Satvahana, Kushana (Mathura and Gandhara), Gupta (Buddhist, Brahmanical and Jain), Chalukya, Gurjara Pratihara, Pallava, Chola, Rashtrakuta, Hoysala, Kakatiya, Pala-Sena, Orissan, Solanki and Paramara periods.

Architecture:

Formal and stylistic aspects of architecture in Indus Valley of stupas (Bharhut, Sanchi, Amaravati, Sarnath) of cave temples, (Bhaja, Karle, Ajanta, Nasik, Lomas Rishi, Kanheri, etc.), Gupta (Udaygiri, Deogarh, Nachna, etc.) Chalukya (Badami, Aihole, Pattadakal, etc.), Pallava (Mahabalipuram, Kanchipuram, etc.) Rashtrakuta (Ellora), GurjaraPratihara, Saindhava – Maitraka, Chandela (Khajuraho), Orissa (Bhubaneswar, Konaraka), Chola (Tanjore and GangaikondaCholapuram, Darasuram, etc.), Hoysala (Belur, Halibid, etc.) Paramara, Nayuka and Vijayanagar (HampiLepakshi). Islamic architecture; Sultanate and Mughal; Mandu, Delhi, Agra, Fatehpur Sikri.

Painting:

Formal and stylistic aspects of pre-historic, Ajanta, Bagh and later mural tradition. Manuscript painting (Eastern Indian and Western Indian), Sultanate (Mandu) Chourapanchaskika style and other pre-Mughal schools, Mughal (Akbar to Shahjahan), Rajasthani (Mewar, Bundi, Kotah, Bikaner, Jaipur, Kishangarh, etc.) Malwa, Pahari (Basholi, Guler, Kangra) and Deccani (Ahmednagar, Bijapur and Golkonda) schools.

Modern Indian Art:

Company School, Bazar Painting, British Art Schools, Kalighat Painting, Raja Ravi Verma and followers. Neo-Bengal School ('Revivalism' and early modernists): Abanindranath Tagore and disciples, Nandalal Bose, Benode Behari Mukherjee, Ramkinkar Baij, Rabindranath Tagore, Gaganendranath Tagore, Jamini Roy and others. Role of Santiniketan in art education. Academic/Professional sculptors and painters; Mahatre, Talim, D.P. Roy Choudhuri, Dhurandar. Heman Majumdar, Thakur Singh, etc. Early modernists: Amrita Shergil, Karmarkar. Gorge

Keyt. Art in 1940's and 50's : Bengal famine and artists (Somnath Hore, Chittaprasad, Zainul Abedin, Gobardhan Ash. Sudhir Khastgir), Progressive art movements in Calcutta, Madras, Bombay and Delhi. International Modernism and artists : F.N. Souza, Pradosh Dasgupta, K.C.S. Panikkar, B.C. Sanyal, Dinkar Kaushik, Nirode Majumdar, Paritosh Sen, M.F. Hussain, Akbar Padamsee, Ramkumar and others. Independent Artists : N.S. Bendre, K. K. Hebbar, Shankho Choudhuri, Krishan Reddy, Dhanraj Bhagat, Y. K. Shukla, Pilo Poochkhawala, V.S. Gaitonde, Santhanraj, Davierwala and other.

Art in 1960's and 70's Indigenist trends in painting, sculpture, mural and print-making; K. G. Subramanyam, K.C.S. Panikkar (Cholamandal artists village), Reddappa Naidu, S.B. Palsikar, Janaki Ram, Meera Mukherjee, Jyoti Bhatt, J. Swaminathan, Neo- Tantric art, etc.

Figurative-Narrative trend since 1960's Bikash Bhattacharjee, Ganesh Pyne. A. Ramachandran, R.B. Bhaskaran, Lakshma Goud, Jogan Choudhuri, Bhupen Khakhar, Anjole Ela Menon, Arpita Singh, Gogi Saroj Pal, Arpana Kaur, Vivan Sundaram and others.

Trend of Abstraction since 1960's : raghav Kaneria, Jairam Patel, P. Barwe, Ram kumar, L.

Munnuswamy, P.V. Kolte, Jagmohan Chopra, Balbir Singh Katt, Nagji Patel.

Development of Installation, Multimedia, Performative, Happening Art : nalini Malani, Ved Nayar, Vivan Sundaram and others.

Tribal, Folk and Popular Art (Including Design and Functional Art)

African, Oceanic, North-West Coast American, Mexican, Indian, South- East Asian Art.

Aesthetics and Art Critical History:

General principles of Indian art, art and beauty, principles of image making (iconometry and other canons), six limbs of Indian painting (shadanga) and six Chinese canons of paintings, theories of Rasa, Dhvani, Aankara, Auchitya and Riti, and their relevance in understanding art making and viewing. Interrelationship of visual and performing art. Classification of painting in Chitrastotra.

Concepts of Kshyavridhi. Guna-dosha, Sadrishya, Vartana, Nimnonata, etc. Visible and invisible aspects of art (Drishyam/Adrishyam), Rekha (Line) and Linear rhythm (Chanda)

compositional aspects of art, perspective, form and content. Textual sources

(Vishnudharmottara, Brihatasmhita and other Silpasastra texts. Kashmiri aestheticians.

Distinctions and overlap between the scope of Art History, Art Criticism, and Aesthetic theories.

Inter relationship between Art History, Anthropology, Archaeology, Cultural History and Philology,

Development of Art History as a discipline. Connoisseurship and catalogue raisonné.

Development of formalism (Wolfflin, Reigl, Roger Fry, Greenberg), Iconology (Gombrich and Panofsky), Visual perception (Rudolf Arnheim) and New Art History (Bryson, Hal Foster).

Ananda coomaraswamy and Stella Kramrisch and their relevance in the India Art Historical Studies.

Western approaches to art and aesthetics : Plato, Aristotle, Alberti, Vasari, Bellori, Reynolds, Diderot, Wincklemann, Croce, Tolstoy, etc. Writing by artists and manifestos of modern art movements.

Theory of Avant-Garde. Implication of theories of Semiotics, Structuralism, Post- structuralism, Post-modernism and Feminism on Art thinking and writing.

Fundamental and Principles of Painting:

Knowledge of principal elements, perspective values, fundamentals of paintings. Visual principles, Form, space, illusion, image. Chronology of the development of ideas. Visual reality, conceptual reality. Tradition and the gradual development of the art of combining the elements of ideas of different visual arts specialization.

Media and material and their use, sketching and drawing. Application of materials, oil painting- All a Prima and old master process, glazing and scumbling, priming of canvas, different types of oil, brushing etc. Tempera and Gouache and their uses in painting in both traditional and non- traditional art. Wash method on paper and silk, Acrylic, pastel, mixed media, water colour mural and mural techniques- Fresco secco and Buono fresco, Ajanta and different modern media relief and mixed

media in mural.

Collage, Encaustic Wax Supports in Painting (Canvas, paper, wood, silk, etc.)

Types of paintings, open air paintings, portrait paintings, study of head and full length figures, male and female. Landscape paintings, patronized art, paintings under different art movements, still life, thematic, abstract , etc.

Principles of compositions, reflection of artists personal views, development of concept. Process of creative paintings. Expression of ideas under some aesthetical and philosophical views.

Artistic expression during different social and structural changes. Art and Changes.

Application of techniques, colours and colour theory and the application of colour theory in art activities. Colour harmony, traditional application of colour and the application of colour with reasoning.

Colour preparation, texture, technical aspect of pigment.

Sculpture:

Detail knowledge of Principle element of Sculpture including Historical backgrounds, developments and the modern approach about all Sculpture methods.

- ☐ Stone Carving
- ☐ wood Carving
- ☐ Metal Casting
- ☐ Terracotta (Low relief/ High relief)
- ☐ Other- Clay Making Process, Plaster of Paris, Metal Fabrication like Welding, Metal Scrap, waste Material, Installation.
- ☐ History of Sculpture– Indian and Western: Manifestation and invention of different Sculpture technique Artist and their Contributions.

Graphics (Print making):

Detail knowledge of Principle element of Printmaking including Historical backgrounds, developments and the modern approach about all Printmaking methods.

- ☐ Relief method
- ☐ Intaglio Method
- ☐ Planography Method
- ☐ Serigraphy Method
- ☐ Other- Computer Graphics, Paper making, Dimensional Print like Blind print, Embossing, colography, Unique Print / Mono prints.
- ☐ Concept Study of Tools, Techniques, Processing and developing Block preparation & Printing
- ☐ History of Printmaking – Asia and Europe: Manifestation and invention of different Print making Methods Artist and their Contributions.
- ☐ History of Indian Printmaking – Manifestation, invention and development of different Printmaking Methods Artist and their Contributions.

Applied Arts:

- ☐ Introduction to Advertising, History of Advertising, truth and fundamentals of Advertising, ethics in Advertising. Media of Advertising.
- ☐ Technical terms of Advertising.
- ☐ Principles of Design. Elements of design, its role and effect in Advertising layouts.
- ☐ Typography and its basic rules. Calligraphy and its History.
- ☐ Illustration, History and famous Illustrator.
- ☐ Printing: its history and development , introduction of main printing processes such as Letterpress, Lithography, Gravure, Offset, Silk-screen, latest techniques of printings.
- ☐ Trends and developments of Modern Advertising, Types of Advertising, Justification of

advertising for expenditure and growth.

- Advertising for Nation-Building and Social welfare. Concept Planning and Creative Research.
- Advertising Agency, its structure and different departments. Function of different departments. Role of art studio in the Agency. Famous Ad. Agency and Ad, gurus.
- Different Media of Advertising – Print Media, Indoor, outdoor, Direct mail, POP, Social Media, TV, Radio, Internet, electronic media, new media of advertising etc.
- Campaign Planning, appeal : Use of appeal in campaign planning, objectives, continuity. Different kinds of Campaigns : Social, Product, Movie, Event, Educational, Political etc.
- Corporate Image, and Corporate Identity.
- Types of copy and Design approach of campaigning.
- Communication and its type. Barriers in good communication.
- Different functions of Advertising Business. Research and Motivational Research – present and future action.
- Future of Advertising – Career options in Internet Advertising, web designing and Animation.
- Introduction to marketing. 4P's of marketing.
- Market Research & Analysis.
- Importance of Marketing and Consumer Behaviour in Advertising.
- Advertising Effectiveness.
- Testing of Advertising.

10. PhD in Dance

The syllabus for entrance test for PhD Performing Arts-

Dance is as follows:

1. Paper- 1: Research Methodology

I. Introduction to Research- Its definition, role of research in dance, process, types, significance

II. Research approaches in dance

III. Formulation of research problem

IV. Research design

V. Sources of Data

VI. Data collection- primary and secondary data, methods of collection and techniques

VII. Analysis and Interpretation

VIII. Ethics in research

2. Paper- 2: Dance

I. Aesthetics: Rasasutra of Bharata, Bhava and its constituents, Abhinaya- Its types

II. Historical study: References from literature, paintings, sculptures

III. Study of Treatises: Technical concepts and classification of dance, features, significance of dance, study of Abhinayadarpana, Nayaka-Nayika prakarana as in texts, study of Natyashastra, Dasarupaka, Sangeetha Rathnavali

IV. Indian classical and other dance forms including traditional dance theatre: History, development, Technique, costumes, Music, instruments, Gurus

V. Dance in Modern India: Role of revivalists, institutions, Works of modern and contemporary dancers/ choreographers

VI. World dances: History and development of Ballet, Emergence of Modern dance in the west, overview of dances from East Asia, South-east Asia.

11. PhD Commerce(PHDCOM)

Course1:Research Methodology

Theory of Research :**Meaning and Definition of Research, Types of Research, Research Approached(Scientific, Historical, Descriptive, Comparative, Institutional), Criteria of Good Research, Research and Business Decisions, Research Applications in Functional Areas of Business.**

1. **Research Process** :Problem Selection and Research Design-Selecting a Topic for Research Study ,Formulation of Hypothesis, Research Design (Concepts relating to Research Design, Major stops preparing a Research Design, Factors affecting Research Design.)

Technique of Collecting Qualitative Data (PRA-Participatory Rural Appraisal, RRA-Rapid Rural Appraisal Case Study), Tools of Collecting Qualitative Data (Social Mapping Resource Mapping, Wealth Ranking of the Households, Preference Ranking, Focus Group Discussion etc.),Formatting and Processing of Qualitative Data Sampling Techniques and Sample Design (Methods, Selection of Appropriate Methods and Sampling Criteria),Sampling Tests (Ztest, Ttest, Ftest). Editing, Coding, Classification and Tabulation Diagrammatic and Graphic Presentation

2. Analysis of Data (Statistical Application in Research)

Statistics and Business Research Probability Theory Probability Distributions Percentages and Ratios Measures of Central Tendency Measures of Variability Correlation and Regression Measurement of Trend Association of Attributes Construction of Indices Hypothesis Testing Scaling Technique

RCO – 002: SPECIALIZATION COURSE (In the selected area of research interest) FOR Ph.D

Area – 1: Accounting & Taxation ACCOUNTING

Contents

1. Accounting: Information for Decision Making

Accounting Information: A Means to an End User's Perspective-Types of Accounting Information

Accounting Information Forms: - Determining Information Needs - The Cost of Producing

Accounting Information, Users of Accounting Information - Objectives of External Financial Reporting – Characteristic of Externally Reported Information-Characteristics and Objectives of Management Accounting Information

Integrity of Accounting Information :Institutional Features-Professional Organizations- Competence, Judgment, and Ethical Behavior

Accounting Systems: Basic Functions of an Accounting System-Designing and Installation Accounting Systems.

Careers in Accounting:Public Accounting- Management Accounting-Governmental Accounting -

2. Presentation and Reporting of Accounting Information

Reporting the Results of Operations: Developing Predictive Information - Reporting Irregular Items Continuing Operations – Discontinued Operations, Extraordinary Items-Changes in Accounting Principles
-Earnings per Share (EPS)-Basis and Diluted Earnings per Share

3. Statement of Cash Flows

Statement of Cash Flows: Purpose of the statement -Example of a Statement of Cash Flows- Classification of Cash Flows-The Approach to Preparing a Statement of Cash Flows

Managing Cash Flows: Budgeting (The Primary Cash Management Tool-What Priority Should Managers give to Increasing Net Cash Flows? –Some Strategies for Permanent Improvements in Cash Flow

4. Financial Statement Analysis

Techniques of financial statement Analysis: Common Size Financial Statements- Financial Statement Analysis Using Common Ratios-Profitability Ratios, Efficiency Ratios, and Solvency Ratios

Tools of Analysis: Trend Percentages, Component Percentages, Ratios, Standards of Comparison, Quality of Earnings, Quality of Assets, and the Relative Amount of Debt

Measures of Liquidity and Credit Risk: A classified Balance Sheet - Working Capital – Current Ratio, Quick Ratio, Debt Ratio-Evaluating Financial Ratios– Liquidity, Credit Risk, and the Law

5. Accounting Standards

Introduction – Accounting Standards in India – Importance of the Accounting Standards – Disclosure of Accounting Policies – Regulations for Valuation of Inventories – Rules for Cash Flow Statement – Norms for Events after Balance Sheet Date – Rules for Provisions and Contingencies – Norms for Net Income and Changes in Accounting Policies– Regulations for Depreciation Accounting–Norms for Revenue Recognition – Accounting for Fixed Assets – Accounting for Taxes on Income – Accounting for Intangible Assets – Norms for Consolidated Financial Statements – Need for Notes to Accounts – Other Accounting Standards – Computerization of Accounts – Indian Companies Providing their Accounts as per US GAAP and IFRS

6. Global Business and Accounting

Environmental Forces Shaping Globalization- Political and Legal Systems, Economic Systems, Culture, Technology and Infrastructure Harmonization of Financial Reporting Standards

Foreign Currencies and Exchange Rates: Exchange Rates - Accounting for Transactions with

7. Management Accounting

An overview – Concepts and uses - Management Accounting Decision Making Authority – Management Accounting's Role in Decision Making - Management Accounting's Role in Performance Evaluation and Rewards

8. Costing System and Analysis

Activity Based Costing System: Introduction - Traditional manufacturing Costing System - Activity Based Costing (ABC) and Activity Based Management (ABM) System - Cost of Resource Capacity - ABC for Marketing, Selling and Distribution Expenses-ABC for Service Companies

Cost variance Analysis: Introduction – Material Variances – Labour Variances – Overhead Variances –Standard Cost Accounting

Revenue and Profit Variance Analysis: Introduction - Sales Variances - Profit Variances - Actual Profit and Budgeted: Reconciliation –Variance Reporting-Disposition of Variances

9. Responsibility Accounting

Introduction–Meaning and Objectives–Types of Responsibility Centres

Reference text books:

1. Williams, Haka, Bettner (2005) Financial & Managerial Accounting, the basis for business decisions, Tata McGraw- Hill, New Delhi.
2. M.Y.Khan,P.K.Jain(2007)ManagementAccounting,Text,ProblemsandCases,TheMcGraw-Hill,NewDelhi.
3. Asish K .Bhattacharyya(2006)Financial Accounting for Business Managers, Printice-Hall of India Pvt. Ltd., NewDelhi.
4. Robert N Anthony, David F. Hawkins, Kenneth A Merchant (2007) Accounting Text and Cases, TataMcGraw-Hill,NewDelhi.
5. N.Ramachandran,RamKumarKakani(2008),FinancialAccountingforManagement,TataMcGraw-Hill,NewDelhi.
6. ShashiK.Gupta(2002),ContemporaryIssuesinAccounting,KalyaniPublishers,NewDelhi.
7. Aggarwal,M.P.(1981),AnalysisofFinancialStatements,NationalPublishingHouse,NewDelhi.
8. S.N.Maheshwari(2004),Management Accounting and Financial Control, Sultan Chand and Sons,NewDelhi.
9. S.N.Maheshwari,
S.K.Maheshwari(2006),CorporateAccounting,VikasPublishingHousePvt.Ltd.NewDelhi.

Taxation

Direct Taxation–Law and Practice

1. **General Frame work of Direct Taxation in India:** Different direct tax laws and their inter-relationship; Importance of Income Tax Act and Annual Finance Bill Relevant Constitutional

provisions; harmonization of tax regime.

2. **Tax Planning:** Concept of tax planning; Tax planning with reference to setting up a new business; locational aspects; nature of business; tax holiday, etc. - Tax planning with regard to specific management decisions such as mergers and takeovers; location of undertaking; introduction of voluntary retirement; tax planning with reference to financial management decisions such as borrowing or investment decision; reorganization or restructuring of capital decisions - Tax planning with respect to corporate reorganization; tax planning with reference to employees' remuneration - Tax Planning vis-à-vis important provisions of wealth-tax including court rulings and legislative amendments.
3. **Tax Management:** Return and procedure for assessment; special procedure for assessment of search cases, e-commerce transactions, liability in special cases; collection and recovery of tax; refunds, appeals and revisions ;penalties imposable ,offences and prosecution.

Indirect Taxation–Law and Practice

4. **Indirect Taxes:** Special features of indirect tax levies—all pervasive nature, contribution to Government revenues; constitutional provisions authorizing the levy and collection of duties of central excise, customs, service tax, central sales tax and VAT.
5. **Central Excise:** Basis of chargeability of duties of central excise –goods, manufacture, classification and valuation of excisable goods, assessment procedure, exemption, payment, recovery and refunds of duties. Clearance of excisable goods; Central Excise Bonds; maintenance of accounts and records and filing of returns. CENVAT; Duties payable by small scale units. Set-off of duties –concept, meaning and scheme; Central Excise Concessions on exports; search, seizure and investigation; offences and penalty.
6. **Custom:** Levy of and exemption from, customs duties – specific issues and case studies; assessment and payment duties; recovery and refund of customs duties; drawback of duties; Confiscation of goods and conveyances and imposition of penalties; search, seizure and arrest, offence and prosecution provisions -Adjudication, Appeal and Revision; Settlement of Cases.
7. **Service Tax:** Introduction; Genesis of service tax in India; Constitutional Provisions; Definition of service; Education Cess and Secondary and Higher Education Cess
8. **Tax Planning and Management:** Tax Planning, Tax Management, Tax Avoidance and Tax Evasion

Reference text books:

1. Dr.VinodKumarSinghania&Dr.MonicaSinghania,(2014),DirectTaxesPlanningandManagement,Taxmann,NewDelhi
2. Dr.Vinod Kumar Singhania & Dr.Monica Singhania, (2014), Income Tax including Central Sales Tax,Taxmann, NewDelhi
3. R.K.Jain,(2014),Income Tax Planning& Management, Sahitya Bhawan, Agra
4. Dr.P.K.Jain & R.KTyagi,(2014),IncomeTax law& accounts, Sanjay Sahitya Bhawan, Agra
5. R.K.Jain (2014) Excise Customs and Service Tax Case References, Jain Book Depot, New Delhi.

Area2–InternationalBusiness

1. **Basics of International Business Environment**–Social, Cultural, Economic, Political,

Demographic, Ecological and Legal Environment.

2. **Balance of Payments** – Concept, Balance of Payments Accounting, Deficit and Surplus, Factors affecting Balance of Payments and Equilibrium and Disequilibrium of Balance of Payments. India's Balance of Payments.
3. **Government Influence on Trade** – Rationale for government intervention, Tariff and Non tariff barriers. Impact of tariff and non tariff barriers on international trade.
4. **Cross Cultural Management**–Hofstede and other studies related to Cross Cultural Management
5. **Introduction to Globalization**–Concept, Major forces, Effects of Globalization on the world economy and developing countries, Globalization strategies of Indian Companies, Cross border Mergers and Acquisitions
6. **International Investment**– Concept, Types of International Investment, FDI and Developing Countries, Determinants of FDI, Recent Trends in FDI flows, Trade Related Investment Measures, Multilateral Investment Agreements.
7. **Transnational Corporations**–Features of Transnational Corporations, Recent Trends in Transnational Corporations, Issues And Controversies Of Transnational Corporations. TNCs and Developing Countries.
8. **Technology Transfer** – Rationale of Transfer of Technology, Recent Trends and Current Issues, Non Equity Forms of Technology Transfer, Intellectual Property Rights, India and Transfer of Technology –strategies and challenges.
9. **World Trade**–Recent Trends –composition and direction, Problems of Developing Countries.
10. **International Trade in Services**–Role of Trade in Services in Economic Development, Composition and Direction of International Trade in Services, Challenges of International Trade in Services.
11. **Multilateral Trading System** – Functions and Structure of WTO, Multilateral Trade Agreement and Plurilateral Trade Agreement, India and WTO. Recent issues related to Multilateral Agreements. Impact of Multilateral Trading System on World Trade.
12. **Regional Economic Groupings** – Forms of Regional Groupings, Rationale and Impact of Regional Economic Groupings, Major Regional Economic Groupings - European Union (EU), North American Free Trade Agreement(NAFTA), Association of South etc. East Asian Nations (ASEAN), South Asian Association for Regional Corporation(SAARC)
13. **International Product Planning** – Product Decision, International Product Life Cycle, New Product Development. Product diffusion.
14. **International Branding and Packaging** – Objectives and Advantages, Brand Familiarity Levels, Branding Strategies , Local Brand Vs Global Brand, Impact of Brands on Buying Behaviour, Scope for Indian Brands, Functions and Importance of Packaging, Factors Influencing Packaging Decision, Special Considerations in International Marketing.

- 15. International Pricing** – Objectives and factors affecting Pricing Decisions, Pricing Methods and Practices in International Marketing, Transfer Pricing, Counter Trade and Pricing Issues.
- 16. International Distribution**–International Channel System, Types of Intermediaries, Factors affecting Channel Choice, Selecting Overseas Agents.
- 17. International Marketing Communication** – Promotion Mix, Objectives and Role of InternationalMarketingCommunication,KeyIssuesinInternationalMarketingCommunication,MajorMarketingPromotionTools.
- 18. International Advertising** – Rationale for International Advertising, Adaptation Vs Standardization, Advertising Appeals and Product Characteristics, Impact of Advertising on buying decisions, Global Media Decisions, Selecting Advertising Agencies, Advertising Regulations, Sales Promotion Tools.
- 19. International Retailing** – International Store Operations and Supply Chain Management of LeadingInternationalRetailers.InternationalRetailFormats,InternationalRetailMarketingStrategy.
- 20. Emerging Trends and Issues in International Marketing** – E-Marketing, Green Marketing, Digital Marketing, Multi level Marketing (MLM),Web-based Marketing, and Network Marketing etc.

Further Readings

- WTO Report
- UNCTAD Report
- WorldInvestment Report
- World Economic Survey, etc.

Area3 –Banking and Finance

- 1. Commercial Banks:** Overview of Commercial Banking in India; Role and Functions of Commercial Banks; Indian Banking in Pre, Nationalization and Post, nationalization Phases.
- 2. Banking Sectoral Reforms:** Banking Sector Reforms and their Implications on Indian Banking Sector; Changing Role of Indian Banks; Reforms and Restructuring of Banks; Management of Private Sector Banks and Public Sector Banks; Management of Banks in Rural Areas.
- 3. Basic Banking Services:** Opening of accounts for companies, trusts, societies, government and publicbodies; Importance of AML.
- 4. Credit concepts:** Principles of lending; Various credit Products/ Facilities - working capital and term loans; Credit Appraisal Techniques; Approaches to lending; Credit Management, credit monitoring ,NPA Management; Credit Risk Analysis Framework.

5. **Documentation:** Different types of documents; Documentation Procedures; Stamping of documents Securities; Types of collaterals and their characteristics; Priority Sector Lending - Sectors, Targets and Issues/Problems.
6. **Recent Developments:** Agriculture/SMEs/SHGs/SSI/Tiny Sector; Financing New Products & Services: Factoring, Securitization, bancassurance, Mutual Funds, Merchant Banking, Hire Purchase, Securitization, Venture Capital, Leasing and Depository, Credit Cards/Home Loans/Personal Loans/Consumer Loans; IT Application in Banking.
7. **Credit Rating in India:** Concept and reasons of credit rating; Credit rating institutions in India, Limitation of Credit Rating.
8. **Reforms in Banking and Finance:** Reports of the committees; Chakravarty committee, Narsimham Committee I & II : FDI In Banking Sector.
9. **International Banking:** An Overview; Rationale and Scope of International Banking Regulation; Capital Adequacy, loan loss provisioning and other Regulatory Controls.
10. **International Financial System:** An overview; Foreign Exchange Markets; Exchange rate determination; International parity theory and Fisher effect; Foreign Exchange Risk Management.
11. **Financial Institutions:** Role of FDI, NBFCs and other International Financial Institutions
12. **Financial Markets:** Structure; Institutions and Operation Mechanism; Money Market in India; Importance; Feature and Instruments; Capital Market in India, New Issues Market and Secondary Market (Stock Exchanges); salient features and operation, changing scenario of Indian Stock Market.
13. **Valuation of Securities:** Equity shares and Bonds valuation models; CAPM, Arbitrarily pricing theory.
14. **Corporate Valuation:** Approaches to Corporate Valuation; Restructuring; merger, acquisition and disinvestment leveraged buy-outs.

References

Chandra, Prasanna, Financial Management Theory and Practice, Tata McGraw-Hill Publishing Company Ltd., New Delhi, 2007

Shapiro Alan C., Multinational Financial Management, Prentice Hall of India Ltd., New Delhi

Khan, M.Y. and Jain, P.K., Financial Management Text, Cases and Problems, Tata McGraw-Hill Publishing Company Ltd., New Delhi, 2007

Kishore, Ravi M.: Financial Management, Tax, Delhi.

Van Horne, James C., Financial Management and Policy, Prentice Hall of India Ltd., New Delhi

Damodaran on Valuation: Security Analysis for Investment and Corporate Finance (Wiley Finance)

Neelam C Gulati (2011) Banking and Insurance: Principles & Practices, 3rd edition, Excel Books, Daryaganj

New Delhi

Gomez Clifford (2011) Banking and Finance: Theory, Law and Practice, 3rd edition, PHI, Daryaganj New Delhi

Indian Institute of Banking & Finance (2012): Principles and Practices of Banking, 2nd edition, McMillan, Daryaganj New Delhi.

Indian Institute of Banking & Finance (2012): Legal and Regulatory Aspect of Banking 2nd edition, McMillan, Daryaganj New Delhi.

NK Sinha (2009): Money Banking and Finance, 5th edition, BSC Publisher Co, Daryaganj, New Delhi.

Area 4: MARKETING MANAGEMENT

1. Defining Marketing for the 21st century The new marketing realities: Marketing in 21st century, Markets: Consumer and Organisational markets, Strategic planning & the marketing environment, Current issues in marketing, Marketing research, Buyer behaviour, Segmentation, targeting and positioning, Value capture, Value creation, Value delivery, Value communication, Major Societal Forces, New Consumer Capabilities, New Company Capabilities, Integrated Marketing, Internal Marketing, Performance Marketing, Connecting with Customers, Shaping the Market Offerings.

The Demographic Environment and its implication in marketing management: Economic Environment, Social- Cultural Environment, Natural Environment, Technological Environment, Political-Legal Environment.

Creating Customer Value: Satisfaction and Loyalty, Customer Perceived Value (CPV), Total Customer Satisfaction, Monitoring Satisfaction, Maximizing Customer Lifetime Value (CLV), Cultivating Customer Relationships.

Analyzing Consumer Markets: What Influences Consumer Behaviour? Cultural Factors Social Factors, Personal Factors, Key Psychological Processes.

Analyzing Business Markets: Organizational Buying, The Business Market Versus the Consumer Market, Delivering Superior Customer Value, Managing Business-to-Business Customer Relationships, Business Relationships: Risks and Opportunism, Segment Marketing, Niche Marketing, Local Marketing, Balancing Customer and Competitor Orientations. Creating Brand Equity, Building brand equity, Measuring brand equity, Devising a branding strategy, crafting brand positioning.

2. Marketing Decisions

Product Decisions: Setting Product Strategy, Differentiation, Product and brand relationship, The Product Hierarchy, Product Systems and Mixes, Product-Line Analysis Product-Line Length, Packaging, Labeling, Warranties, and Guarantees.

Designing and Managing Services: The Nature of Services, Categories of Service Mix Distinctive Characteristics of Services, Service Experience, Service Innovation, Service

Delivery, Service Quality, service recovery and its implications on business. Managing Service Brands, Developing Brand Strategies for Services, Developing Service Offers for Rural Areas, Managing Product-Support Services, Identifying and Satisfying Customer Needs, Post sale Service Strategy.

Pricing Decisions: Developing Pricing Strategies and Programs, Consumer Psychology and Pricing, Setting the Price, Adapting the Price, Geographical Pricing (Cash, Countertrade, Barter), Price Discounts and Allowances, Promotional Pricing, Differentiated Pricing, Pricing for Rural Markets, Initiating and Responding to Price Changes, Responding to Competitors's Price Changes

Distribution Decisions(logistics decisions): Designing and Managing Integrated Marketing Channel, Marketing Channels and Value Networks, Channel Integration and Systems, Vertical Marketing Systems, The Importance of Channel Stewards, Horizontal Marketing Systems, Integrating Multichannel Marketing Systems, Conflict, Cooperation, and Competition, Channel Conflict and Competition, Managing Channel Conflict, Dilution and Cannibalization, Legal and Ethical Issues in Channel Relations, Managing Retailing, Wholesaling, and Logistics.

Promotion Decisions: Communicating Value, Designing and Managing Integrated Marketing Communications, The Changing Marketing Communication Environment, Marketing Communications, Brand Equity, and Sales, The Communications Process Models, Developing Effective Communications, Celebrity Endorsements as a Strategy, Selecting the Communications Channels, Establishing the Total Marketing Communications Budget, Deciding on the Marketing Communications Mix, Managing the Integrated Marketing Communications Process, Implementing IMC, Managing Mass Communications: Advertising, Sales Promotions, Events and Experiences, and Public Relations, Developing and Managing an Advertising Program, Communicating to the Rural Audience, Deciding on Media and Measuring

Effectiveness, Sales Promotion in Indian market, Events and Experiences, Public Relations, Managing Personal Communications: Direct and Interactive Marketing, Word of Mouth, and Personal Selling, Direct Marketing, Public and Ethical Issues in Direct Marketing, Interactive Marketing, Placing Ads and Promotions Online, Word of Mouth, Buzz and Viral Marketing, Creating successful long term growth.

3. Marketing research

Introduction to Marketing Research, Qualitative and quantitative research methods, Sampling methods, Questionnaire design, reliability and validity. Online survey method, Data preparation and data presentation (graphing), Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA), Cluster Analysis, Factor analysis, Presenting research information

4. Emerging Trends in marketing: Rural Marketing, Green marketing, Experiential marketing, Digital Marketing, e-business, Online marketing, Online retailing, Neuroscience and consumer, Sports Marketing, Media marketing and advertising, Brand Management, Innovation and marketing

Reference Books

- Marketing Management by Arum Kumar and N Meenakshi
- The Rural Marketing Book by Kashyap Raut
- Marketing Management as South Asian Perspective by Philip Kotler, Kevin Lane Keller, Abraham Kohli and Mithileshwar Jha, Pearson Prentice Hall, 2009
- Research Methodology, Concepts and Cases by Deepak Chawla and Neena Sondhi, Vikas Publishing house private limited
- Marketing management Ranjan Saxena, Tata McGraw Hill Publishing Company limited
- Marketing management, Cases and Concepts, Nikhilesh Dholakia, Rakesh Khurana, Labdhi Bhandari, Abhinandan K Jain, Macmillan India

Area 5: Entrepreneurship and Small Business Management

1. Entrepreneurship and economic development

Entrepreneurship theory and literature: Entrepreneurship in India and abroad, Entrepreneurial motivation (socio-economic factors in entrepreneurship development, basic skills in entrepreneurship), Entrepreneurial environment, Entrepreneurship development Programmes, Entrepreneurial functions, Analysis of barriers in entrepreneurship development, Analysis of success factors of entrepreneurship development.

Entrepreneurship's Importance: Economic impact of entrepreneurial firms, Entrepreneurial Firms' impact on society, Entrepreneurial Firms' impact on larger firms, Entrepreneurial Firms' impact on overall economic development of a nation Entrepreneurship development.

2. Creativity and Innovation in business

Encouraging creativity at the firm level, protecting ideas from being lost or stolen, IPR, Creation of effective innovation, Market dynamics and new technology, Diffusion and adoption of innovations, Marketing and sales of technology based products and services.

3. Enterprise creation

Screening of ideas, opportunity identification and selection, moving from an idea to an entrepreneurial firm, New enterprise creation: Conceptual and analytical tools to understand, analyze and manage critical aspects of new enterprise, Business plan preparation and Analysis, feasibility analysis of business (product/service feasibility, industry/market feasibility, organizational feasibility and Financial feasibility analysis, Industry and competitor analysis), Business crisis, Family business management, Small and medium enterprises (threats and opportunities),

Developing an effective Business models: The importance of business models, How business models emerge, potential fatal flaws of business models.

4. Enterprise Management Small and medium enterprise (managing and growing entrepreneurial firm): Essentials of management principles, its application on enterprise management, planning, importance and application of planning in an organisation, strategic planning and its application.

Human resource Management: recruitment, selection and induction of key employees, training and development, performance appraisals, application of exit interviews etc., Board of

directors, Professional advisers, lenders and investors, other professionals.

Organisation Behaviour: Motivation and behavior, designing Motivating jobs, perception, personality, Stress and behavior, Group behavior, Intergroup relations, conflict and its impact on organization, Leadership in organisation, followership, transaction analysis, analysis and application of leadership styles, Organisation structure and design, Organisational change and development, organizational culture and climate.

Controlling (PERT, CPM and other emerging methods to establish control in an organization.

Managing human resources and organization development and dynamics, Personnel and Industrial relations, Sources of capital and capitalization process, Venture capitals, Angel investors etc, Intrapreneurship.

5. Microbusiness development

What are micro businesses, Role of Government in micro business development, Importance of micro businesses in an economy, Microfinance, Self help groups, Direct funding from financial institutions.

6. New Age entrepreneurship

Agri- entrepreneurship, Edu-preneurship (education/academic entrepreneurship), Technopreneurs (nanotechnology, biotechnology)

7. Social Entrepreneurship

Social entrepreneurship, social entrepreneurs as change agents, financial sustainability Social entrepreneurship in India and abroad

8. Women Entrepreneurship

State of women Entrepreneurship in India. Barrier to women Entrepreneurship development.

9. Business ethics

Corporate Social responsibility Corporate governance

10. Succession Planning

Business growth and need of succession Planning in India. Its role and importance in expansion management.

Reference Books:

- Small Business Management and Entrepreneurship by David Stokes, Nicholas Wilson
- Think and Grow Rich by Napoleon Hill - book
- Entrepreneurship and small business management by Norman MSc or borough
- Entrepreneurial Development By Vasant Desai
- Entrepreneurship and entrepreneurial Development by M. Gangadhar Rao
- Organisational Behaviour By Jit S Chandan, Vikas publishing house Private Limited

12. PhD Management (PHDMGMT)

The question paper will have the following two parts:

- a. Research Methodology
- b. Management (Financial Management, Human Resource Management, Marketing Management, Operations Management and General Management)

Part I

Research Methodology

1. Foundations of Research: Meaning, Objectives, Motivation, Utility. Concept of theory, empiricism, deductive and inductive theory. Characteristics of scientific method–Understanding the language of research–Concept, Construct, Definition, Variable.

Research Process

2. Problem Identification & Formulation – Research Question – Investigation Question – Measurement Issues – Hypothesis – Qualities of a good Hypothesis–Null Hypothesis & Alternative Hypothesis. Hypothesis Testing–Logic & Importance
3. Research Design: Concept and Importance in Research – Features of a good research design – Exploratory Research Design – concept, types and uses, Descriptive Research Designs – concept, types and uses. Experimental Design: Concept of Independent & Dependent variables
4. Qualitative and Quantitative Research: Qualitative research – Quantitative research–Concept of measurement, causality, generalization, replication. Merging the two approaches.
5. Measurement: Concept of measurement–what is measured? Problems in measurement in research–Validity and Reliability. Levels of measurement–Nominal, Ordinal, Interval, Ratio.
6. Sampling: Concepts of Statistical Population, Sample, Sampling Frame, Sampling Error, Sample Size, Non Response. Characteristics of a good sample. Probability Sample – Simple Random Sample, Systematic Sample, Stratified Random Sample & Multi-stage sampling. Determining size of the sample – Practical considerations in sampling and sample size.
7. Data Analysis: Data Preparation–Univariate analysis (frequency tables, bar charts, pie charts, percentages), Bi-variate analysis – Cross tabulations and Chi-square test including testing hypothesis of association.
8. Interpretation of Data and Paper Writing – Layout of a Research Paper, Journals in Computer Science, Impact factor of Journals, When and where to publish ? Ethical issues related to publishing, Plagiarism and Self-Plagiarism.
9. Use of Encyclopedias, Research Guides, Hand book etc., Academic Databases for Computer Science Discipline.
10. Use of tools / techniques for Research: methods to search required information effectively, Reference Management Software like Zotero/ Mendeley, Software for paper formatting like LaTeX/ MSOffice, Software for detection of Plagiarism

Part2

Management (Financial Management, Human Resource Management, Marketing Management, Operations Management and General Management)

I

Managerial Economics– Demand Analysis Production Function Cost–Output Relations Market Structures Pricing Theories Advertising

Macro – Economics National Income Concepts Infrastructure – Management and Policy Business Environment Capital Budgeting

II

The concept and significance of organizational behaviour – Skills and Roles in an organisation – Classical, Neo – Classical and Modern Theories of Organisational Structure – Organisational Design – Understanding and Managing individual behavior personality – Perception – Values – Attitudes – Learning – Motivation. Understanding and Managing Group Behaviour, Processes – Inter-personal and group dynamics – Communication – Leadership – Managing change – Managing conflicts. Organisational Development.

III

Concepts and perspectives in HRM; HRM in changing environment. Human Resource Planning – Objectives, Process and Techniques.

Job analysis – Job Description. Selecting Human Resources.

Induction, Training and Development. Exit policy and Implications.

Performance Appraisal and Evaluation. Potential Assessment.

Job Evaluation. Wage Determination.

Industrial Relations and Trade Unions.

Dispute Resolution and Grievance Management. Labour Welfare and Social Security Measures.

IV

Financial Management – Nature and Scope. Valuation Concepts and Valuation of Securities.

Capital Budgeting Decisions – Risk Analysis. Capital Structure and Cost of Capital.

Dividend Policy – Determinants.

Long – Term and Short – Term Financing Instruments. Mergers and Acquisitions.

V

Marketing Environment and Environment Scanning; Marketing Information Systems and Marketing Research; Understanding Consumer and Industrial Markets; Demand Measurement and Forecasting; Market Segmentation – Targeting and Positioning;

Product Decisions, Product mix, Product Life Cycle; New Product Development; Branding and Packaging; Pricing Methods and Strategies.

Promotion Decisions –

Promotion mix; Advertising; Personal Selling; Channel Management; Vertical Marketing Systems;

Evaluation and Control of Marketing Effort; Marketing of Services; Customer

Relation Management; Uses of Internet as a Marketing Medium –

Other related issues like branding, market development, Advertising and retailing on the net. New issues in Marketing.

VI

Role and Scope of Production Management; Facility Location; Layout Planning and Analysis;

Production Planning and Control – Production Process Analysis; Demand Forecasting for

Operations; Determinants of Product mix; Production Scheduling; Work measurement; Time and

Motion Study; Statistical Quality Control. Supply Chain Management and Materials Management

Role and Scope of Operations Research; Linear Programming; Sensitivity Analysis; Duality;

Transportation Model; Inventory Control; Queueing Theory; Decision Theory; Markov Analysis;

PERT/CPM.

VII

Probability Theory; Probability distributions – Binomial, Poisson, Normal and Exponential;

Correlation

and Regression analysis; Sampling theory; Sampling distributions; Tests of Hypothesis; Large and small samples; t, F, Chi-square tests.

Use of Computers in Managerial applications; Technology issues and Data processing in organizations; Information systems; MIS and Decision making; System analysis and design; Trends in Information Technology; Internet and Internet-based applications.

VIII

Concept of Corporate Strategy; Components of Strategy Formulation; Ansoff's Growth Vector; BCG Model; Porter's Generic Strategies; Competitor Analysis; Strategic Dimensions and Group Mapping; Industry Analysis; Strategies in Industry Evolution, Fragmentation, Maturity, and decline. Competitive strategy and Corporate Strategy; Transnationalization of World Economy; Managing Cultural Diversity; Global Entry Strategies; Globalisation of Financial System and Services; Managing International Business; Competitive Advantage of Nations; RTP and WTO.

IX

Concepts–

Types, Characteristics; Motivation; Competencies and its development; Innovation and Entrepreneurship; Small business–Concepts Government policy for promotion of small and tiny enterprises; Process of Business Opportunity Identification; Detailed business plan preparation; Managing small enterprises; Planning for growth; Sickness in Small Enterprises; Rehabilitation of Sick Enterprises; Intrapreneurship (Organisational Entrepreneurship).

X

Ethics and Management System; Ethical issues and Analysis in Management; Value based organisations; Personal framework for ethical choices; Ethical pressure on individual in organisations; Gender issues; Ecological consciousness; Environmental ethics; Social responsibilities of business; Corporate governance and ethics.

13. PhD Education (PHDES)

(A) Methodology of Educational Research

Sources of acquiring Knowledge, Meaning and Scope of Educational Research, Meaning and steps of Scientific Method, Characteristics of Scientific Method (Replicability, Precision, Falsifiability and Parsimony), Types of Scientific Method (Exploratory, Explanatory and Descriptive), Aims of research as a scientific activity: Problem-solving, Theory Building and Prediction, Types of research (Fundamental, Applied and Action research), Ethical considerations in Research

Criteria and sources of identifying the research problem, Survey, review and importance of related literature, Selection, definition and evaluation of research problem, Writing Objectives

Hypotheses-Concept, Sources, Types (Research, Directional, Non directional, Null), Formulating Hypothesis, Characteristics of a good hypothesis, Concept of Universe and Sample, Characteristics of a good Sample, Techniques of Sampling (Probability and Non-probability Sampling), Tools of Research - Validity, Reliability and Standardisation of a Tool, Types of Tools (Rating scale, Attitude scale, Questionnaire, Aptitude test and Achievement Test, Inventory), Techniques of Research (Observation, Interview and Projective Techniques)

Variables: Meaning of Concepts, Constructs and Variables, Types of Variables (Independent, Dependent, Extraneous, Intervening and Moderator)

Tools and techniques of data collection-Characteristics of a good research tool Types of research tools and techniques and their use

Major Approaches to Educational Research-Quantitative Research, Qualitative Research and Mixed Methods Research

Methods of Educational Research- Historical research, Descriptive research, Experimental research, Ex post facto research

Statistical Analysis of Data: Types of Measurement Scale (Nominal, Ordinal, Interval and Ratio), Quantitative Data Analysis - Descriptive data analysis (Measures of central tendency, variability, fiducial limits and graphical presentation of data), Testing of Hypothesis (Type I and Type II Errors), Levels of Significance, Power of a statistical test and effect size, Parametric Techniques, Non-Parametric Techniques, Inferential data analysis, Use and Interpretation of statistical techniques: Correlation, t-test, z-test, ANOVA, ANCOVA, Chi-square (Equal Probability and Normal Probability Hypothesis). Qualitative Data Analysis- Data Reduction and Classification, Analytical Induction and Constant Comparison, Concept of Triangulation

Writing Research Report-Meaning and scope, Format of research reports, Presentation Dissemination

(B) Subject Specific Areas:

(i) Philosophical and Sociological Foundations of Education

Relationship of Education and Philosophy, Indian and Western Schools of Philosophy and their educational implications; Contributions of Vivekananda, Tagore, Gandhi and Aurobindo to Indian Education; National values as enshrined in the Indian Constitution, and their educational implications; Philosophical Inquiry in Education, Nature and Scope, Steps, Philosophical inquiry of current educational issues.

Education as a social sub-system-specific characteristics: Education and its relationship with modernization and democracy; Education and its relationship with the home, community; Socialization of the child; Meaning and nature of social change: Education as related to social equity and equality of educational opportunities; Constraints on social change in India; Education of the socially and economically disadvantaged sections of the society including students with special needs. Social mobility.

(ii) Learner, Learning Process and Assessment

Growth and Development: Concept and principles, Social, emotional and cognitive development. Individual differences. Personality - Definitions and theories (Freud, Carl Rogers, Gordon Allport, Max Wertheimer, Kurt Koffka), learning styles and their implications on individual in succeeding in his/her learning; Motivation - concept; determinants and types, implications of motivation on learning; Group dynamics and role of teacher in developing positive class room climate. Mental health and mental hygiene.

Approaches to Intelligence from Unitary to Multiple: Concepts of Social intelligence, multiple intelligence, emotional intelligence Theories of Intelligence by Sternberg, Gardner, Assessment of Intelligence, Concepts of Problem Solving, Critical thinking, Meta cognition and Creativity.

Principles and Theories of learning: Behaviouristic, Cognitive and Constructivist theories of learning, Factors affecting learning, learning environment, Concept of social cognition, understanding social relationship and socialization goals.

Assessment–

Meaning, nature, perspectives (assessment for Learning, assessment of learning and Assessment as Learning) - Types of Assessment - Placement, diagnostic, formative, summative, Criterion-referenced and Norm-referenced. Relation between objectives and outcomes, Assessment of Cognitive (Anderson and Krathwohl), Affective (Krathwohl) and Psychomotor domains (R.H. Dave) of learning.; Issues in Assessment and Evaluation.

Assessment in pedagogy of education – feedback devices, meaning, types, and criteria. Assessment of Portfolios, Reflective Journal, Field Engagement using Rubrics, Competency Based Evaluation, Assessment of Teacher Prepared ICT Resources, performance-based assessment, issues in assessment and evaluation.

(iii) Curriculum Studies

Concept and Principles of Curriculum, Strategies of Curriculum Development, Stages in the Process of Curriculum development, Foundations of Curriculum Planning-Philosophical Bases (National, democratic), Sociological basis (socio cultural reconstruction), Psychological Bases (learner's needs and interests), Bench marking and Role of National level Statutory Bodies - UGC, NCTE and University in Curriculum Development

Models of Curriculum Design: Traditional and Contemporary Models (Academic/ Discipline Based Model, Competency Based Model, Social Functions/Activities Model (social reconstruction), Individual Needs and Interests Model, Outcome Based Integrative Model, Intervention Model, Context, Input, Process, Product Model(CIPP Model).

Instructional System, Instructional Media, Instructional Techniques and Material in enhancing curriculum Transaction, Approaches to Evaluation of Curriculum: Approaches to Curriculum and Instruction(Academic and Competency Based Approaches), Models of Curriculum Evaluation: Tyler's Model, Stakes' Model, Scriven's Model, Kirkpatrick's Model

Meaning and types of Curriculum change, Factors affecting curriculum change, Approaches to curriculum change, Role of students ,teachers and educational administrators in curriculum change and improvement, Scope of curriculum research and Types of Research in Curriculum Studies.

(iv) Educational Management, Administration and Leadership

Educational Management and Administration – Meaning, Principles, Functions and importance, Institutional building, POSDCORB, CPM, PERT, Management as a system, SWOT analysis, Taylorism, Administration as a process, Administration as a bureaucracy, Human relations approach to Administration, Organisational compliance, Organisational development, Organisational climate

Leadership in Educational Administration: Meaning and Nature, Approaches to leadership: Trait, Transformational, Transactional, Value based, Cultural, Psychodynamic and Charismatic, Models of Leadership (Blake and Mouton's Managerial Grid, Fiedler's Contingency Model, Tri-dimensional Model, Hersey and Blanchard's Model, Leader-Member Exchange Theory.

Concept of Quality and Quality in Education: Indian and International perspective, Evolution of Quality: Inspection, Quality Control, Quality Assurance, Total Quality Management (TQM), Six sigma, Quality Gurus: Walter Shewart, Edward Deming, C.KPralhad

Change Management: Meaning, Need for Planned change, Three-Step Model of Change (Unfreezing, Moving, Refreezing), The Japanese Models of Change: Just-in-Time, Poka yoke, Cost of Quality: Appraisal Costs, Failure costs and Preven table costs, Cost Benefit Analysis, Cost Effective Analysis, Indian and International Quality Assurance Agencies: Objectives, Functions, Roles and Initiatives (National Assessment and Accreditation Council [NAAC], Performance Indicators, Quality Council of India (QCI), International Network for Quality Assurance Agencies in Higher Education(INQAAHE).

(v) Educational Technology and ICT

Concept of Educational Technology (ET)as a Discipline:(Information Technology, Communication Technology, Information and Communication Technology (ICT) and Instructional Technology, Application of Educational Technology in formal, non-formal (Open and Distance Learning), informal and inclusive education systems, Overview of Behaviourist, Cognitive and Constructivist Theories and their implications to Instructional Design (Skinner, Piaget, Ausubel, Bruner, Vygotsky), Relationship between Learning Theories and Instructional

Strategies (for large and small groups, formal and nonformal groups)

Systems Approach to Instructional Design, Models of Development of Instructional Design (ADDIE, ASSURE, Dick and Carey Model, Mason's), Gagne's Nine Events of Instruction and Five E's of Constructivism, Nine Elements of Constructivist Instructional Design, Application of Computers in Education: CAI, CAL, CBT, CML, Concept, Process of preparing ODL, Concept of e-learning, Approaches to e-learning (Offline, Online, Synchronous, Asynchronous, Blended learning, mobile learning)

Emerging Trends in e-

learning: Social learning (concept, use of web 2.0 tools for learning, social networking sites, blogs, chats, video conferencing, discussion forum), Open Education Resources (Creative Commons, Massive Open Online Courses; Concept and application), e-Inclusion - Concept of e-Inclusion, Application of Assistive technology in E learning, Quality of e-Learning – Measuring quality of system: Information, System, Service, User Satisfaction and Net Benefits (D&M IS Success Model, 2003), Ethical Issues for e-Learner and e-Teacher-Teaching, Learning and Research.

Use of ICT in Evaluation, Administration and Research: Eportfolios, ICT for Research-Online Repositories and Online Libraries, Online and Offline assessment tools (Online survey tool, sortest generators) – Concept and Development.

(vi) Inclusive Education

Inclusive Education: Concept, Principles, Scope and Target Groups (Diverse learners; Including Marginalized group and Learners with Disabilities), Evolution of the Philosophy of Inclusive Education: Special, Integrated, Inclusive Education, Legal Provisions: Policies and Legislations (National Policy of Education (1986), Programme of Action of Action (1992), Persons with Disabilities Act (1995), National Policy of Disabilities (2006), National Curriculum Framework (2005), Concession and Facilities to Diverse Learners (Academic and Financial), Rehabilitation Council of India Act (1992), Inclusive Education under Sarva Shiksha Abhiyan (SSA), Features of UNCRPD (United Nations Convention on the Rights of Persons with Disabilities) and its Implication

Concept of Impairment, Disability and Handicap, Classification of Disabilities based on ICF Model, Readiness of School and Models of Inclusion, Prevalence, Types, Characteristics and Educational Needs of Diverse learners' Intellectual, Physical and Multiple Disabilities, Causes and prevention of disabilities, Identification of Diverse Learners for Inclusion, Educational Evaluation Methods, Techniques and Tools

Planning and Management of Inclusive Classrooms: Infrastructure, Human Resource and Instructional Practices, Curriculum and Curricular Adaptations for Diverse Learners, Assistive and Adaptive Technology for Diverse learners: Product (Aids and Appliances) and Process (Individualized Education Plan, Remedial Teaching), Parent- Professional Partnership: Role of Parents, Peers, Professionals, Teachers, School

Barriers and Facilitators in Inclusive Education: Attitude, Social and Educational, Current Status and Ethical Issues of inclusive education in India, Research Trends of Inclusive Education in India

(vii) Educational Guidance and Counselling

Understanding Guidance - Meaning and Definitions, Misconceptions about guidance, Need for guidance, Purpose of guidance: self-understanding, self-discovery, self-reliance, self-direction, self-actualization, Scope of guidance programme, Planning Guidance Programmes

Types of Guidance and Group Guidance: Types of Guidance-Educational, Vocational/Career and Personal, Individual guidance and group guidance; advantages of group guidance, Group guidance techniques-class talk, career talk, orientation talk, group discussion, career conference, career corner, bulletin board, role play.

Understanding Counselling - Meaning and nature of counselling, Misconceptions about Counselling, Scope of counselling, Goals of counselling: resolution of problems, modification of behaviour, promotion of mental health. Relationship between guidance and counselling: place of counselling in the total guidance programme

Counselling Process and Counselling Relationship-Stages of the counseling process, Counselling Techniques-personcentred and groupcentred, cognitive interventions, behavioural interventions, and systematic interventions strategies. Theories of Counselling, Skills and qualities of an effective counsellor, Professional ethics

Types and Areas of Counselling - Uses of group process in counselling, Process of group counselling, Areas of counselling: family counselling, parental counselling, adolescent counselling, counseling of girls, counselling of children belonging to special groups, Peer counselling: Its concept and the relevance to the Indian situation, Steps and skills in group counseling process.

(viii) Teacher Education

Development of Teacher Education in India, NCTE Curricular Frameworks for Teacher Education; Objectives and organization of curriculum of teacher education at various levels; Agencies involved in Pre-service and In-service teacher education; Teacher education through Open and Distance Education; Quality assurance in Teacher Education Programme.

Meaning, Nature and Scope of Teacher Education; Types of Teacher Education Programmes, The Structure of Teacher Education Curriculum and its Vision in Curriculum Documents of NCERT and NCTE at Elementary, Secondary and Higher Secondary Levels, Organization of Components of Pre-service Teacher Education Transactional Approaches (for foundation courses) Expository, Collaborative and Experiential learning.

Understanding Knowledge base of Teacher Education from the view point of Schulman, Deng and Luke and Habermas, Meaning of Reflective Teaching and Strategies for Promoting Reflective Teaching, Models of Teacher Education-Behaviouristic, Competency-based and Inquiry Oriented Teacher Education Models

Concept, Need, Purpose and Scope of In-service Teacher Education, Organization and Modes of In-service Teacher Education, Agencies and Institutions of In-service Teacher Education at District, State and National Levels (SSA, RMSA, SCERT, NCERT, NCTE and UGC), Preliminary Consideration in Planning in-service teacher education programme (Purpose, Duration, Resources and Budget)

Concept of Profession and Professionalism, Teaching as a Profession, Professional Ethics of Teachers, Personal and Contextual factors affecting Teacher Development, ICT Integration, Quality Enhancement for Professionalization of Teacher Education, Innovation in Teacher Education.

(ix) Adult Education

Adult Education—Basic concepts and meaning. Adult and Continuing Education--

Pre and Post Independent India, Extension Education and Services in India -- Phases and Movements, Adult Education Perspectives: Asian, Latin American, European and American perspectives Need, concept, types and characteristics of Lifelong Learning programmes in India, Opportunities for Lifelong Learning and Extension, Agencies in Lifelong Learning in and outside India, Comparative Studies in Adult Education: Parameters, Trends and Analysis Theoretical and Functional bases of Adult Education -- Liberal, Behaviouristic, Progressive, Humanistic, Radical and Analytical approaches of Adult Education, Social and educational perspectives of Tagore, Gandhi, Vivekananda, Radhakrishnan, Ambedkar and other Indian thinkers

Andragogy and Pedagogy—Issues of marginalization and pedagogy of women, tribals, minorities, transgender, aged and persons with disability, Attributes and distinctive features of adult learning and development, Individual Vs. Group learning approaches in Adult Education, Experiences and learning from agriculture, home science, community health and technology, Learning needs of diverse group of adult learners, Recognition of prior learning –Resolving the dilemmas of institutional and non-institutional learning, Theories of adult learning, Professionalization of adult education

Policy Planning and Implementation of Adult Education in India—Five Year Plans, Implementing Agencies – Role of Government Departments, Role of Universities, Colleges and Students, Role of NGOs, Role of Local Bodies, Community and individuals, Understanding Networking in Adult Learning, National Literacy Mission; Objectives, strategies, Total Literacy Campaigns, Post-Literacy Campaigns and Continuing Education programmes, Operationalization of the concept of vocational education in adult, continuing education and Lifelong Learning through state supported structures like Jan Shikshan Sansthan (JSS) and non state supported structures of Industrial and Business houses, Population Education: Concept and paradigm shift Development and its indicators, Millennium Development Goals (MDGs), Sustainable Development Goals (SDGs), Building learning communities—Towards a learning society.

14. PhD in Gender & Development Studies (PHDGD)

Concepts and Theories for PhD in Gender and Development Studies

1. Concepts and Theories

Goals and Praxis of Gender and Development, History of Feminists Movement and Formation of Patriarchy, Emergence of Gender and Development Studies in India, Gender Sensitive Planning and Policy Making, Gender Mainstreaming, Gender Analysis, Gender Auditing and Gender Budgeting, Gender and Democracy, Gender Justice, Gender Equality and Equity.

2. The Development Debate

Changing Notions of Development, Development and Post Development Theories, Critique of Development theories from a Gender Perspective, Development and Underdevelopment (Dependency

Theory and its Critiques); WAD/WID/GAD, Power and Decision Making, Gender and Empowerment, Gender and Poverty, HDI, GDI, GEM -Approaches and Indicators.

3. Gender and Livelihoods

Issues in Gender and Environment, Climate Change, Sustainable Environment, Green Politics, Food Security; Land Rights, Right to Forest Resources, Gender, Water and Sanitation, Security of land tenure, Sustainable Development, Ecological Security.

4. Gender and Work

Theories of Feminist Economics; Debates on Women's Labour, Gender Based Division of Labour in Pre-Industrial and Industrial Society, Gender Segregation in the Labour Force, Labour Force Participation of Women in National Economy, Productive and Unproductive Work, Domestic Labour, Female Headed Households, Women and issues of Poverty, Visibility of Women in Statistics and Indicators, Gender Concerns in Formal and Informal Sectors, Social Security and Decent Work, Women's Contribution to National Wealth.

5. Demographic, Nutrition and Health Dimensions

Demographic Characteristics (Sex ratio, Population distribution, Census Enumeration and the debates on Indian Census), Gender Based Violence, Migration, Gender and Health (Nutritional Needs, Occupational Health) Poverty and Food Security, Basic Needs and Development Goals

6. Gender and Culture

Debates in Gender and Culture, Construction of Gender, Formation of Patriarchy, Nature of Indian Patriarchy, Variations in the Theories of Femininity and Masculinity: Cross- Cultural Perspectives, Gender Roles, Gender Ideology, Issues of Ethnicity and Multiculturalism; Communitarianism, Recent debates in Gender and Literature: Post-structuralism; Post- colonialism; Post-feminism; Feminist Futures; Eco Feminism and Environmental Humanisms, Communication, Media and Gender Debates, Changing Gender Roles and Identities: Sexualities and Queer issues; Recent debates on Gender, Education and Social Development, Social Equity and Distributional Aspects of Development in Education and Health.

7. Case Studies and Selected Readings

Course II

Research Methodology in Gender and Development Studies

Researching Gender-I

Debates in the difference between Social and Natural Science, Positivism, Empiricism, Rationalism, Realism, Post Empiricism, Feminist Critique of Positivism, Feminist Epistemology, Stand Point Theory; Gendered Ontology and Changing terms of Societal Inquiry: Liberalism, Marxism, Hermeneutics, Feminism, Post- Modernism, Post- Colonialism and Post-structuralism, Gender and Ethnographic Cultural Studies, Life Histories and Narratology, Gender and Discourse Analysis

1. Researching Gender-II

Quantitative and Qualitative Research, Feminist Paradigms, Feminist Research Methods and Ethics, Situating Differences, Interdisciplinary Methods in Feminist Research.

Processes of Gendering and the Institutionalizing Gender and Gender Relations, Building Alternative Knowledge Base and Feminist World View (Weltanschauung): State, Society, Industry and Market.

2. Research Design, Types and Strategies

Research Design, Exploratory Studies, Surveys, Historical, Experimental, Ethnographic and Case Studies; Types of Research- Fundamental, Applied Research, Action Research, Experimental, Ex-Post Facto Research, Descriptive, Correlational Research, Participatory Research, Special Approaches for Studying Gender- Sensitive Problem- Centred, Policy Relevant and Action Oriented Research, Linking Policy and Research as Strategies for Advocacy

3. Sampling

Definition of Population, Sample, Merits and Demerits of Sampling; Probability Sampling: Random Sampling, Multi-stage Sampling, Cluster Sampling, Non- Probability Sampling, Purposive Sampling, Convenience Sampling, Quota Sampling; Sampling Designs for Various Types of Research; Critical Review of Sampling Design of Different Research Studies.

4. Tools and Techniques of Research

Questionnaire, Interview (Media and Internet), Scaling, Measurement, Focus Group Discussions, Observation, Narration, Gender Analysis Matrix and Impact Flow Chart

5. Selected Studies in Gender and Development

Factors Determining and Influencing Gender and Development; Gender Division of Labour, Time use Survey and Management; Women's Status and Challenges; Household allocation of Resources; Access to Natural Resources; Time Scale for Rural Households; Value Added Analysis for Households: Production/Goods/Resources, Household Decision Making.

6. Data Analysis

Quantitative Data Analysis; Parametric Tests used for Quantitative Data Analysis; Qualitative Data Analysis, Non-Parametric Tests used for Analysis of Qualitative Data; Presentation of Data (Tables, Graphs etc.); Interpretation of Data.

7. Preparing and Presenting Research Reports

Evaluation Research; Report Writing/Paper Presentation, Bibliography/References/Citations; Research Ethics; Research Proposals Seeking Grants; Research Funding Sources

15. **Ph.D Interdisciplinary and Trans-disciplinary Studies(PHDITS)**

RITS001:IntroductiontoInterdisciplinary andTransdisciplinary Studies

1. KnowledgeProductionandEmergenceofDisciplines
2. Disciplinary Approaches: Challenges and Opportunities
3. InterdisciplinaryStudies:NatureandScope
4. Areas of Interdisciplinary Inquiry (Environment, Culture and Civilization, Women and Gender studies, disability, migration and diaspora, labour studies, globalization, sustainable development)
5. EmergingIssuesandChallenges
6. Areas of Interdisciplinary Inquiry: The candidate has to select anyone of the specialization area in consultation with supervisor. This course so proposed by research guide shall be approved by the Doctoral Committee and then assigned to the student.

References:

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- Choudry, Aziz (2011) On Knowledge Production, Learning and Research in Struggle, Uniting Struggles : Critical Social Research in Critical Times,
<http://www.alternativeroutes.ca/index.php/ar/article/viewFile/15862/15764>
- Frodeman,Robert et.al.(2017)TheOxfordHandbookofInterdisciplinarity,OxfordUniversityPress
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- Klein,J.T.&Newell,W.H.(1987),AdvancingInterdisciplinaryStudies,inJerryGraff&JamesRatcliff,H andbookoftheUndergraduateCurriculum,SanFrancisco:Jossey-Bass,pp. 393-394
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- Miser, H.J.(1992),Craftinoperationsresearch, OperationalResearch40(4), pp.633-639
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- Weingart,Peter(2017)AShortHistoryofknowledgeformations,inFrodeman,Robert et.al.(2017) The Oxford Handbook of Interdisciplinarity, Oxford University Press

Garrett-Jones, Sam

(2007) *Transdisciplinarity and Disciplinarity In The University of The Future*, Unity of Knowledge
(In Transdisciplinary Research For Sustainability)– Vol.

RITS002: Research Methods and Techniques

1. Introduction to Social Science Research
2. Types of Research
3. Sources of Data
4. Techniques of Data Collection
5. Ethnography
6. Sampling
7. Research Design
8. Analysis and Interpretation of Data
9. Quantitative Methods
10. Ethics in Research

References:

Babbie, E.R. 2007. *The basics of social research* (4th ed.). Australia: Thomson/Wadsworth
.576 pages. Baker, Lynda M. 2001. Review of
Understanding Research Methods: An Overview of the

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empirical investigation*. New Brunswick, NJ: Transaction Publishers. [Reprint of
previous 2nd edition, 1978, entitled Basic
research methods in social sciences: The art of empirical investigation.] 558p.

Yin, Robert K. 2008. *Case study research: Design and methods*. Applied Social
Research Methods Series 5. 4th ed. City, ST: Sage Publications. 240 p

16. PhD in Dairy Science and Technology

Dairy development in the country and different organizations engaged in the dairy
development in India. The present status and future development plans. Advances in safe and
clean milk production. Chemical composition, nutritive value and physico-chemical properties of
milk and milk products. Microbiological aspects of milk and milk products.

Physical and Chemical methods to control growth of Microorganisms.

Chemistry of the principal constituents of milk, i.e. water, lactose, lipids, proteins
(including enzymes), salt and vitamins. Food Fermentation. Dairy starter cultures and their
evaluation. Important analytical techniques in microbiology. New Food pathogens.

Different processing treatments given to milk during its processing for fluid milk supply and
manufacturing of different products. Chemistry and Microbiological during manufacture of dairy
products.

Application of Advance Techniques and development of new Products in dairy
processing, Bio preservation, Functional Foods. Judging of milk and milk products using
physico- chemical, microbiological and sensory techniques. FSSAI and BIS standards of milk
and milk products. Basic concept of dairy equipment used for liquid milk processing and

manufacturing of different products. Cleaning and sanitization of dairy equipment. Conservation of resources. Packaging materials and techniques for milk and milk products. Recent trends in Food Packaging. Use of non-dairy ingredients during processing of milk and manufacturing of products. Quality and safety aspects of milk and milk products. Bio preservation. Functional Foods. Basic aspects of non-dairy food products.

RESEARCH METHODOLOGY:

Information technology; library resource; internet databases and other packages; literature survey; web based resources and open access journals; digital libraries, manual collection; peer-review process, concept of impact factor and citation index; application of common softwares in food science research. Ethical issues; Plagiarism; Patenting Laws; Indian Patenting Act/International Protocols for technology transfer. Basic concepts of research; type and nature of research; research problem and objectives; formulation of hypotheses, types of hypotheses, methods of testing hypotheses; characteristics of good research problem; sources of research problem; errors in selecting a research problem; methods of research (Experimental, Survey, Observation, Case study, Historical and comparative methods); major emerging areas and interdisciplinary research. Designing research proposal and study; hypothesis; defining research problem, framing objective; Design strategies in research- experimental design: descriptive study, analytic study, experimental study, intervention trials; Safety issues- chemical hazards and their management. Methods of sampling; Data collection; tools and techniques; Data analysis and interpretation: Multivariate data analysis techniques, such as PCA, Cluster analysis, etc., data presentation and summarization of data; graphical presentation. Writing and publishing thesis/research paper; Editing and checking thesis/research paper for plagiarism. Formulating a Project proposal for funding.

17.PhD in Development Studies (PHDDV)

COURSE 1: DEVELOPMENT STUDIES: AN OVERVIEW (8 CREDITS)

BLOCK 1: DEVELOPMENT: AN OVERVIEW

Unit 1: Introduction to Development: Why Development? Objectives and Scope of Development; development and growth; Development Ethics: Gandhi, Lebret, Myrdal and other ethical concepts

Unit 2: Dimensions of Development: Economic, Political, Social, Human, Cultural, Gender and Ethical Dimensions

Unit 3: Development Paradigm: Inclusive Development, Sustainable Development, Good Governance, International Relationship, Women Empowerment and Participatory Development Paradigms

Unit 4: Actors of Development: Markets, State and other Heterogeneous Actors such as international organization, and CVOs

BLOCK 2: DEVELOPMENT THEORIES

Unit 1: Classical and Neo-Classical Theories and Marxian theory

Unit 2: Developmentalist Theories: Balanced and Unbalanced Growth theories, Rostow's

Stages of Economic Growth, Gunnar Myrdal theory

Unit 3: Heterogeneous Theories: Modernization theory, Human Capital Theory, Neo- Liberal Theory and Dependency Theories

BLOCK 3: EDIFICES OF DEVELOPMENT

Unit 1: Development Governance: meaning and scope of development governance; functions and components; features of good governance; attributes and challenges of good development governance

Unit 2: Development Administration: concept and meaning of development administration, scope of development administration, features of good development administration, and challenges of development administration

Unit 4: Development Management: meaning and concept of development management, aim and scope of development management; development management cycle and requisites of effective development management

BLOCK 4: DEVELOPMENTAL ISSUES AND CHALLENGES-I

Unit 1:Economic Challenges: Poverty, Inequality, Inflation and Unemployment, Population and Development

Unit 2:Social Challenges: Conflict and Development, Displacement and Development, Marginalization, Social Disparities and Inclusion, Education and Health

Unit 3: Emerging Challenges: Globalization, Climate change, Social Clustering, Regional Development

BLOCK 5: DEVELOPMENT ISSUES AND CHALLENGES-II

Unit 1: Agriculture and Development: Role of agriculture, Issues and Challenges of agriculture, Measures to improve agriculture

Unit 2: Industry and Development: Role of industry in development, Issues and Challenges of industrial Development, Industrial Development measures

Unit 3: Service Sector and Development: Role of Service Sector in Development, Issues and challenges of service sector, measures to strengthen service sector.

Unit 4: Informal Sector and Development: role of informal sector in development, measures to formalize the informal sector and challenges of informal sector

BLOCK 6: INDIAN DEVELOPMENT

Unit 1: Urban Development in India: Urbanization, Issues and Challenges of Urbanization, Smart Cities

Unit 2: Rural Development in India: Components of Rural Development, Models of Rural Development, Issues and Challenges of Rural Development ,Smart Village, Rural Development measures

Unit 3: Planning and Development in India: Impact of planning before and after liberalization and NITI Ayyog

Unit 5: Globalization and Development in India: Globalization and its impact on the development in India

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Zafarulla, H and Huque, A S (2006): "Understanding development governance: Concept, institution and process" in Haque A.S. and Zafarulla, H (ed.) *International Development Governance*, Taylor and Francis, PP 13-50.

COURSE 2: RESEARCH METHODOLOGY IN DEVELOPMENT STUDIES (8 CREDITS)

	BLOCKS	UNITS
Block-1	Fundamentals of Social Science Research	1. Social Science Research-An Overview
		2. Component of Social Science Research
		3. Research Designs
		4. Research Project Formulation
Block-2	Development Research	1. Basic of Development Research
		2. Methods of Development Research
		3. Development Research Applications
Block-3	Measurement and Sampling	1. Measurement
		2. Scales and Tests
		3. Reliability and Validity
		4. Sampling
Block-4	Data Collection and Analysis-1	1. Quantitative Data Collection Methods and Devises
		2. Qualitative Data Collection Methods and Devises
		3. Overview of Statistical Tools
Block -5	Data Collection and Analysis-2	1. Data Sources-Uses and Limitations
		2. Data Processing and Analysis Report Writing
		3. Report Writing
		4. Use of Computer in Data Analysis

18. PhD (Tourism and Hospitality Service Management)

The question paper will have the following two parts:

- A. Research Methodology
- B. Tourism and Hospitality Services Management

PART I: RESEARCH METHODOLOGY

- 1. Theory of Research :** Meaning and Definition of Research, Types of Research, Research Approaches, Criteria of Good Research, Research Applications
- 2. Problem Identification & Formulation** – Research Question – Investigation Question – Measurement Issues–Hypothesis–Qualities of a good Hypothesis–Null Hypothesis & Alternative Hypothesis. Hypothesis Testing–Logic & Importance
- 3. Research Design:** Concept and Importance in Research–Features of a good research design–Exploratory Research Design – concept, types and uses, Descriptive Research Designs – concept, types and uses. Experimental Design: Concept of Independent & Dependent variables
- 4. Qualitative and Quantitative Research:** Qualitative research – Quantitative research – Concept of measurement, causality, generalization and replication.
- 5. Measurement:** Concept of measurement– what is measured? Problems in measurement in research – Validity and Reliability. Levels of measurement– Nominal, Ordinal, Interval, Ratio.
- 6. Sampling:** Concepts of Statistical Population, Sample, Sampling Frame, Sampling Error, Sample Size, Non Response. Characteristics of a good sample. Probability and Non Probability samples. Determining size of the sample–Practical considerations in sampling and sample size. Sampling Tests
- 7. Data Analysis:** Percentages and Ratios, Measures of Central Tendency, Frequency Distribution, Measures of Variability, Correlation and Regression, Measurement of Trend, Data Preparation – Univariate analysis (frequency tables, bar charts, pie charts, percentages), Bivariate analysis – Cross tabulations and Chi-square test including testing hypothesis.
- 8. Interpretation of Data and Paper Writing**
- 9. Use of tools / techniques for Research:** methods to search required

information effectively, Reference Management Software, Software for detection of Plagiarism

PART II: Subject Specific

Unit-1

Tourist/Visitors/Travelers/Excursionist-Definition and Differentiation, Tourism recreation and Leisure inter-relationship. Tourism components, Types and Typologies of Tourism

Emerging Concept: Eco/Rural/Agri/Farm/Green/Wildness/Countryside/ Special interest tourism

Tourism Trends: Growth and development over the year and factors responsible there in. Changing market destination pattern, traffic flows. Receipt trends. Travel motivator and deterrents. Pull and push forces in tourism.

Linkage and Channels of distribution in tourism

Tourism organization /institutions: Origin Organization and function of WTO,PATA, IATA, ICAO, FHRAI,TAAI, IATO and UFTAA

Unit-2

Concept of resource, Attraction and product in tourism, Tourism Products: Typology and unique feature

Natural tourism resources in India: Existing use pattern vis-à-vis potential with relation to varied and form (Mountain, deserts, beaches, coastal areas and island), Water bodies and biotic wealth (flora-fauna)

Popular Tourist destination for land based (soft/hard trekking, ice skiing, mountaineering, desert, safaris, carrallies etc), Water Based (rafting, kayaking, canoeing, surfing, waterskiing, scuba/snuba diving) and airbased (Para-sailing, Paragliding, ballooning, hand gliding and micro lightening etc), Tourist activities, Wildlife-Tourism a conservation related issues-Occurrence and distributions of popular wildlife species in India. Tourism national parks. Wildlife sanctuaries and biosphere reserve (case of Dachigam, Corbett/Dudhwa/Kaxiranga/kanha/Gir/Ranthumbore/Mudumalai/Sunderbun/Shivpuri/Manas/NandaDevi/Valley of flower reserve)

Tourism and nature conservation-conflict, symbiosis and Synergy

Cultural Tourism resources in India: Indian culture and Society Indian History-

Ancient, Medieval and Modern Tradition, Customs and costumes, Life Style and settlements patterns, Food habits and cuisines, Music, Musical instruments and Dance Forms. Drawing and Painting, Craftsmanship Religion/ Religious observances and important pilgrim destination Architectural Heritage-Forts/palace etc.

Unit-3

Accommodation: Concepts, types and typologies, Linkage and Significance with relation to tourism Emerging dimensions of accommodation industry-Heritage hotels, Motels and resort properties, Time share establishments

Hotel-Origin, Growth and diversification, Classification, registration and gradation of hotels, Organizational Structure, Functions and Responsibilities of the various departments of a standard hotel/other catering outlets, bars, restaurants etc.

Fiscal and non fiscal incentives available to hotel industry in India, Ethical legal and regulatory aspects

Unit-4

Transportation: Dynamically changing needs and means, Landmarks in the development of transport sector and the consequent socioeconomic, cultural and environmental implication, Tourism transport system.

Airlines Transportation: The Airlines Industry-Origin and Growth. Organization of Air Transport Industry. Scheduled and Non Scheduled Airlines services. Role of IATA, ICAO, and other agencies, Bermuda convention.

Air Transports Industry in India- DGCA and other key players, Regulatory framework, Acts, Indian Carriers- Operations Management and Performance, Marketing Strategies of Air India.

Significance of Road Transport in Tourism: Growth and development of road transport system in India, State of existing infrastructure, Public and Private Sector involvement Role of Regional Transport Authority, Approved Travel Agencies, Tour/Transport Operators, Rental Companies

Rail Transport Network- Major Railways system of world-British Rail, Euro Rail and Amtrak Type of Special Package offered by Indian Railways to tourists-Indrail passes Palace on wheel and royal Orient Water Transport system in India- History of water transport, Cruise ships, Ferries, Hovercraft, River and canal boats, Flycruise, Future prospects etc.

Unit-5

Travel Agencies and Tour Operators Business: Origin, Growth and Development, Definition, Differentiation and linkage, Organization and functions, Travel information counseling, Itinerary preparation, reservation, costing/pricing, Marketing of tour package. Income sources

Airlines Ticketing: Operational perspective of ticketing-ABC codes Flight Scheduling, Flying time, and MPM/TPM calculation, TIM (Travel Information Manual), Consultation, Routine and itinerary preparation, Types of fare, fare calculation and rounding up, Currency conversion and payment modes, issuance of ticket

Cargo handling: Baggage allowance, Free Access Baggage, Weigh and Piece Concept,

Accountability of lost baggage, Dangerous goods, Cargo rates and valuation charges, Automation and airport procedures

Requirements for setting up Travel Agency and Tour Operation business

Approval from organization and institution concerned, Incentives available in Indian context, constraint and limitations

Unit-6

Marketing : Core concepts in marketing, Needs, Wants, Demands, Product market, Marketing Management Philosophies-Production, Selling, Marketing and social perspective, economic importance of marketing

Tourism Marketing: Service characteristics of tourism, unique features of tourist demand and tourist product, Tourism marketing mix

Analysis and selection of market: Measuring and forecasting tourism demand, Forecasting method, Managing capacity and demand, Market segmentation and positioning

Developing marketing environment, consumer buying behavior, competitive differentiation and competitive marketing strategies, new product development, product life cycle, Customer satisfaction and related strategies in internal and external marketing, interactive and relationship marketing

Planning marketing programmes : Product and product strategies, Product line, Product mix, Branding and packaging, Pricing Consideration, Approaches and strategies, Distribution channels and strategies

Marketing of Tourism Services: Marketing of Airlines, Hotels, Resort, Travel Agencies and other tourism related services-challenges and strategies

Marketing Skill for Tourism: Creativity-communication-Self motivation-
team building, personality development

Unit 7

Tourism Planning: Origin, concept and approaches, Level and types of tourism planning, Product life cycle theories and their applicability in tourism planning, Urban and Rural tourism planning

Tourism planning and policy perspective, planning at national, state and regional levels, India's tourism policies

Tourism Planning process: Objectives, Setting, Background analysis, detailed research and analysis, Synthesis, goal setting and plan formulation, Evaluation of tourism project-Project feasibility study, Plan implementation, Development and monitoring tourism masterplan

Tourism impacts and need for sustainable tourism planning: Socio-Cultural, Economic and Physical Impacts, Tourism Carrying Capacity and Environmental Impact Analysis(EIA)

Business ethics and laws-their relevance and applicability in travel and tourism industry Law and legislation relating to tourist entry, stay, departure, Passport, Visa and Health Tourist safety and security, Preservation and conservation of heritage, Archaeological sites and wildlife.

Unit-8

Management: Concept, Nature, Process and Functions, Management levels, Managerial skills and roles, the external Environment, Social responsibilities and ethics

Planning: Nature, Purpose types and process, Management by objectives, strategies, and policies, Decision making process, Tools and techniques, Decision making models Organizing: Concept of organizing and organization, Line and Staff, Authority and responsibility, Span of control, Delegation, Decentralization, conflict and Coordination, organizational structure and design, Management of change innovation and organizational development

Directing: Communication- process, Types, Barriers and principles of effective

communication, Motivation-Theories and practices, Leadership-Concept theories and styles Controlling: Process, Methods and techniques, managing international business Information systems: Automation of manual system, Data Processing stages, Evolution from EDP to MIS MIS: Introduction, Definition, Status Computer networking: Application of CRS (computerized reservation System) in travel trade and hospitality sector

Unit-9

Financial Management and Planning:

Finance: Meaning, Goals, Functions, Importance and typologies of finance, Role of financial management, Organizational goal, environment, Forecasting and financial planning, Breakeven analysis.

Management of current Assets : Working Capital Management: Meaning and characteristic of working capital, Financing current assets, Cash management, Receivables management and inventory management

Management of fixed Assets: Importance of Capital Budgeting, analytical techniques- non Discounted, Discounted techniques

Financial Structure and Management of Earnings

Meaning, Difference between financial and capital structures, Determinants of financial Structure

Accounting: Preparation of Business Income statement, Balance Sheet, Cash flow statement and Fund flow statement, Hotel Accounting

19. PhD Computer Science (PHDCS)

PART –1 (Research Methodology)

Sets, Relations, Functions, Matrices and Determinants, Probability and Statistics, Descriptive and Inferential Statistics, Probability Distributions Numerical Methods, Finite Differences, Numerical Integration.

PART–2 (Computer Science)

1. Computer System Architecture

Digital Logic Circuits and Components: Digital Computers, Logic Gates, Boolean Algebra, Map Simplifications, Combinational Circuits, Flip-Flops, Sequential Circuits, Integrated Circuits, Decoders, Multiplexers, Registers and Counters, Memory Unit.
Data Representation: Data Types, Number Systems and Conversion, Complements, Fixed Point Representation, Floating Point Representation, Error Detection Codes, Computer Arithmetic - Addition, Subtraction, Multiplication and Division Algorithms.
Register Transfer and Microoperations: Register Transfer Language, Bus and Memory Transfers, Arithmetic, Logic and Shift Microoperations.
Basic Computer Organization and Design: Stored Program Organization and Instruction Codes, Computer Registers, Computer Instructions, Timing and Control, Instruction Cycle, Memory-Reference Instructions, Input-Output, Interrupt.
Programming the Basic Computer: Machine Language, Assembly Language, Assembler, Program Loops, Subroutines, Input-Output Programming.

Microprogrammed Control: Control Memory, Address Sequencing, Design of Control Unit.
Central Processing Unit: General Register Organization, Stack Organization, Instruction Formats, Addressing Modes, RISC Computer, CISC Computer.
Pipeline and Vector Processing: Parallel Processing, Pipelining, Arithmetic Pipeline, Instruction Pipeline, Vector Processing, Array Processors.

Input-Output Organization: Peripheral Devices, Input-Output Interface, Asynchronous Data Transfer, Modes of Transfer, Priority Interrupt, DMA, Serial Communication.
Memory Hierarchy: Main Memory, Auxiliary Memory, Associative Memory, Cache Memory, Virtual Memory, Memory Management Hardware.
Multiprocessors: Characteristics of Multiprocessors, Interconnection Structures, Inter-processor Arbitration, Inter-processor Communication and Synchronization, Cache Coherence, Multi core Processors.

2. Discrete Structures and Optimization

Mathematical Logic: Propositional and Predicate Logic, Propositional Equivalences, Normal Forms, Predicates and Quantifiers, Nested Quantifiers, Rules of Inference.
Sets and Relations: Set Operations, Representation and Properties of Relations, Equivalence Relations, Partially Ordering.
Counting Mathematical Induction and Discrete Probability: Basics of Counting, Pigeonhole Principle, Permutations and Combinations, Inclusion Exclusion Principle, Mathematical Induction, Probability, Bayes' Theorem.
Group Theory: Groups, Subgroups, Semi-Groups, Product and Quotients of Algebraic Structures, Isomorphism, Homomorphism, Automorphism, Rings, Integral Domains, Fields, Applications of Group Theory.
Graph Theory: Simple Graph, Multigraph, Weighted Graph, Paths and Circuits, Shortest Paths in Weighted Graphs, Eulerian Paths and Circuits, Hamiltonian Paths and Circuits, Planner graph, Graph Coloring, Bipartite Graphs, Trees and Rooted Trees, Prefix Codes, Tree Traversals, Spanning Trees and Cut-Sets.
Boolean Algebra: Boolean Functions and its Representation, Simplifications of Boolean Functions.
Optimization: Linear Programming - Mathematical Model, Graphical Solution, Simplex and Dual

Simplex Method, Sensitive Analysis; Integer Programming, Transportation and Assignment Models.

PERT-CPM: Diagram Representation, Critical Path Calculations, Resource Levelling, Cost Consideration in Project Scheduling.

3. Programming Languages and Computer Graphics

Language Design and Translation Issues: Programming Language Concepts, Paradigms and Models, Programming Environments, Virtual Computers and Binding Times, Programming Language Syntax, Stages in Translation, Formal Transition Models.

Elementary Data Types: Properties of Types and Objects; Scalar and Composite Data Types. Programming in C: Tokens, Identifiers, Data Types, Sequence Control, Subprogram Control, Arrays, Structures, Union, String, Pointers, Functions, File Handling, Command Line Arguments, Preprocessors.

Object Oriented Programming: Class, Object, Instantiation, Inheritance, Encapsulation, Abstract Class, Polymorphism.

Programming in C++: Tokens, Identifiers, Variables and Constants; Data types, Operators, Control statements, Functions Parameter Passing, Virtual Functions, Class and Objects; Constructors and Destructors; Overloading, Inheritance, Templates, Exception and Event Handling; Streams and Files; Multifile Programs.

Web Programming: HTML, DHTML, XML, Scripting, Java, Servlets, Applets.

Computer Graphics: Video-Display Devices, Raster-Scan and Random-Scan Systems; Graphics Monitors, Input Devices, Points and Lines; Line Drawing Algorithms, Mid- Point Circle and Ellipse Algorithms; Scan Line Polygon Fill Algorithm, Boundary-Fill and Flood-Fill.

2-D Geometrical Transforms and Viewing: Translation, Scaling, Rotation, Reflection and Shear Transformations; Matrix Representations and Homogeneous Coordinates; Composite Transforms, Transformations Between Coordinate Systems, Viewing Pipeline, Viewing Coordinate Reference Frame, Window to View Port Coordinate Transformation, Viewing Functions, Line and Polygon Clipping Algorithms.

3-D Object Representation, Geometric Transformations and Viewing: Polygon Surfaces, Quadric Surfaces, Spline Representation, Bezier and B-Spline Curves; Bezier and B-Spline Surfaces; Illumination Models, Polygon Rendering Methods, Viewing Pipeline and Coordinates; General Projection Transforms and Clipping.

4. Database Management Systems

Database System Concepts and Architecture: Data Models, Schemas, and Instances; Three-Schema Architecture and Data Independence; Database Languages and Interfaces; Centralized and Client/Server Architectures for DBMS.

Data Modeling: Entity-Relationship Diagram, Relational Model - Constraints, Languages, Design, and Programming, Relational Database Schemas, Update Operations and Dealing with Constraint Violations; Relational Algebra and Relational Calculus; Codd Rules. SQL: Data Definition and Data Types; Constraints, Queries, Insert, Delete, and Update Statements; Views, Stored Procedures and Functions; Database Triggers,

SQL Injection. Normalization for Relational Databases: Functional Dependencies and Normalization; Algorithms for Query Processing and Optimization; Transaction Processing, Concurrency Control Techniques, Database Recovery Techniques, Object and Object-Relational Databases; Database Security and Authorization. Enhanced Data Models: Temporal Database Concepts, Multimedia Databases, Deductive Databases, XML and Internet Databases; Mobile Databases, Geographic Information Systems, Genome Data Management, Distributed Databases and Client-Server Architectures. Data Warehousing and Data Mining: Data Modeling for Data Warehouses, Concept Hierarchy, OLAP and OLTP; Association Rules, Classification, Clustering, Regression, Support Vector Machine, K-Nearest Neighbour, Hidden Markov Model, Summarization, Dependency Modeling, Link Analysis, Sequencing Analysis, Social Network Analysis. Big Data Systems: Big Data Characteristics, Types of Big Data, Big Data Architecture, Introduction to Map-Reduce and Hadoop; Distributed File System, HDFS. NOSQL: NOSQL and Query Optimization; Different NO SQL Products, Querying and Managing NOSQL; Indexing and Ordering Data Sets; NOSQL in Cloud.

5. System Software and Operating System

System Software: Machine, Assembly and High-Level Languages; Compilers and Interpreters; Loading, Linking and Relocation; Macros, Debuggers. Basics of Operating Systems: Operating System Structure, Operations and Services; System Calls, Operating-System Design and Implementation; System Boot. Process Management: Process Scheduling and Operations; Inter-process Communication, Communication in Client–Server Systems, Process Synchronization, Critical-Section Problem, Peterson’s Solution, Semaphores, Synchronization. Threads: Multicore Programming, Multithreading Models, Thread Libraries, Implicit Threading, Threading Issues. CPU Scheduling: Scheduling Criteria and Algorithms; Thread Scheduling, Multiple-Processor Scheduling, Real-Time CPU Scheduling.

Deadlocks: Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Avoidance and Detection; Recovery from Deadlock.

Memory Management: Contiguous Memory Allocation, Swapping, Paging, Segmentation, Demand Paging, Page Replacement, Allocation of Frames, Thrashing, Memory-Mapped Files.

Storage Management: Mass-Storage Structure, Disk Structure, Scheduling and Management, RAID Structure.

File and Input/Output Systems: Access Methods, Directory and Disk Structure; File-System Mounting, File Sharing, File-System Structure and Implementation; Directory Implementation, Allocation Methods, Free-Space Management, Efficiency and Performance; Recovery, I/O Hardware, Application I/O Interface, Kernel I/O Sub-system, Transforming I/O Requests to Hardware Operations.

Security: Protection, Access Matrix, Access Control, Revocation of Access Rights, Program Threats, System and Network Threats; Cryptography as a Security Tool, User Authentication, Implementing Security Defenses.

Virtual Machines: Types of Virtual Machines and Implementations; Virtualization.

Linux Operating Systems: Design Principles, Kernel Modules, Process Management,

Scheduling, Memory Management, File Systems, Input and Output; Interprocess Communication, Network Structure.

Windows Operating Systems: Design Principles, System Components, Terminal Services and Fast User Switching; File System, Networking.

Distributed Systems: Types of Network based Operating Systems, Network Structure, Communication Structure and Protocols; Robustness, Design Issues, Distributed File Systems.

6. Software Engineering

Software Process Models: Software Process, Generic Process Model–Framework Activity, Task Set and Process Patterns; Process Lifecycle, Prescriptive Process Models, Project Management, Component Based Development, Aspect-Oriented Software Development, Formal Methods, Agile Process Models –Extreme Programming (XP), Adaptive Software Development,

Scrum, Dynamic System Development Model, Feature Driven Development, Crystal, Web Engineering.

Software Requirements: Functional and Non-Functional Requirements; Eliciting Requirements, Developing Use Cases, Requirement Analysis and Modelling; Requirements Review, Software Requirement and Specification (SRS) Document.

Software Design: Abstraction, Architecture, Patterns, Separation of Concerns, Modularity, Information Hiding, Functional Independence, Cohesion and Coupling; Object-Oriented Design, Data Design, Architectural Design, User Interface Design, Component Level Design.

Software Quality: McCall's Quality Factors, ISO9126 Quality Factors, Quality Control, Quality Assurance, Risk Management, Risk Mitigation, Monitoring and Management (RMMM); Software Reliability.

Estimation and Scheduling of Software Projects: Software Sizing, LOC and FP based Estimations; Estimating Cost and Effort; Estimation Models, Constructive Cost Model (COCOMO), Project Scheduling and Staffing; Time-line Charts.

Software Testing: Verification and Validation; Error, Fault, Bug and Failure; Unit and Integration Testing; White-box and Black-box Testing; Basis Path Testing, Control Structure Testing, Deriving Test Cases, Alpha and Beta Testing; Regression Testing, Performance Testing, Stress Testing.

Software Configuration Management: Change Control and Version Control; Software Reuse, Software Re-engineering, Reverse Engineering.

7. Data Structures and Algorithms

Data Structures: Arrays and their Applications; Sparse Matrix, Stacks, Queues, Priority Queues, Linked Lists, Trees, Forest, Binary Tree, Threaded Binary Tree, Binary Search Tree, AVL Tree, B Tree, B+Tree, B*Tree, Data Structure for Sets, Graphs, Sorting and Searching Algorithms; Hashing.

Performance Analysis of Algorithms and Recurrences: Time and Space Complexities; Asymptotic Notation, Recurrence Relations.

Design Techniques: Divide and Conquer; Dynamic Programming, Greedy Algorithms, Backtracking, Branch and Bound.

Lower Bound Theory: Comparison Trees, Lower Bounds through Reductions.
Graph Algorithms: Breadth-First Search, Depth-First Search, Shortest Paths, Maximum Flow, Minimum Spanning Trees.
Complexity Theory: P and NP Class Problems; NP-completeness and Reducibility.
Selected Topics: Number Theoretic Algorithms, Polynomial Arithmetic, Fast Fourier Transform, String Matching Algorithms.
Advanced Algorithms: Parallel Algorithms for Sorting, Searching and Merging, Approximation Algorithms, Randomized Algorithms.

8. Theory of Computation and Compilers

Theory of Computation: Formal Language, Non-Computational Problems, Diagonal Argument, Russell's Paradox.
Regular Language Models: Deterministic Finite Automaton (DFA), Non-

Deterministic Finite Automaton (NFA), Equivalence of DFA and NFA, Regular Languages, Regular Grammars, Regular Expressions, Properties of Regular Language, Pumping Lemma, Non-Regular Languages, Lexical Analysis.
Context Free Language: Pushdown Automaton (PDA), Non-Deterministic Pushdown Automaton (NPDA), Context Free Grammar, Chomsky Normal Form, Greibach Normal Form, Ambiguity, Parse Tree Representation of Derivation Trees, Equivalence of PDA's and Context Free Grammars; Properties of Context Free Language.

Turing Machines (TM): Standard Turing Machine and its Variations; Universal Turing Machines, Models of Computation and Church-Turing Thesis; Recursive and Recursively- Enumerable Languages; Context-Sensitive Languages, Unrestricted Grammars, Chomsky Hierarchy of Languages, Construction of TM for Simple Problems.

Unsolvable Problems and Computational Complexity: Unsolvable Problem, Halting Problem, Post Correspondence Problem, Unsolvable Problems for Context-Free Languages, Measuring and Classifying Complexity, Tractable and Intractable Problems.

Syntax Analysis: Associativity, Precedence, Grammar Transformations, Top Down Parsing, Recursive Descent Predictive Parsing, LL(1) Parsing, Bottomup Parsing, LR Parser, LALR(1)Parser.

Semantic Analysis: Attribute Grammar, Syntax Directed Definitions, Inherited and Synthesized Attributes; Dependency Graph, Evaluation Order, S-attributed and L-attributed Definitions; Type-Checking.

Run Time System: Storage Organization, Activation Tree, Activation Record, Stack Allocation of Activation Records, Parameter Passing Mechanisms, Symbol Table.

Intermediate Code Generation: Intermediate Representations, Translation of Declarations, Assignments, Control Flow, Boolean Expressions and Procedure Calls.

Code Generation and Code Optimization: Control-flow, Data-flow Analysis, Local Optimization, Global Optimization, Loop Optimization, Peep-Hole Optimization, Instruction Scheduling.

9. Data Communication and Computer Networks

Data Communication: Components of a Data Communication System, Simplex, Half-Duplex and Duplex Modes of Communication; Analog and Digital Signals; Noiseless and Noisy Channels; Bandwidth, Throughput and Latency; Digital and Analog Transmission; Data Encoding and Modulation Techniques; Broadband and Baseband Transmission; Multiplexing, Transmission Media, Transmission Errors, Error Handling Mechanisms.

Computer Networks: Network Topologies, Local Area Networks, Metropolitan Area Networks, Wide Area Network, Wireless Networks, Internet.

Network Models: Layered Architecture, OSI Reference Model and its Protocols; TCP/IP Protocol Suite, Physical, Logical, Port and Specific Addresses; Switching Techniques.

Functions of OSI and TCP/IP Layers: Framing, Error Detection and Correction; Flow and Error Control; Sliding Window Protocol, HDLC, Multiple Access – CSMA/CD, CSMA/CA, Reservation, Polling, Token Passing, FDMA, CDMA, TDMA, Network Devices, Backbone Networks, Virtual LANs.

IPv4 Structure and Address Space; Classful and Classless Addressing; Datagram, Fragmentation and Checksum; IPv6 Packet Format, Mapping Logical to Physical Address (ARP), Direct and Indirect Network Layer Delivery; Routing Algorithms, TCP, UDP and SCTP Protocols; Flow Control, Error Control and Congestion Control in TCP and SCTP.

World Wide Web (WWW): Uniform Resource Locator(URL),Domain Name Service (DNS), Resolution - Mapping Names to Addresses and Addresses to Names; Electronic Mail Architecture, SMTP, POP and IMAP; TELNET and FTP.

Network Security: Malwares, Cryptography and Steganography; Secret-Key Algorithms, Public-Key Algorithms, Digital Signature, Virtual Private Networks, Firewalls.

Mobile Technology: GSM and CDMA; Services and Architecture of GSM and Mobile Computing; Middleware and Gateway for Mobile Computing; Mobile IP and Mobile Communication Protocol; Communication Satellites, Wireless Networks and Topologies; Cellular Topology, Mobile Adhoc Networks, Wireless Transmission and Wireless LANs; Wireless Geolocation Systems, GPRS and SMS.

Cloud Computing and IoT: SaaS, PaaS, IaaS, Public and Private Cloud; Virtualization, Virtual Server, Cloud Storage, Database Storage, Resource Management, Service Level Agreement, Basics of IoT.

10. Artificial Intelligence (AI)

Approaches to AI: Turing Test and Rational Agent Approaches; State Space Representation of Problems, Heuristic Search Techniques, Game Playing, Min-Max Search, Alpha Beta Cutoff Procedures.

Knowledge Representation: Logic, Semantic Networks, Frames, Rules, Scripts, Conceptual Dependency and Ontologies; Expert Systems, Handling Uncertainty in Knowledge.

Planning: Components of a Planning System, Linear and Non Linear Planning; Goal Stack Planning, Hierarchical Planning, STRIPS, Partial Order Planning.

Natural Language Processing: Grammar and Language; Parsing Techniques, Semantic Analysis and Pragmatics.

Multi Agent Systems: Agents and Objects; Agents and Expert Systems; Generic

Structure of Multiagent System, Semantic Web, Agent Communication, Knowledge Sharing using Ontologies, Agent Development Tools.

Fuzzy Sets: Notion of Fuzziness, Membership Functions, Fuzzification and Defuzzification; Operations on Fuzzy Sets, Fuzzy Functions and Linguistic Variables; Fuzzy Relations, Fuzzy Rules and Fuzzy Inference; Fuzzy Control System and Fuzzy Rule Based Systems.

Genetic Algorithms (GA): Encoding Strategies, Genetic Operators, Fitness Functions and GA Cycle; Problem Solving using GA.

Artificial Neural Networks(ANN):Supervised, Unsupervised and Reinforcement Learning; Single Perceptron, Multi Layer Percept

20. PhD Nursing (PHDNS)

Syllabus for entrance test is based on M.Sc Nursing curriculum with following details:

Research Methodology and Statistics	50Marks
Nursing management	20Marks
Nursing Education	20 Marks
Specialization area of Nursing	10Marks

(Medical Surgical Nursing /Pediatric Nursing/Obstetric and Gynecology Nursing/
Community Health Nursing/Mental Health and psychiatric Nursing)

21. PHD in French

Research Methodology :

- i. Approaches and Categories; Types of Research; Selection of Subject; Research Design; Sampling Techniques; Data Collection, Fieldwork, Primary & Secondary Sources, Questionnaires and Data Collection Tools, Data Analysis, Quantitative and Qualitative Analysis, Referencing, Styles and Annotation: Research Ethics.
- ii French and Francophone Literature (17th-20th century); Francophonie : history, culture and literary trends.
- iii. Linguistics ; Basic concepts; Important theories related to language learning; Translation & Interpretation; Didactics of Foreign languages with emphasis on FLE:
- iv. Trends and Theories; History, Culture & Civilization of France (17th-20th century), Popular Culture--Current contexts and socio political trends in France : Art, Cinema & Theatre.
- v. Introduction to Open and Distance Learning – Digital Tools, Computer Mediated Learning; Mixed Methods and Hybrid Models of Teaching/ Learning of Languages.

22 PhD in Vocational Education and Training (PHDVE)

Syllabus of PhD Entrance Test of Vocational Education (PHDVE)

The syllabus of the Entrance Test shall consist of 50% of research methodology and 50% shall be of Vocational education and training

Part-A: Research Methodology

Introduction to research: meaning of research, role research in behavioral sciences, process of research, types of research, research approach and significance of research.

Formulation of a Research Problem: Research problem: definition, selection and necessity of research problem.

Data Collection Methods: Primary and secondary data, methods of collecting primary data, merits and demerits of different methods of collecting primary data, non-response.

Data Collection Techniques: Designing a questionnaire, pretesting a questionnaire, editing of primary data, technique of interview, collection of secondary data, scrutiny of secondary data, scale of measurements.

Sampling Techniques: Introduction to sampling, advantage of sampling over census, probability and non-probability sampling and non-sampling error, basics

of simple random sampling, stratified random sampling, systematic sampling, and multistage sampling.

Presentation of Data: Classification and tabulation of data diagrammatic and graphical presentation of data.

Statistical Methods: Measure of Central tendency, measures of dispersion, simple correlation and regression, testing of hypothesis (z, t, F and chi-square tests), Interpretation of data.

Report writing: Formation of Report, Presentation of a report

Part B: Vocational Education and Training

Vocational Education (for Human Recourse Development for National Development, for Knowledge Economy, for Development of Marginalized Sections of the Society, for Persons with Special Needs, Personal/Family Actualisation and Happiness).

International Experiences: Review of International Reports (UNESCO's Report of the International Commission on Education for the Twenty-First Century "Learning: The Treasure Within, Second International Congress on Technical and Vocational Education, Report on Knowledge Acquisition and Skill Development (UNESCO)), International Experiences in Vocational Education (Germany, China, Korea, Japan, Switzerland, Australia, New Zealand).

Growth and Development in India: Historical Background of Vocational Education in India (Pre-Independence Period, Post-Independence Period), Impact of Globalization and Liberalization on Vocational Education. Recent Government of India initiatives on Vocational education, NSOF, VET programmes through formal non-formal modes.

Initiatives by Different Sectors of India: Education Sector (CBSE, State Boards, NIOS and State Open Schools, Community Polytechnics, Jan Shikshan Sansthan, Community Colleges, Degree Colleges and Universities, Open Universities, NCERT and PSSCIVE), Industrial Sector (Craftsman Training Scheme, Apprenticeship Training Scheme, Skill Development Initiative), Health and Paramedical Sector, Agriculture Sector, Business and Commerce Sector, Information and Communication Sector, Role and Work of Non-Governmental Organizations.

Models of Vocational Education and Training: School Based Model (Introduction of VEP in Schools, Thrust Areas Identified by NPE (1986) for VEP, Centrally Sponsored Scheme of Vocationalisation of Education, Programme of Action (POA, 1992), Industry Based Model (Vocational Training Programmes), Community Colleges Scheme, Apprenticeship.

Issues in Vocational Educational and Training: Social Acceptability, Access, Terminal Nature of Courses, Employability, Multi-Skilling, Managing a Small

Enterprise, Remunerative Structure (wages and earnings) of Vocationally trained person

Relevance, Untrained Vocational Teachers, On the Job Training, Apprenticeship Training Assessment and Certification of Prior Learning, Connectivity among Vocational programmes at All Levels, Lateral and Vertical Mobility.

Environmental consciousness and Sustainable Development: Understanding Environment, Environmental Concerns, Environmental Problems and Issues, Major Environmental Problems, Global Environmental Issues (Global Warming, Acid Rain, Ozone Layer Depletion), Environmental Resources (Forest Resources, Land Resources, Water Resources, Animal Resources).

23. Ph.D. in Child Development (PHDCD)

The Entrance examination will be based on what is covered in the syllabus of the M.Sc. Home Science specialization 'Child Development' as well as the relevant components in the UGC-NET syllabus pertaining to the component 'Research Methodology' and the specialization component 'Child Development'. (The specialization 'Child Development' could be referred to by different names in various universities such as Human Development / Human Development and Childhood Studies / Human Development and Family Studies).

The outline of the syllabus is as follows:

Paper1:Research Methodology(50%)

1. Purpose and characteristics of research.
2. Research approaches: quantitative, qualitative and mixed.
3. Positivism and post-positivistic approach to research; nomothetic and idiographic approaches.
4. Steps of research-the research cycle.
5. Research design, sampling and methods of data collection in quantitative ,qualitative and mixed methods research.
6. Reliability and validity.
7. Values, Social Responsibility and Ethics in Research.
8. Sources, acquisition, and classification of data.
9. Basic principles and concepts in statistics; Descriptive Statistics; Probability and normal distribution.
10. Statistical tests-parametric and non-parametric tests of association and difference, regression; interpretation of tests
11. Data analysis and interpretation-quantitative and qualitative data.
12. Graphical representation(bar-chart,histograms,pie-chart,table-chart,andline-chart)and mapping of data.
13. Application of ICT in research

Paper2:Subject specific:Child Development(50%)

1. Principles of growth and development.
 2. Pregnancy and child birth.
 3. Development through the lifespan in various domains (including physical-motor; cognitive, language, socio-emotional development).
 4. Theories of child/human development and behavior;cultural context of human development.
 5. Early childhood care and education–curriculum, pedagogy and materials; activities to promote holistic development.
 6. Influence of family, peers, school, community and culture on development.
 7. Children and persons with disabilities-care and support, early intervention, special education, prevention of disabilities, rehabilitation.
 8. Children at risk-child labour, street children, orphaned, abandoned and destitute children, child abuse and trafficking.
 9. Adolescence and youth: developmental changes and challenges; programmes to promote optimal development.
 10. Adulthood-characteristics, changing roles and responsibilities in early and middle adulthood.
 11. Aging-physical and psychological changes; care ,health and psychological needs.
 12. Diversity,Disadvantage,RightsandEquity:Policies,Legislation,Stat egies and Programmes for Intervention and Inclusion
 13. Parenting and Society; Counseling for optimal child development.
 14. Research Methods in Child Development
-

24. PhD in Home Science (PHDHC)

- A. Elective Course: Community Resource Management and Extension (8 Credits)
Communication for Development (C4D) ICT for Development Gender and Development
Corporate Social Responsibility Capacity Building – Training, Advocacy and
Development Entrepreneurship and Innovations Programme Management and
Development Consumer Studies Sustainable Development – Policies and Programmes
Resource Management Extension Education Ergonomics and Design Learning outcomes:
- Building systematic, methodological and comprehensive gain in knowledge in the field of Community Resource Management and Extension.
 - Enhancing research skills in the areas of: participatory and innovation communication strategies, resource management, product development; extension management and sustainable development of communities.
 - Preparing a cadre of professionals for planning and implementing various programmes in the development sector
-
- B. Compulsory Course: Research Methodology (8 Credits) Introduction to Research Ethics in Research Research Methods and Approaches Conceptualization and Research Theory building Research Design – Qualitative and Quantitative Designing Research Proposal Methods of Sampling, Techniques of Data Collection Tool Construction – Reliability, Validity and Standardisation Statistical Methods (including Hypothesis Testing – parametric and non-parametric tests) Data Analysis, Interpretation and Report Writing Scientific Writing and Publishing Learning outcomes:
- Developing research competencies in the field of Home Science.
 - Enhancing analytical abilities and strengthening research through research on community mobilization, participatory development, development communication extension and resource management.
 - Raising standards of the profession of Home Science through quality research and at the same time promoting responsible citizenship.

25. PHD in Rural Development

Paper - 1

Research Methodology

1. Foundations of Research: Meaning, Objectives, Motivation, Utility. Concept of theory, empiricism, deductive and inductive theory. Characteristics of scientific method – Understanding the language of research – Concept, Construct, Definition, Variables and its types, Review of Literature, philosophy of research.
2. Problem Identification & Formulation – Research Question – Investigation Question – Measurement Issues – Hypothesis –Qualities of a good Hypothesis – Null Hypothesis & Alternative Hypothesis. Hypothesis Testing – Logic & Importance
3. Research Design: Concept and Importance in Research – Features of a good research design – Exploratory Research Design – Concept, Types and Uses, Descriptive Research Designs – Concept, Types and Uses. Experimental Design: Historical Research.
4. Qualitative and Quantitative Research: Qualitative Research – Quantitative Research – Concept of measurement, causality, generalization, replication. Mixed Methods.
5. Measurement: Concept of measurement- Problems in measurement in research – Validity and Reliability. Levels of measurement – Nominal, Ordinal, Interval, Ratio.
6. Sampling: Concepts of Statistical Population, Sample, Sampling Frame, Sampling Error, Sample Size. Characteristics of a good sample. Probability and nonprobability sampling, Determining size of the sample – Practical considerations in sampling and sample size, methods of data collection.
7. Data Analysis: Univariate analysis (frequency tables, bar charts, pie charts, percentages), measures of central tendency, Dispersion, correlation, T-test, Chi-square Test, content analysis, narrative analysis, thematic analysis, grounded theory.
8. Steps of writing Research Proposal, writing a Research Report.

Paper - 2

Rural Development

1. **Rural Development in India** – Rural society and economy, concepts & strategies of rural development, agrarian issues, community development, rural development administration, land reforms Panchayati Raj, cooperatives, rural credit and banking, dynamics of change in rural India, Indian experiments of rural development (Mahatma Gandhi, Nanaji Deshmukh, Anna Hazare).

2. **Rural Development Programmes** – Poverty alleviation, wage and self employment programmes, rural basic services and infrastructure, natural resources management and environment. Mahatama Gandhi National Rural Employment Guarantee Act.
3. **Rural Development Planning and Management** – Planning process, multi-level planning, district planning and grass roots level planning; issues in management of rural development project, project appraisal-financial feasibility, economic feasibility and technical feasibility, monitoring and evaluation of projects. Voluntary action – voluntary efforts in rural development, voluntary agency administration social action, formation and strengthening of voluntary organisation.
4. **Rural Social Development** – Development of Rural Women – rural women – status and strategies, education and training, health and nutrition, empowerment, Development of Rural Children – rural children – situation, health and nutrition, education, Development of Scheduled Castes, Scheduled Tribes and Other Under Privileged Groups – development of SCs, STs, bonded labourers, artisans and landless labourers, policies and social legislations on children, women, SCs and STs and disadvantaged.

26. **Ph.D in Social Work**

Syllabus for Entrance Examination for Admission of Ph.D. in Social Work

Part –A: Research Methodology

- ☐ Basics of research in social work
- ☐ Research methods in social work
- ☐ Tools and methods of data collection
- ☐ Data processing and analysis

Part –B: Social Work

- ☐ Origin and Development of Social Work
 - ☐ Professional Social Work: Indian Perspectives
 - ☐ Basic Social Science Concepts
 - ☐ Social Work and Social Development
 - ☐ Social Work Practicum and Supervision
 - ☐ Social Work Research
 - ☐ Social Work Practicum
 - ☐ Case Work and Counseling: Working with Individuals
 - ☐ Social Group Work: Working with Groups
 - ☐ Community Organization Management for Community Development
-

1. शोध प्राविधि - शोध का उद्देशीय और आलोचना शोध के विविध प्रविधियों
2. हिंदी साहित्य का इतिहास परिस्थितियों प्रवृत्तियों एवं प्रमुख सहित्यकार
3. आदिकालीन एवं मढ़ियाकलिन कविता
4. आधुनिक हिंदी कविता (छायावाद, प्रगतिवाद, प्रयोगवाद)
5. नाटक एवं अन्य गद्य विधायें (स्कंदगुप्त - जयशंकर प्रसाद, आधे - अधूरे - मोहन राकेश, अतीत के चलचित्र - महादेवी वर्मा, किन्नर देश के ओर - राहुल सांकृत्यायन, अदम्य जीवन - रांगेय राघव, अशोक के फूल और अन्य निबंध - हजारी प्रसाद दिव्वेदी, जूठन - ओमप्रकाश वाल्मीकि)
6. हिंदी उपन्यास (गोदान, बाणभट्ट के आत्मकथा, मैला आँचल, महाभोज), हिंदी कहानी (प्रेमचंद के कहानियाँ, मानसरोवर खंड - 1)
7. भाषा विज्ञान और हिंदी भाषा
8. साहित्य सिद्धांत और समालोचन (काव्य लक्षण, काव्य प्रयोजन, काव्य हेतु, रस सिद्धांत, साधारीकरण . प्लेटो, अरस्तु, लाजाइनसए, क्रोचे, टी . एस . इलियट, आई . ऐ . रिचर्डस, नई समीक्षा, मनोविश्लेषणवादी आलोचना, मार्क्सवादी आलोचना, अस्तित्ववाद, आधुनिकतावाद, उत्तर आधुनिकता, दलित साहित्य और चिंतन (डॉ. आंबेडकर, ज्योतिबा फुले), अस्मितामूलक विमर्श.