Knowledge Consortium of Gujarat

Department of Education, Government of Gujarat

No. KCG/NEP-2020/2023-24/ 1149

Date: 23/08/2023

To,
The Vice Chancellor,
All Universities,
Gujarat State

Subject: Regarding clarification/addition of certain contents/subject topics in Standard Operating Procedure (SOP)

Dear Sir/Ma'am,

Education Department, Government of Gujarat had released a handbook of **Standard Operating Procedure (SOP) on 26/07/203 for all HEIs of Gujarat state for effective implementation of NEP-2020,** approved by the Hon'ble Education Minister of Gujarat State.

It is to draw your kind attention that after discussion and getting feedback from stakeholder, there are certain clarification/addition on following points in the SOP which was issued on dated 26/07/2023. All the new clarification/addition of contents/subject topics are highlighted in Maroon font color in the Annexure, which is attached with this letter.

Sr. No.	Chapter	Points	Sub-points	Contents
01	3	3.3	3.3.1	Disciplinary/ Interdisciplinary Major (Core) Courses
02	3	3.3	3.3.2	Disciplinary/Interdisciplinary Minor (Elective) Courses
03	3	3.3	3.3.3	Multidisciplinary Courses
04	3	3.3	3.3.4	Ability Enhancement Course (AEC)
05	3	3.3	3.3.5	Skills Enhancement Courses (SEC)
06	3	3.3	3.3.6	Value Added Course (VAC)
07	3	3.8	-----	Levels of Courses and Course Coding
08	7	7.7	-----	Models of evaluation
09	7	7.11	-----	Letter Grades and Grade Points
10	9	9.1	-----	Credit Weightage
11	9	9.5	9.5.2	Model Curriculum of IKS under VAC

The above changes will be effective as part of existing SOP and applicable to execute in all HEIs of Gujarat State. With addition of these changes in Gujarati version, new booklet in printed form will be dispatched to you shortly.

I request you to note the above changes and disseminate the additional information at your university, affiliated institutions, students, and stakeholders to add as the part of implementation. All these changes are to be considered authentic and integrated part of SOP.

Thanking You

Prof. A. U. Patel,
Advisor, KCG
Former Vice Chancellor,
Gujarat University

Attachments:
Annexure: clarification/addition of contents/subject topics
Copy to:
1. PA to Education Minister, Swarnim Sankul-1, Gandhinagar
2. PA to Minister of State, Swarnim Sankul-1, Gandhinagar
3. PA to Principal Secretary, (Higher and Technical Education), New Sachivalay, Gandhinagar
4. PA to Director, (Higher Education), Dr. Jivraj Mehta Bhavan, Gandhinagar
5. PA to Commissioner, (Technical Education), Karmayogi Bhavan, Gandhinagar
6. Registrar, All Universities, Gujarat

3.3.1 Disciplinary/ Interdisciplinary Major (Core) Courses (68/92 Credits)

The students are expected to comply with a particular discipline/ field/ domain. Course/ Subject that is mandatory for a student to study as a core requirement is termed as Major (Core) Course. This course would provide opportunity for a student to pursue in-depth study of a particular subject or discipline. Students may be allowed to change major within the broad discipline at the end of the second semester by giving her/ him sufficient time to explore interdisciplinary courses during the first year. Major courses may be in Botany, Zoology, Chemistry, or a combination of these three courses (i.e., life science).

At the end of the second semester, students can decide either to continue with the chosen major or request a change of major provided he fulfils the eligibility criteria for changing stream.

The Minor courses include vocational courses which will equip the students with job-oriented skills.

Change of Major: Students can opt for a change of major within the broad discipline (Natural and Physical Sciences, Mathematical, Statistics, and Computational Sciences, Library, Information and Media Sciences, Commerce and Management, and Humanities and Social Sciences) at the end of the first year.

A student, who has planned to pursue B.Sc. Physics in first year, if he/ she wants to change to B.A. Hindi after one year of study, institute can allow him to continue to pursue his/her study in B.A. Hindi, provided the fulfilment of entry eligibility criteria, availability of seats, assessment of capacity of students, and by providing the required extra course/ bridge courses (a student may be suggested to attend the ongoing classes/ extra classes which he has missed in 1st year). After three/ four years of study, he/ she will be awarded with UG Degree/ Honours/ Honour with research in Hindi.

If he/ she exits after 1st year of study in B.Sc. Physics, he will be awarded UG Certificate in Physics.

Single Major/Double Major:

Bachelor's Degree Programmes with Single Major: A learner must secure a minimum 50% of total credits (68/92 credits) from the major discipline courses for the 3-years/4-years bachelor's degree to be awarded a single major degree.

For example, in a 3-year UG programme, total number of credits to be earned is 132, a student of Economics with a minimum of 66 credits will be awarded a B.Sc. in Economics with a single major. Similarly, in a 4-year UG programme, total number of credits to be earned is 176, a student of Economics with a minimum of 88 credits will be awarded a B.Sc. (Honours/Honours with Research) in Economics in a 4-year UG programme with single major.

Bachelor's Programmes with Double Major: A learner must additionally secure a minimum 40% of total credits (53/70 credits) from the second major discipline specific courses for the 3-years/4-years bachelor's degree to be awarded a double major degree. In short, student can opt two major (core) subjects as per their own choices.

A1

The main reason for double major study is to have a grip over two subjects which would give the student an edge in the job market. Moreover, in order to study one discipline, a student must have prior knowledge of another discipline.

For example, the knowledge of mathematics is important to the study of economics. In a 3-year UG programme, the total number of credits to be earned is 132, a student of Mathematics with a minimum of 53 credits will be awarded a double major B.Sc. in Economics with Mathematics. Similarly, in a 4-year UG programme, the total number of credits to be earned is 176, a student of Mathematics with a minimum of 70 credits will be awarded a double major B.Sc. (Honours/Honours with Research) in Economics with Mathematics in a 4-year UG programme.

Table 3: Stream-wise Major Courses

Sr. No.	Discipline	Courses (Major)
01	Arts, Humanities and Social Science	1. Ancient and Modern languages 2. Arabic 3. Archaeology and Ancient History 4. Art History 5. Buddhist Studies 6. Classical Studies 7. Constitutional & Legal Order 8. Dance 9. Defence and Strategic Studies 10. Design 11. Earth Science 12. Economics 13. Education 14. English 15. Entrepreneurship 16. Environment & Legal Order 17. Fine Arts 18. Food & Nutrition 19. French 20. Future and Development Study 21. Geography 22. Gujarati 23. Hindi 24. History 25. History and Tourism 26. Home Science 27. Human Rights and Duties 28. Indian Classic Music 29. Indian Culture 30. Indian Institute of Sustainability 31. Indian Languages (8th Schedule of Indian Constitution) 32. Journalism 33. Labour Welfare 34. Language, Culture and Communication 35. Liberal Art Education

Sr. No.	Discipline	Courses (Major)
		36. Library and Information Science
		37. Library Science
		38. Linguistics
		39. Literature
		40. Manuscriptology
		41. Marathi
		42. Mathematics
		43. Media Studies
		44. Media and Communication
		45. Music
		46. Musical Instrument
		47. Painting
		48. Paleography
		49. Pali, Prakrit & Apabhransha
		50. Performing Arts
		51. Philosophy
		52. Physical Education
		53. Political Science
		54. Professional Training
		55. Psychology
		56. Public Administration
		57. Russian
		58. Sanskrit
		59. Sculpture
		60. Sindhi
		61. Social Work
		62. Sociology
		63. Urdu & Persian
		64. Visual Arts
02	Commerce and Management	1. Accountancy
		2. Accounting and Finance
		3. Advanced Business Studies
		4. Aviation, Aerospace, Hospitality & Travel
		5. Banking, Financial Service and Insurance
		6. Business Administration
		7. Business Economics
		8. Business Intelligence
		9. Business Law
		10. Business Management
		11. Commerce and Business Management
		12. Company and Compensation Law
		13. Cooperative Management and Rural Studies
		14. Economics
		15. Entrepreneurship and Leadership
		16. Finance And Financial Market
		17. Financial Markets
		18. Gastronomy Management

A3

Sr. No.	Discipline	Courses (Major)
		19. General Management
		20. Global Business Management
		21. Hospital and Healthcare Management
		22. Hospitality, Aviation and Management
		23. Human Recourse Management
		24. Indian Institute of Sustainability
		25. International Business
		26. Labour Management
		27. Leadership Management
		28. Management Studies
		29. Marketing Management
		30. Maritime Management
		31. Mass Communication
		32. Media, Film and Mass Management
		33. Operation Management
		34. Professional Training
		35. Project Management
		36. Public Policy and Governance
		37. Risk Management
		38. Sales and Marketing
		39. Sports, Leisure and Tourism Management
		40. Statistics
		41. Supply Chain and Logistic Management
		42. Telcom Management
		43. Tourism and Travel Management
03	Science	1. Actuarial Science
		2. Agriculture
		3. Animation, IT-IMS & Mobile Applications
		4. Anthropology
		5. Applied Mathematical
		6. Biochemistry
		7. Biochemistry & Forensic
		8. Bioinformatics and Computational Biology
		9. Biological Physics
		10. Biochemistry
		11. Biostatstics
		12. Biomedical Science
		13. Bionanotechnology
		14. Biotechnology
		15. Botany
		16. Botany, Bioinformatics and Climate Change
		17. Cell and Microbiology
		18. Chemistry
		19. Clothing and Textile
		20. Computer Science
		21. Digital health and Data Science
		22. Economics

Sr. No.	Discipline	Courses (Major)
		23. Earth Science
		24. Electronic Science
		25. Energy and Environment
		26. Environmental Science
		27. Extension and Communication
		28. Family and Community Resource Management
		29. Fashion Technology
		30. Food and Nutrition
		31. Food Technology
		32. Forensic Science
		33. Geography
		34. Geology
		35. Hospitality
		36. Human Development and Family Studies
		37. Human Physiology
		38. Indian Institute of Sustainability
		39. Information Technology
		40. Journalism and Communication
		41. Life Science
		42. Mathematical Science
		43. Mathematics
		44. Medical/Life Science
		45. Microbiology & Biotechnology
		46. Molecular Genetics
		47. Operational Research
		48. Performing Arts
		49. Plant Biotechnology
		50. Physical Science
		51. Physics, Electronics & Space
		52. Science and Application
		53. Security Science
		54. Statistics
		55. Zoology & Biomedical Technology
04	Rural Study	1. Agronomy
		2. Animal Husbandry
		3. Bamboo Work
		4. Beauty and Wellness
		5. Costume Jewellery
		6. Food Processing
		7. Handloom and Handicrafts of Gujarat
		8. Horticulture and Forestry
		9. Rural Extension
05	प्राकृत साहित्य	1. प्राकृत अर्धभाग आगम ग्रंथों का परिचय (45 आगम)
		2. आगमों का व्याख्या साहित्य
		3. दिगंबर संप्रदाय के प्राचीन शास्त्र ग्रंथ

A5

Sr. No.	Discipline	Courses (Major)
		4. आगमोत्तर कालीन जैन धर्म संबंधी साहित्य
		5. प्राकृत कथा साहित्य
		6. प्राकृत औपदेसिक कथा साहित्य
		7. प्राकृत चरित्र साहित्य
		8. प्राकृत काव्य साहित्य
		9. संस्कृत नाटकों में निहित प्राकृत
		10. प्राकृत में सट्टक
		11. प्राकृत व्याकरण- छन्द, कोष तथा अलंकार ग्रंथ
		12. शास्त्रीय प्राकृत साहित्य
		13. प्राकृत में प्रमुख शिलालेख (हाथ गुफा लेखादि)
		14. प्राकृत साहित्य में कषाय
		15. प्राकृत (जैन दर्शन) में अध्यात्मसार
		16. प्राकृत (जैन साहित्य) और पर्यावरण
		17. प्राकृत में समणसुत्तं ग्रंथ
		18. जैन धर्म में कर्म सिद्धांत
06	Others	1. BCA 2. B.Lib. 3. B.Voc. 4. Social Work 5. Multimedia and Communication 6. Physical Education and Health 7. Foreign Languages

Topics of Major Course in Sanskrit language:

• वैदिक साहित्ये 1. वेद-ब्राह्मण-आरण्यक 2. उपनिषद् -प्रतिशाख्य 3. अनुक्रमणि, वेदंगादि । 4. दर्शनशास्त्रे - सांख्य, योग, न्याय, वैशेषिक, पूर्व -उत्तर मीमांसा, चार्वाक, जैन, बौद्ध, शैवादि दर्शनानि । • शास्त्रग्रंथेषु 1. व्याकरणशास्त्र 2. भाषाशास्त्र 3. अलंकारशास्त्र 4. छंदशास्त्र 5. धर्मशास्त्र 6. पुराणशास्त्र 7. अभिलेखशास्त्र	8. अर्थशास्त्र 9. नीतिशास्त्र 10. स्मृतिसाहित्य 11. वास्तुशास्त्र 12. ज्योतिषशास्त्र 13. प्रशिष्ट पद्य-गद्यसाहित्य 14. कथासाहित्य 15. आयुर्वेद 16. धनुर्वेद 17. आधुनिक संस्कृत साहित्यादि 18. आधुनिक -साहित्यशास्त्रम् 19. भाषाविज्ञानम् 20. संस्कृत शब्दकोशा: 21. आयुर्वेदग्रंथा: चरक - सुश्रुत- अष्टांगहृदयादि

A6

Inclusion of topics of Economics in B.com and BBA:

Topics in B.Com.	Topics in BBA
1. Business Economics	1. Business Economics
2. Economic Analysis	2. Global Business Environment
3. Economic Development	3. Indian Business Environment
4. Financial Economics	4. Macro Economics for Management
5. International Trade	5. Managerial Economics
6. Macro Economics	6. Market Structure
7. Managerial Economics	7. Microeconomics for Management
8. Microeconomics	
9. Public Finance	

NOTE:

- *Education Department have been added wide range of courses in Major category, but it is not restricted. All HEIs are also suggested to add invariably innovative wide range of student's choice-based courses in all discipline/streams under each category of Major, Minor, Multidisciplinary, Ability Enhancement, Value Added, Indian Knowledge System, and Skills Enhancement course basket.*
- *HEIs can also interchange the courses of same stream under Major and Minor course as per choice of the students.*
- *HEIs may introduce the courses as per demand and consultation of the local industries. (i.e., Textiles based courses in Surat, Fabric embroidery-based course in Kutchchh, Patola and Mashroo fabric based course in Patan, Baboo Craft based course in Daang etc.)*
- *Every year, HEIs may revised 30% of the course syllabus and introduce new trend in courses as per change in technologies and demand of industries.*

Vocational Education and Training

Vocational Education and Training will form an integral part of the undergraduate programme to impart skills along with theory and practical. 3 courses (12 credits) under minor category, shall be offered which will be related to the major or minor discipline or choice of the student. These courses must be aligned with National Skills Qualification Framework (NSQF).

Table 4: List of Vocational Courses

Arts	Commerce	Science
1. Artwork & Craft Making	13. Accountancy & Auditing	26. Automobile Servicing
2. Cinematography	14. Accounting & Taxation	27. Building Construction Technology
3. Event Management	15. Banking & Financial Services	28. Computer Applications
4. Fashion Designing	16. Business Administration	29. Industrial Automation
5. Film Making	17. Financial Market Management	30. Information Technology
6. Foreign Languages	18. Insurance & Marketing	31. Mechatronics
7. Graphic Designing & Animation	19. Marketing & Salesmanship	32. Operating Systems
8. Journalism/Broadcasting	20. Office Assistantship	33. Pharmaceutical Manufacturing
9. Multimedia	21. Office Secretary Training	34. Renewable Energy
10. Photography	22. Retail	35. Software Development
11. Pottery		

12. Tourism & Travel Management	23. Small & Medium Enterprises 24. Stenography & Computer Applications 25. Stock Market Trading	36. Software Engineering 37. System Analysis

Other Vocational Course:

1. Air Conditioning and Refrigerator 2. Bakery and Confectionery 3. Beauty Culture 4. Dairy Farming 5. Food Processing 6. Healthcare Management	7. Hotel Management 8. Information Security 9. Library Management 10. Medical Diagnostic 11. Medical Laboratory Technology 12. Mobile Repairing 13. Poultry Farming	14. Retail Management and IT 15. Retails Service and Operations 16. Sales and Marketing 17. Sports Management 18. Tailoring 19. TV Programme and News Production 20. Web Designing

Courses for Person with Disability (PwD):

1. Assistant-Plant caretaker (Gardner)- (Divyanjan)
2. Food & Beverage Service Associate-(Divyangjan)
3. Hospitality Associate (Divyangjan)
4. Indian Sign Language Interpreter
5. Job Coach for Inclusivity
6. PwD Assistive Aids Repair Technician
7. Solar desiccation Assistant- food and vegetables (Divyangjan)
8. Trainer -Persons with Disability
9. Dairy Farming
10. Hand Embroiderer
11. Plant biscuit production specialist
12. Baking Technician
13. Handmade Gold and Gems-set Jewellery - Polisher and Cleaner
14. Handmade Bamboo Agarbatti Stick Making
15. Bamboo Utility Handicraft Assembler
16. Stitching Operator (Footwear)
17. PwD Assistive Aids Repair Technician
18. Food and Beverage Service Steward
19. Two shaft Handloom Weaver
20. Domestic IT helpdesk Attendant

3.3.2 Disciplinary/Interdisciplinary Minor (Elective) Courses: (24/32 Credits)

It is very specific or specialized or advanced or supportive to the discipline/ subject of study or which provides an extended scope, or which enables exposure to some other discipline/ subject/ domain or nurtures the candidate's skills. It may be same or other discipline specific.

Students will have the option to choose courses from disciplinary/interdisciplinary minors and skill-based courses relating to a chosen vocational education programme. Students who take enough

courses in a discipline or an interdisciplinary area of study other than the chosen major will qualify for a minor in that discipline or in the chosen interdisciplinary area of study. A student may declare the choice of the minor and vocational stream at the end of the second semester, after exploring various courses.

50% of the total credits from minors must be secured in the relevant subject/discipline and another 50% of the total credits from a minor can be earned from any discipline as per students' choice.

Minor Selection for B.Sc. Physics Programmes may be (8 subjects for 32 Credits):

Discipline Specific Minor (50%)	Other Discipline Specific Minor (50%)
1. Nuclear and Particle Physics	1. Organic chemistry
2. Physics of Semiconductor Devices	2. Medicinal chemistry
3. Atomic and molecular Physics	3. Biodiversity
4. Mathematical Physics	4. Biochemistry and Cellular basis of life

The minor courses may be Statistics, Music, Mathematics, Art, or a combination of courses (botany, zoology, chemistry in case of life science).

List of Minor Courses:

1. Abhidhamma (Pali)
2. Abnormal Psychology
3. Access to Justice
4. Administration Theory
5. Administrative Law
6. Animal Genetics & Breeding
7. Animal Husbandry
8. Animal Nutrition
9. Animation
10. Anthropology Human Genetics
11. Art of C Programming
12. Arts and Culture: Towards a New Management Paradigm
13. Aspects Of Biochemical Engineering
14. Banking and Financial Markets
15. Banking and Financial Markets: A Risk Management
16. Basics of Biology
17. Basics of Digital Marketing
18. Bhasha Proudyogiki ka Parichay
19. Buddhist Philosophy
20. Business Planning & Project Management
21. Business Environment
22. Cell Biology
23. Cell Biology: Cellular organization, division, and processes
24. City & Metropolitan Planning

110. Indian Economy: Some Contemporary Perspectives
111. Indian Literature in English
112. Indian Political Thought
113. Information Security and Cyber Forensics
114. Innovation and Information Technology Management
115. Innovation and start up policy
116. Irrigation Engineering
117. Irrigation Sources Management
118. Junior Course in Kathak
119. Law of Banking, Insurance and Consumer Protection in India
120. Learning, Teaching and Assessment
121. Linear Programming
122. Macroeconomics
123. Management Accounting
124. Management: Entrepreneur Development
125. Managerial Economics
126. Managing Innovation
127. Marketing Management
128. Marketing Essentials
129. Material and Energy Balances
130. Maternal Infant Young Child Nutrition
131. Medical Biomaterials
132. Metabolic Engineering
133. Metamorphic Petrology & Thermodynamics

A9

A10

70. Emergence of Early Historic India (300BCE-750CE)
71. Environmental Communication
72. Environmental Economics
73. Environmental Law
74. Enzyme Sciences and Technology
75. Family and Community Nutrition
76. Farm Management
77. Film & Literature
78. Film Studies
79. Finance for Non-Finance
80. Financial Accounting and Analysis
81. Fitness Management
82. Food Microbiology and Food Safety
83. Forests and their Management
84. Functional Foods and Nutraceuticals
85. Fundamentals of Banking and Insurance
86. Fundamentals of Financial Management
87. Fundamentals of Insurance
88. Fundamentals of Rural sociology and Educational Psychology
89. General Microbiology
90. Genetics and Genomics
91. Geography of India
92. Graph Theory
93. Growth & Development Economics
94. Hindi Bhasha ka Udbhav aur Vikas
95. Hindi Gadya Sahitya Katha Sahitya
96. Hindi Sahitya ka Itihaas
97. History of Indian Buddhism
98. Home Science - Extension and Communication Management Level
99. Horticulture
100. Horticulture Farm management
101. Hospitality Industry in Tourism
102. Host-Pathogen Interaction (Immunology)
103. Human Genetics
104. Human Molecular Genetics
105. Human Population Genetics
106. Human Resource Management
107. Human Rights Law and Criminal Justice
108. ICT Skills in Education
109. Immunology

179. Retail and Channel Management
180. Riemann Integration and Series of Functions
181. RNA Biology
182. Rural Extension
183. Rural Sociology
184. School Counselling
185. School Organization: Administration & Management
186. Services Marketing: Concepts & Applications
187. Silkworm rearing and reeling technology
188. Social Psychology
189. Social Reconstruction
190. Society and Media
191. Sociology
192. Statistical Methods for Psychological Research
193. Strategic Management
194. Strategies for Sustainable Design
195. Structural Biology
196. Study of short story form modern Indian writers in English
197. Textiles & Quality Analysis
198. Thermodynamics for Biological Systems: Classical and Statistical Aspect
199. Total Productive Maintenance
200. Valuation and Creating Sustainable value
201. Virology
202. Water Resources and Watershed Management
203. Wildlife and its Conservation
204. Women, Power and Politics
205. World Religion (Hindu)
206. World Religion (Hindu, Jain, Buddh, Sikh, Christian, Islam, Parsi)
207. Young Child Nutrition
208. Youth, Gender and Identity
209. અર્વાચીન ગદ્ય કૃતિ- તુલસી ક્યારો
210. અર્વાચીન ગદ્યકૃતિ - 'સાચાં સમણાં'
211. અર્વાચીન ગુજરાતી સાહિત્યનો ઈતિહાસ
212. અર્વાચીન સાહિત્ય સ્વરૂપ ની કૃતિ- "જનમટીપ" - પન્નાલાલ પટેલ
213. આધુનિક હિન્દી કહાની સાહિત્ય
214. આધુનિક હિન્દી ઉપન્યાસ

	215. આધુનિક હિન્દી નાટક કાદમ્બરીની માં
	216. ગ્રંથકારનો અભ્યાસ: ઉમાશંકર જોશીની શ્રેષ્ઠ વાર્તાઓ
	217. મધ્યકાલીન પ્રશિષ્ટ કૃતિ " પ્રેમ પચ્ચીસી"
	218. સામાજિક ઉપન્યાસ
	219. સુન્દરમ ની શ્રેષ્ઠ વાર્તાઓ
	220. હિન્દી કી વિભિન્ન ગધ વિધાઓ કા ક્રમિક વિકાસ
	221. હિન્દી ખંડ કાવ્ય
	222. હિન્દી દ્રશ્ય વિધા
	223. હિન્દી નાટક

Topics of Minor Course in Sanskrit language:

1. वैदिकसाहित्य	8. नाट्यशास्त्रीय पारंपरिकग्रंथाः
2. स्मृतिसाहित्य	9. अर्थशास्त्र, धर्मशास्त्रस्य ग्रंथाः
3. स्तोत्रसाहित्य	10. छंदशास्त्र
4. मुक्तकसाहित्य	11. अभिलेखशास्त्र
5. कथासाहित्य	12. नीतिशास्त्रग्रन्थाः
6. नाट्यसाहित्य	13. पुराणसाहित्य
7. काव्यशास्त्रीय पारंपरिकग्रंथाः	14. गद्यसाहित्य

3.3.3 Multidisciplinary Courses (12 Credits)

All UG students are required to undergo 3 introductory-level courses (4 credits of each course) relating to any of the broad disciplines given below. These courses are intended to broaden the intellectual experience and form part of liberal arts and science education. Students are not allowed to choose or repeat courses already undergone at the higher secondary level (12th class) in the proposed major and minor courses of the same level under this category.

Table 5: List of Multidisciplinary Courses

Category	Courses
1. Natural and Physical Science (Biology, Botany, Zoology, Biotechnology, Biochemistry, Chemistry, Physics, Biophysics, Astronomy and Astrophysics, Earth and Environmental Sciences)	1. Agricultural Policy: Formulation, Components, Process, Implementation and Comparative Analysis 2. Agriculture Business Management 3. Agricultural Geography 4. Agriculture Chemistry 5. Agriculture Economics 6. Animal Biotechnology 7. Ancient Indian Inventions and Modern Science in Vedas 8. Application in Organic Synthesis 9. Applied Econometrics

Category	Courses
	10. Applied Entomology
	11. Applied Statistics and Econometrics
	12. Approximate Methods in Quantum Chemistry
	13. Atmospheric and Space Sciences
	14. Atmospheric Physics
	15. Atomic And Molecular Physics
	16. Biochemistry
	17. Bioconjugation methods and applications
	18. Biodiversity and Conservation
	19. Bioinorganic Chemistry
	20. Biophotonics
	21. Bioelectrochemistry
	22. Bioengineering: An Interface with Biology and Medicine
	23. BioInformatics: Algorithms and Application
	24. Biointerface Engineering
	25. Biomechanics
	26. Biomolecules: Structure, Function in Health and Disease
	27. Bioreactor Design and Analysis
	28. Biostatistics and Design of experiments
	29. Biostatistics and Mathematical Biology
	30. Biotechnology in Animals
	31. Challenges to Sustainable Development
	32. Characterization of Polymers, Elastomers and Composites
	33. Chemical kinetics and transition state theory
	34. Chemical Thermodynamics and Kinetics
	35. Chemistry Of Main Group Elements
	36. Climate Change and Sustainable Development
	37. Commercial Fruit Production: Pomegranate & Guava
	38. Condensed Matter Physics
	39. Cooling Technology: Why and How utilized in Food Processing and allied Industries
	40. Cooperatives and Farmers' Organizations
	41. Co-Ordination Chemistry (Chemistry of Transition Elements)
	42. Data Analysis for Biologists
	43. Ecology, Environment and Tourism
	44. Economics of Food
	45. Ecosystem and Natural Resources
	46. Effective Engineering Teaching in Practice
	47. Electronic Theory of Solids
	48. Elementary Electrochemistry
	49. Engineering Statistics
	50. Entrepreneurship Essentials

Category	Courses
	51. Environmental Engineering and Science - Fundamental and Sustainability Concepts
	52. Environmental Impact Assessment
	53. Environmental Chemistry and Microbiology
	54. Environmental Impact Assessment for Environmental Health
	55. Environmental Occupational Hazards
	56. Environmental Sustainability
	57. Essentials of Biomolecules: Nucleic Acids and Peptides
	58. Essentials of Oxidation, Reduction and C-C Bond Formation
	59. Evaluation of Textiles Materials
	60. Experimental Biochemistry
	61. Experimental Physics
	62. Extraction techniques
	63. Experimental Stress Analysis
	64. Fluid Dynamics for Astrophysics
	65. Food laws and standards
	66. Fluid Mechanics for Chemical and Biomedical Engineers
	67. Fundamentals of Spectroscopy
	68. Fundamentals of Bioinformatics
	69. Fuzzy Logic and Neural Networks
	70. Geomorphic Processes: Landforms and Landscapes
	71. Groundwater hydrology and management
	72. Group Theory methods in Physics
	73. Healthcare Law
	74. India in the World
	75. Indian Agricultural Development
	76. Industrial Inorganic Chemistry
	77. Inorganic Chemistry
	78. Interactomics: Basics & Applications
	79. Introduction to Research
	80. Management of Medical Emergencies in Dental Practice
	81. Mathematical Methods in Physics
	82. Mathematical Economics
	83. Mathematical Methods for Biologists
	84. Medicinal Chemistry
	85. Mental Health & Clinical Psychiatry
	86. Molecular Spectroscopy: A Physical Chemist's perspective
	87. Molecular Thermodynamics
	88. Nanobiotechnology Enabled Point-of-Care Devices
	89. Nanoscience in drug development
	90. Nanotechnology: Fundamentals and Applications

Category	Courses
	91. Natural Hazards
	92. New Spinning Technologies
	93. Non-conventional energy Resources
	94. Novel Technologies For Food Processing and Shelf-Life Extension
	95. Nuclear and Radiochemistry
	96. Nuclear Astrophysics
	97. Offshore Structures Under Special Environmental Loads Including Fire Resistance
	98. Oral Biology
	99. Organic Chemistry
	100. Organic Retrosynthesis: Problem Solving Approach
	101. Organometallic Chemistry
	102. Ornithology
	103. Outcome Based Pedagogic Principles for Effective Teaching
	104. Pericyclic Reactions and Organic Photochemistry
	105. Pharmaceutical products
	106. Physical Education and Life
	107. Physics of Biological Systems
	108. Physics of Linear and Nonlinear Optical Waveguides
	109. Physics through Computational Thinking
	110. Poultry Farming
	111. Quantum Field Theory (Theory of Scalar Fields)
	112. Quantum Mechanics
	113. Quantum Transport
	114. Reactive Intermediates Carbene and Nitrene
	115. Reactivity of Organic Compounds and Intermediates: A Problem-solving Approach
	116. Reliability Engineering
	117. Research Methodology in Natural Sciences
	118. Roadmap for patent creation
	119. Rural Water Resources Management
	120. Social Responsibility and Community Engagement
	121. Sociology of Education
	122. Sociology of Gender
	123. Sociology of Media
	124. Soil And Water Conservation Engineering
	125. Soil Science and Technology
	126. Solar Water Pumping System
	127. Statistical Mechanics
	128. Strategies and Models for Sustainability
	129. Superconductivity

Category	Courses
	130. Sustainable Management of Biodiversity
	131. Symmetry and Group Theory
	132. Symmetry, Stereochemistry and Applications
	133. Teaching And Learning in Engineering (TALE)
	134. Testing of Functional and Technical Textiles
	135. Textile Printing Technology
	136. Textile Product Design and Development
	137. Textured Yarn Technology
	138. The evolution of the Earth and life
	139. Theory of Yarn Structure
	140. Thermal Physics
	141. Thermodynamics: Classical and Statistical Approaches
	142. Transition Metal Organometallic Chemistry
	143. Transition Metal Organometallics in Catalysis and Biology
	144. Ultrafast laser spectroscopy
	145. Urban Services Planning
	146. Virology and Epidemiology
	147. You and Your Food
	148. Your Food and Its Utilization
2. Mathematics, Statistics, and Computer Applications	1. 3D Printing
	2. Additive Manufacturing (AM) or Additive Layer Manufacturing (ALM)
	3. Aeroecology: Biodiversity with Radar
	4. Affective Computing
	5. Algebra
	6. Algebraic Combinatorics
	7. Algorithms: Design and Analysis
	8. Android/Window/IOS Mobile Application Development
	9. Applied Linear Algebra in Artificial Intelligence and Machine Learning
	10. Applied Multivariate Statistical Modelling
	11. Architectures and Programming
	12. Artificial Intelligence (AL): Knowledge Representation and Reasoning
	13. Artificial Intelligence: Overview for Enterprise
	14. Artificial Intelligence and Machine Learning for enterprise
	15. Artificial Intelligence application in people management
	16. AI, InsurTech, and Real state Technology
	17. Augmented Reality (AR) and Video Streaming Service
	18. Automata, Languages and Computation
	19. Basic Linear Algebra
	20. Basic Real Analysis
	21. Big data and Analytics

Category	Courses
	22. Blockchain and its Applications
	23. Blockchain Architecture
	24. Blockchain Cloud Computing
	25. Business Intelligence
	26. C algebras and spectral theorem
	27. Circuit Complexity Theory
	28. Cloud Application
	29. Cloud Computing and Distributed Systems
	30. Cloud IoT Edge Machine Learning
	31. Compiler Design
	32. Computational Mathematics with Sage Math
	33. Computational Techniques
	34. Computer Architecture
	35. Computer Networks and Internet Protocol
	36. Computer Science
	37. Computing Power
	38. Constrained and Unconstrained Optimization
	39. Corrosion Protection Methods
	40. Cryptography
	41. Cyber Hygiene
	42. Cyber Physical Systems
	43. Cyber Security, Tools, Techniques and Counter Measures
	44. Data Analysis
	45. Data Analytics with Python
	46. Data Base Management System
	47. Datafication
	48. Data Mining
	49. Data Science
	50. Data Science for Health Information
	51. Data Science Perspective on Pandemic Management
	52. Data Visualization with Tableau Project
	53. Decentralized Applications (Dapps)
	54. Deep Learning
	55. Design and analysis of algorithms
	56. Design and Development
	57. Digital Governance
	58. Digital Health
	59. Digital Marketing
	60. Digital Payment System
	61. Digital Technology and the future of manufacturing

Category	Courses
	62. Digital Transformation
	63. Digital Transformation in Financial Service
	64. Digital Trust
	65. Discrete Mathematics
	66. Discrete Structures
	67. Drone Technology
	68. Dynamical System and Control
	69. Edge Computing
	70. Electronic and Communication
	71. Electric Vehicle and Mobility
	72. Embedded Systems Design
	73. Engineering Mathematics
	74. Essentials Of Data Science with R
	75. Ethical Hacking
	76. Ethereum Developer Blockchain
	77. FinTech: Foundations, Payments, and Regulations
	78. Fourier Analysis and its applications
	79. Full Stack Development
	80. Functional Analysis
	81. Galois Theory
	82. Genomics
	83. Graph Theory
	84. Hardware and Networking
	85. Hardware Security
	86. Horizontal and Vertical Integration
	87. Hyperbolic Geometry
	88. Hyperledger Fabric Blockchain
	89. Impact of Technology
	90. India's National Security
	91. Industry 4.0 And Industrial Internet of Things
	92. Industrial IoT Markets and Security
	93. Information Technology
	94. Information System: Auditing, Controls and Assurance
	95. Integral and Vector Calculus
	96. Internet of Behaviour
	97. Internet of Things (IoT) and Blockchain
	98. International Security Management
	99. IoT wireless and Cloud Computing
	100. IT- Networking
	101. IT Infrastructure

Category	Courses
	102. Justice and Equity in Technology Policy
	103. Linear Algebra
	104. Linux Cloud and DevOps
	105. Machine Learning
	106. Machine Learning essential with Python
	107. Mathematical Modelling: Analysis and Applications
	108. Mathematical Optimization
	109. Mobile Repairing
	110. Multivariable calculus
	111. Natural Language Processing
	112. Numerical Analysis
	113. Numerical Linear Algebra
	114. Numerical Methods: Finite difference approach
	115. Object Oriented System Development Using UML, Java and Patterns
	116. Optimisation for Machine Learning: Theory and Implementation
	117. Ordinary and Partial Differential Equations and Applications
	118. Parallel programming with Open MP and MPI
	119. Partial Differential Equations (PDE)
	120. Pedagogy of Mathematics
	121. Planning and Design of Sanitation System and Technology
	122. Point-Set- Topology
	123. Power Distribution and Automation
	124. Predictive Analytics - Regression and Classification
	125. Privacy and Security in Online social media
	126. Privacy law and Data Protection
	127. Probabilistic Methods in PDE
	128. Probability And Statistics
	129. Probability Theory
	130. Problem Solving Through Programming In C
	131. programming in C
	132. Programming In Java
	133. Programming in Modern C++
	134. Programming Software (Java, C, C+, C++, PHP)
	135. Programming, Data Structures and Algorithms Using Python
	136. Programming with IoT Boards
	137. Programming with Cloud IoT Platforms
	138. Python for Data Science
	139. Quantum Algorithms and Cryptography
	140. Quantum Computing
	141. Queueing Theory

Category	Courses
	142. Randomized Methods in Complexity
	143. Reinforcement Learning
	144. Robotics
	145. Robotics Process Automation (RPA)
	146. Science and Technology
	147. Scientific Computing using Matlab
	148. Secure Computation
	149. Smart Device and Mobile- 5G
	150. Smartphone to IoT to Big Data
	151. Social Networks
	152. Solar Cell System
	153. Soft Computing
	154. Software Development
	155. Software Testing
	156. Statistical Inference
	157. Structured Query Language (SQL) using SAS
	158. Supply Chain Finance and Blockchain Technology
	159. Systems and Usable Security
	160. Telecommunication
	161. The Future of Payment Technology
	162. Theory of Computation
	163. Threat Investigation
	164. Transform Techniques for Engineers
	165. Transitional Science
	166. Transmedia Storytelling
	167. User-centric Computing for Human-Computer Interaction
	168. Variational Calculus
	169. Virtual Teacher
	170. Wastewater Management
	171. Web Based Technologies and Multimedia Applications
	172. Website development Hosting
3. Library, Information, and Media Sciences	1. Advertising and Public Relations
	2. Applied Statistics
	3. Basics of Journalism
	4. Communication Skills (Library Information Science)
	5. Database and Content Organisation
	6. Digital Information Literacy
	7. Digital Media
	8. Document Processing and Organisation
	9. ICT Fundamentals

Category	Courses
	10. ICT in Libraries
	11. Information Sources and Library Services
	12. Information Sources and Services
	13. Libraries: An introduction
	14. Library Automation and Digitisation
	15. Library Information and Society
	16. Management in Tourism
	17. Management of Library and Information Centre
	18. Mass Communication
	19. Media and Information Literacy
	20. Media, Information and Empowerment
	21. Professional Development Programme
	22. Organising and Managing Information
	23. Tourism Marketing
4. Commerce and Management	1. Accounting for Managerial Decisions
	2. Advances in Strategic Human Resource Management (HRM)
	3. Agriculture Economics
	4. Application of Statistics in Economics
	5. Artificial Intelligence (AI) for Investments
	6. Basics of Event Management
	7. Behavioural and Personal Finance
	8. Business analytics and data mining Modelling using R
	9. Business Analytics for Management Decision
	10. Business Communication
	11. Business Development: From Start to Scale
	12. Business Law
	13. Business Law for Managers
	14. Business Mathematics and Statistics
	15. Business Organisation and Management
	16. Business Statistics
	17. Channel Management and Retailing
	18. Cloud Accounting
	19. Computer Application in Business
	20. Consumer Behaviour
	21. Corporate Communication
	22. Data Analysis and Decision Making
	23. Decision making with spreadsheet
	24. Design Thinking - A Primer
	25. E-Business
	26. E-Commerce

Category	Courses
	27. Econometrics
	28. Engineering Econometrics
	29. Environmental Economics
	30. Ethics In Engineering Practice
	31. Event Coordination and Control
	32. Event Planning
	33. Financial Accounting
	34. Financial Derivatives & Risk Management
	35. Financial Institutions and Markets
	36. Financial Management for Managers
	37. Financial Statement Analysis and Reporting
	38. Forensic Accounting
	39. Foundation Course in Managerial Economics
	40. Gandhian Economics and Rural Development
	41. Global Marketing Management
	42. Green Management
	43. GST
	44. Health Economics
	45. History of Statistics
	46. Human Resource Development
	47. Income Tax Law and Practice
	48. Industrial Economics
	49. Infrastructure Economics
	50. Integrated Marketing Communication
	51. Integrated Marketing Management
	52. International Business
	53. International Marketing
	54. Investment Management
	55. Leadership and Team Effectiveness
	56. Leadership for India Inc: Practical Concepts and Constructs
	57. Management Functions
	58. Management of Commercial Banking
	59. Management of Field Sales
	60. Management of Human Resources
	61. Management of Inventory Systems
	62. Managing Change in Organizations
	63. Marketing Analytics
	64. Marketing Management
	65. Marketing Research and Analysis
	66. Mathematics for Commerce

A22

Category	Courses
	67. Mergers, Acquisitions and Corporate Restructuring
	68. Modelling And Analytics for Supply Chain Management
	69. NGO Management
	70. Office Management and Secretarial Practices
	71. Operations Research
	72. Organization Theory/Structure and Design
	73. Organizational Design Change and Transformation
	74. Philosophy and Management Studies
	75. Principles of Management
	76. Principles of Marketing
	77. Probability and Statistics
	78. Production and Operation Management
	79. Quality Control and Improvement with MINITAB
	80. Quality Design and Control
	81. Research Methodology and Statistical Analysis
	82. Retail Management
	83. Rural Economics
	84. Safety and Risk Analytics
	85. Sales And Distribution Management
	86. Services Marketing: A Practical Approach
	87. Simulation of Business Systems: An Applied Approach
	88. Six Sigma
	89. Social Processes and Behaviour Issues
	90. Sportonomics
	91. Sports and Health Care Management
	92. Stochastic Processes
	93. Supply Chain Analytics
	94. System Dynamics Modeling
	95. Systems Engineering: Theory & Practice
	96. Talent Acquisition and Management
	97. Technical Communication Management
	98. Technology Forecasting for strategic decision making - An Introduction
	99. Total Quality Management
	100. Welfare Economics
5. Arts, Humanities and Social Sciences	1. American Literature & Culture
	2. Microeconomics
	3. Appreciating Hindustani Music
	4. Assamese Poetry: From Ancient to Modern Period
	5. Assessment for Learning

A23

Category	Courses
	6. Arabic Language and Culture
	7. Language Science
	8. Pattern Making and Sewing
	9. Spanish Language and Culture
	10. Basics of Translation
	11. Bhartiya Upanyas
	12. Bilingualism: A cognitive and psycholinguistic perspective
	13. Childhood and Growing Up
	14. Civil Society, Political Regimes and Conflict
	15. Communication and Extension for Sustainable Development
	16. Conflict Management, Transformation and Peace Building
	17. Conflicts and Peace: Global Perspective
	18. Consumer Protection Legislation
	19. Contemporary India and Education
	20. Contemporary Urdu Poetry
	21. Contextualizing Gender
	22. Counselling Psychology
	23. Creative Writing and Literature
	24. Design and Facilitation of E-Learning Course
	25. Development of Sociology in India
	26. Economic Growth and Development
	27. Education for Sustainable Development
	28. Educational Communication Technologies
	29. Elements of Literature and Creative Communication
	30. Emotional Intelligence
	31. Energy Resources, Economics and Environment
	32. Enhancing Soft Skills and Personality
	33. Enhancing Study Skills
	34. Ethics and Plagiarism
	35. Foundations of Heutagogy
	36. French Exchanger / Interactions
	37. Gandhi in the 21st Century
	38. Gandhi: Ecology and Sustainable Development
	39. Gandhi: The Man and His Times
	40. Gandhi's Political Thought
	41. Gandhi's Social Thought
	42. Gandhian Approach to Peace and Conflict Resolution
	43. Gandhi's Economic Thought
	44. Gender Sensitisation: Society, Culture and Change
	45. Geographic Information System

Category	Courses
	46. German Language and Culture
	47. Global Strategies to Sustainable Development
	48. Globalization: Theoretical Perspectives
	49. Group Dynamics
	50. Gujarati Bhasha ka Prathamik Parichay
	51. Health Research Fundamentals
	52. History of Indian Knowledge Management System
	53. History of Urdu Language & Literature
	54. Human Behaviour
	55. Human Rights: Indian Perspective
	56. Human Security
	57. India and World Politics: Challenges and Opportunities in 21st Century
	58. Indian Culture: Perspective for Tourism
	59. Indian Feminisms: Concepts and Issues
	60. Indian Fiction in English
	61. Indian Perspectives on Peace and Conflict
	62. Indian Poetics
	63. Indian Poetry in English
	64. Instructional Design
	65. Intellectual Property
	66. Intellectual Property to Engineers and Technologists
	67. Brain & Behaviour
	68. Cognitive Psychology
	69. Cultural Studies
	70. Environmental Economics
	71. Modern Indian Drama
	72. Modern Indian Political Thought
	73. Paninian grammar
	74. Peace and Conflict Management
	75. Political Theory
	76. World Literature
	77. IP Management & Technology Transfer
	78. Japanese course taught in Hindi
	79. Language, Culture and Cognition: An Introduction
	80. Learning English in Hindi
	81. Legal Compliance for Incorporating Start-up
	82. Literature and Coping Skills
	83. Literature and Life
	84. Literature, Culture and Media

Category	Courses
	85. Modern Indian Writing in Translation
	86. Narrative Mode and Fiction
	87. Non-Violence Movements after Gandhi
	88. Overview and Perspectives of Values
	89. Patent Law for Engineers and Scientists
	90. Petroleum Economics and Management
	91. Philosophical Foundations of Social Research
	92. Philosophy of Gandhi
	93. Phonetics and Phonology: A broad overview
	94. Principle of Pedagogy
	95. Psychiatry - An Overview and How the Brain Creates Mind
	96. Psychology of Stress, Health and Well-being
	97. Renewable Energy Technology and Their Uses
	98. Selection and Integration of Technology in Educational Processes
	99. Socio- Psychological Basis
	100. Sociological Perspectives on Modernity
	101. Sociology in India
	102. Sociology of Development
	103. Soft Skill Development
	104. Statistics in Psychology
	105. Strategic Performance Management
	106. Structure and Management of Education
	107. Sustainability Science
	108. Sustainable Development Goals (SDGs)
	109. Technology Transfer Through Joint Venture
	110. The Nineteenth - Century English Novel
	111. The Science of Happiness and Wellbeing
	112. Towards an Ethical Digital Society: From Theory to Practice
	113. Tribal Society
	114. Tribals in North and Northeast Region of India
	115. Tribals of South and Central India
	116. Twentieth Century Fiction
	117. Understanding Gender and Law
	118. Understanding Human Trafficking
	119. Understanding Incubation and Entrepreneurship
	120. United Nations Sustainable Development Goals (UN SDGs)
	121. Upanyas: Swaroop Aur Vikas
	122. Women and Peace
	123. Yoga and Positive Psychology for Managing Career and Life
	124. आदिकालीन एवं मध्यकालीन हिंदी काव्य

Category	Courses
	125. आधुनिक हिंदी काव्य
	126. उपन्यास एवं कहानी
	127. नाटक और अन्य गद्य विद्याएँ
	128. भाषा विज्ञान और हिंदी भाषा
	129. साहित्य सिद्धांत एवं समालोचना
	130. हिंदी भाषा और साहित्य का इतिहास
6. Technical	1. Abrasive Machining and Finishing Processes
	2. Acoustic Materials and Metamaterials
	3. Air Pollution and Control
	4. Aircraft Design
	5. Analog Circuits and Systems
	6. Analog IC Design
	7. Applied Environmental Microbiology
	8. Applied Time-Series Analysis
	9. Architectural Design of Digital Integrated Circuits
	10. Automatic Control
	11. Basic construction materials
	12. Basic Electronics
	13. Basic on Civil Work
	14. Biological process design for wastewater treatment
	15. Biomass Conversion and Biorefinery
	16. Biomedical Signal Processing
	17. Bulk Material Transport and Handling Systems
	18. CAD/CAM Computer Aided Design
	19. Carbene based Organometallic Compounds
	20. Carbon Materials and Manufacturing
	21. Casting Technology
	22. Cathodic Protection Engineering
	23. Characterization of Construction Materials
	24. Chat GPT
	25. Chemical Process Instrumentation
	26. Chemical Process Technology
	27. Chemical Process Utilities
	28. Chemical Reaction Engineering
	29. Circuit Analysis for Analog Designers
	30. CMOS Digital VLSI Design
	31. Combustion for propulsion
	32. Computational Fluid Dynamics
	33. Computational Fluid Dynamics for Incompressible Flows
	34. Computational Science in Engineering

Category	Courses
	35. Computer Aided Applied Single Objective Optimization
	36. Computer Aided Decision Systems
	37. Computer Integrated Manufacturing
	38. Computer Vision and Image Processing
	39. Construction Methods and Equipment Management
	40. Control engineering
	41. Crystal Elasticity and Crystal Plasticity
	42. Crystals, Symmetry and Tensors
	43. Dealing with materials data: collection, analysis and interpretation
	44. Deep Learning for Visual Computing
	45. Defects in Crystalline Solids
	46. Design and Analysis of VLSI Subsystems
	47. Design of Power Electronic Converters
	48. Design, Technology, and Innovation
	49. Development and Applications of Special Concretes
	50. Diffusion in Multicomponent Solids
	51. Digital Communications
	52. Digital Electronic Circuits
	53. Digital IC Design
	54. Digital Land Surveying and Mapping (DLS&M)
	55. Digital Protection of Power System
	56. Digital Signal Processing and its Applications
	57. Digital System Design
	58. Discrete Time Signal Processing
	59. Drilling and Blasting Technology
	60. Earthquake Resistant Design of Foundations
	61. Electric Vehicles Design
	62. Electrical Machines
	63. Electricity & Safety Measures
	64. Electrochemical Technology in Pollution Control
	65. Electromagnetic Waves in Guided and Wireless Media
	66. Electronic Materials and Devices
	67. Electronic Packaging and Manufacturing
	68. Electronic Waste Management - Issues and Challenges
	69. Electronics equipment integration and Prototype building
	70. Energy Efficiency, Acoustics and Daylighting in Building
	71. Energy Resources and conversion processes
	72. Engineering Hydrology
	73. Engineering Mechanics - Statics and Dynamics
	74. Engineering Thermodynamics

Category	Courses
	75. Engineering/Architectural Graphics
	76. Environmental Quality Monitoring & Analysis
	77. Environmental Remediation of Contaminated Sites
	78. Evolution Of Air Interface Towards 5G
	79. Evolutionary Computation for Single and Multi- Objective Optimization
	80. Explosions and Safety
	81. FEM & Constitutive Modelling in Geomechanics
	82. Finite Element Analysis
	83. Finite Element Method
	84. Finite element modeling of welding processes
	85. Fluid Dynamics and Heat Transfer
	86. Fluid Flow Operations
	87. Fluid Mechanics
	88. Foundation Engineering
	89. Fuzzy Sets, Logic and Systems & Applications
	90. Gear And Gear Unit Design: Theory And Practice
	91. Geo Spatial Analysis in Urban Planning
	92. Geographic Information Systems
	93. Geology and Soil Mechanics
	94. Geomorphology
	95. Geotechnical Engineering
	96. High Power Multilevel Converters- Analysis, design and operational issues
	97. History of Architecture in India
	98. Hydraulic Engineering
	99. IC Engines and Gas Turbines
	100. Ideal fluid flows using complex analysis
	101. Industrial Automation and Control
	102. Industrial Engineering
	103. Information Theory
	104. Inorganic Chemical Technology
	105. Inspection and Quality Control in Manufacturing
	106. Instrumentation and Process Control in Food Industry
	107. Inventory and Store Management in Construction Industry
	108. Inverse Methods in Heat Transfer
	109. Kinematics Of Mechanisms and Machines
	110. Lean Construction
	111. Linear Dynamical Systems
	112. Machine Learning for Soil and Crop Management
	113. Machinery Fault Diagnosis and Signal Processing

Category	Courses
	114. Machining and Machining Fluids
	115. Machining Science
	116. Maintenance and Repair of Concrete Structures
	117. Manufacturing Automation
	118. Manufacturing Guidelines for Product Design
	119. Manufacturing Process Technology I & II
	120. Mass Momentum and Energy Balances In Engineering Analysis
	121. Material Characterization
	122. Material Processing
	123. Material Science
	124. Materials Science and Engineering
	125. Matlab Programming for Numerical Computation
	126. Mechanical Behaviour of Materials (Part – I)
	127. Mechanical Measurement System
	128. Mechanical Micro Machining
	129. Mechanics of Fibre Reinforced Polymer Composite Structures
	130. Mechanics of Machining
	131. Mechatronics
	132. Medical Image Analysis
	133. Membrane Technology
	134. Micro - Sensors
	135. Microprocessors and Interfacing
	136. Microprocessors And Microcontrollers
	137. Microwave Engineering
	138. Microwave Integrated Circuits
	139. Microwave Remote Sensing in Hydrology
	140. Millimeter Wave Technology
	141. MIMO Wireless Communication
	142. Mineral Processing
	143. Mineral Resources: Geology Exploration Economics and Environment
	144. Mining Machinery
	145. Modelling and Simulation of Dynamic Systems
	146. Modern Computer Vision
	147. Multiphase Flows
	148. Multiphase Microfluidics
	149. Multirate DSP
	150. Nature and Properties of Materials
	151. Network Analysis
	152. Neural Science for Engineers
	153. Noise Management & Control

Category	Courses
	154. Nonlinear and Adaptive Control
	155. Oil Hydraulics and Pneumatics
	156. Operation and Planning of Power Distribution Systems
	157. Operations Management
	158. Optical Engineering
	159. Optical Methods for Solid and Fluid Mechanics
	160. Optical Wireless Communications for Beyond 5G Networks and IoT
	161. Optimal control
	162. Optimization from fundamentals
	163. Physico-chemical processes for wastewater treatment
	164. Physics of Nanoscale Devices
	165. Pollutants and Water Supply
	166. Polymer Reaction Engineering
	167. Power Electronics
	168. Power Management Integrated Circuits
	169. Power Quality Improvement Technique
	170. Power System Dynamics, Control and Monitoring
	171. Power System Engineering
	172. Principles and Calculations in Chemical Engineering
	173. Principles of electronic business
	174. Principles of Microwave Antennas
	175. Process Equipment Design
	176. Process Modelling in The Membrane Separation Process
	177. Product Design and Manufacturing
	178. Product Engineering and Design Thinking
	179. Properties of Materials
	180. Quality Engineering & Management
	181. Recent Advances in Transmission Insulators
	182. Remote Fundamentals of Automotive Systems
	183. Remote Sensing Essentials
	184. Remote Sensing: Principles and Applications
	185. Renewable Energy: Solar, Wind and Biomass Energy Systems
	186. Repair and Maintenance of Buildings
	187. Retrofitting and Rehabilitation of Civil Infrastructure
	188. Robotics
	189. Robotics and Control: Theory and Practice
	190. Robotics: Basics and Selected Advanced Concepts
	191. Rocket Propulsion
	192. Safety in Construction
	193. Satellite Attitude Dynamics and Control
	194. Scheduling Techniques in Projects

Category	Courses
	195. Semiconductor device modelling and Simulation
	196. Semiconductor devices
	197. Sensors and actuators
	198. Signal Processing Techniques and its Applications
	199. Signals and Systems
	200. simulation software
	201. Smart Grid: Basics to Advanced Technologies
	202. Smart Materials and Intelligent System Design
	203. Soft Nano Technology
	204. Soil Dynamics
	205. Soil Mechanics
	206. Soil Structure Interaction
	207. Solar Photovoltaics: Principles, Technologies & Materials
	208. Spread Spectrum Communications and Jamming
	209. Statistical Thermodynamics
	210. Steam and Gas Power Systems
	211. Steel Quality: Role of Secondary Refining & Continuous Casting
	212. Stochastic Modelling and the Theory of Queues
	213. Structure, Form, and Architecture: The Synergy
	214. Surface Engineering for Corrosion and Wear Resistance Application
	215. Surface Engineering of Nanomaterials
	216. Surface Water Hydrology
	217. Theoretical and Experimental Aerodynamics
	218. Theory and Practice of Non-Destructive Testing
	219. Theory of Composite Shells
	220. Thermodynamics & its application
	221. Thermodynamics and Molecular Simulations
	222. Thermodynamics of Fluid Phase Equilibria
	223. Tools In Scientific Computing
	224. Traditional and Non- Traditional Optimization Tools
	225. Traffic Signal System
	226. Transmission lines and electromagnetic waves
	227. Turbulent Combustion: Theory and Modelling
	228. Uncertainty Analysis and Experimentation
	229. Understanding Ethnography
	230. Unit operations of particulate matter
	231. Unsaturated Soil Mechanics
	232. Urban Transportation Systems Planning
	233. Usability Engineering Sensing and GIS for rural development
	234. User Interface Design
	235. Vibration of Continuous Systems

Category	Courses
	236. Viscous Fluid Flow
	237. Waste to Energy Conversion
	238. Water and wastewater treatment
	239. Water Supply Engineering
	240. Wavelets and Multirate Digital Signal Processing
	241. Welding Metallurgy
	242. Welding Processes
	243. Welding Science and Technology
	244. Wheeled Mobile Robots
7. Sanskrit	1. वैदिक साहित्यस्य इतिहासः
	2. प्रशिष्टसंस्कृत साहित्यस्य इतिहासः
	3. गद्य साहित्यस्य इतिहासः
	4. स्तोत्र-साहित्यस्य इतिहासः
	5. गणितशास्त्रस्य इतिहासः
	6. ज्योतिषशास्त्रस्य इतिहासः
	7. गुर्जरसंस्कृतसाहित्य एवं साहित्यकाराः
	8. विदूरनीतिः
	9. शुक्रनीतिः
	10. चाणक्यनीतिः
	11. रामायणस्य परिचयः
	12. महाभारतस्य परिचयः
	13. संस्कृत साहित्य गुर्जरसाहित्यस्य उपजीव्यरूपेण
	14. संस्कृत साहित्य हिन्दीसाहित्यस्य उपजीव्यरूपेण
	15. संस्कृतसाहित्ये गुर्जरप्रान्तस्य प्रदानम्
	16. वैदिकसाहित्ये कृषिविज्ञानम्
	17. पुराणसाहित्यस्य निर्वचनेषु संगोपितः इतिहासः
	18. पुराणसाहित्ये वर्णितानि अर्धवैज्ञानिक-मिथकानि
	19. गुर्जरभाषा-पोषकः संस्कृतस्य तद्भव-तत्सम-शब्दवैभवः
	20. गुर्जर-भाषायाः रूढशब्दानां मूले स्थितं संस्कृतम्
	21. आयुर्वेदस्य इतिहासः
	22. भारतीयकलाशास्त्रस्य परिचयम्
	23. वनस्पतिविज्ञानस्य परिचयम्
	24. धर्मशास्त्रस्य इतिहासः
8. Gujarati	1. સાહિત્ય અને ઇતિહાસ
	2. સાહિત્ય અને સમાજ

A33

Category	Courses
	3. સાહિત્ય અને સંસ્કૃતિ
	4. ગુજરાતી સાહિત્ય અને સિનેમા
	5. ગુજરાતી સાહિત્ય અને સાંસ્કૃતિક વારસો
	6. ગુજરાતી સાહિત્ય અને પ્રત્યાયન કૌશલ
	7. ગુજરાતી મધ્ય કાલીન પદ્ય કૃતિ - મહાકવિ પ્રેમાનદ રચિત "સુદામાચરિત્ર"
	8. ગુજરાતી મધ્ય કાલીન પદ્ય કૃતિ - મહાકવિ પ્રેમાનદ રચિત "નળાખ્યાન"
	9. ગુજરાતી કૃતિ અભ્યાસ: માણસાઈના દીવા- ઝવેરચંદ મેઘાણી
	10. ગુજરાતી વ્યાકરણ, ગદ્ય ખંડનું વિવરણ, સન્ક્ષેપિકરણ
9. Hindi	1. हिंदी एकांकी साहित्य एवं व्याकरण
	2. हिंदी खंडकाव्य एवं व्याकरण
	3. हिंदी कथा साहित्य
	4. हिंदी भाषा का व्याकरण
	5. हिंदी उपन्यास साहित्य में नारी विमर्श
	6. हिंदी का प्रवासी साहित्य
	7. हिंदी का आत्मकथात्मक साहित्य
	8. हिंदी नाटक एवं रंगमंच
	9. आधुनिक हिंदी काव्य
	10. हिंदी संस्मरण साहित्य
	11. हिंदी पत्रिका और मीडिया लेखन
	12. हिंदी पत्रकारिता
	13. हिंदी अनुवाद विज्ञान
	14. हिंदी रेखाचित्र साहित्य
	15. समकालीन हिंदी कथालेखन
	16. नरसिंह महेता के पदों का संपादक: अनंतराय रावल
	17. भारतेन्दु युगीन हिंदी निबंध साहित्य
	18. भक्ति कालीन निर्गुण हिंदी काव्यधारा
	19. रामभक्ति हिंदी काव्यधारा
	20. तुलनात्मक हिंदी साहित्य (सैद्धांतिक)
	21. तुलनात्मक हिंदी साहित्य (व्यावहारिक)
	22. व्याकरण पत्र लेखन एवं निबंध लेखन
	23. आधुनिक हिंदी काव्य पंचवटी एवं व्याकरण

3.3.4 Ability Enhancement Course (AEC) (10 Credits)

These courses shall be offered in combination of courses like Indian Languages (Eighth Schedule of Indian Constitution) & English language focused on language and communication skills. The aim of

A34

these courses is to acquire and demonstrate the core linguistic skills, including critical reading and expository and academic writing skills to the students.

The HEIs may introduce courses relevant to the discipline or common to all UG programmes. List of few AEC courses are as below. HEIs can either choose course from the list or define the course by their own way.

Table 6: List of AEC Courses

A. Indian Languages (Eighth Schedule of Indian Constitution):	C. Sanskrit Language:
1. Assamese 2. Bengali 3. Bodo 4. Dogri 5. Gujarati 6. Hindi 7. Kashmiri 8. Kannada 9. Konkani 10. Maithili 11. Malayalam 12. Manipuri 13. Marathi 14. Nepali 15. Odia 16. Punjabi 17. Sanskrit 18. Santali 19. Sindhi 20. Tamil 21. Telugu, and 22. Urdu	1. अष्टाङ्गयोगस्य परिचयम् 2. कृषि विज्ञानम् 3. चाणक्यनीतिः 4. जातककथाः 5. तर्कशास्त्रस्य परिचय 6. नीतिशास्त्रस्य परिचय 7. पञ्चतन्त्रम् 8. पुराणसाहित्यस्य परिचयम् 9. रामायण एवं महाभारतस्य परिचयम् 10. विदूरनीतिः 11. वैदिकसाहित्यस्य परिचय 12. वैदिकसाहित्ये औषधविज्ञानम् 13. वैदिकसाहित्ये कृषिविज्ञानम् 14. वैदिकसाहित्ये खगोलविज्ञानम् 15. वैदिकसाहित्ये पर्यावरणम् 16. वैदिकसाहित्ये वनस्पतिविज्ञानम् 17. शिल्पशास्त्रस्य परिचय 18. शुक्रनीतिः 19. संस्कृत व्याकरणशास्त्रस्य इतिहासः 20. सुभाषितसाहित्यम् 21. हितोपदेशः
B. English Languages and other courses: 1. Business Communication 2. Communication Skills for Healthcare Professional 3. Company law and Corporate Governance 4. Corporate communication in English 5. Creative Writing Essential 6. Developing Fluency and Clarity in English 7. Elements of Social Science and Ethics 8. English and Communication Skills	**D. Gujarati** 1. ગુજરાતી લેખન કૌશલ્ય (સર્જનાત્મક) 2. ગુજરાતી વ્યાકરણ, નિબંધ, અરજી, પત્ર લેખન , અર્થવિસ્તાર 3. ગુજરાતી અર્વાચીન ગદ્યકૃતિ - ' વનાંચલ ') 4. ગુજરાતી નિબંધ સ્વરૂપની કૃતિ-ધરતીનું લુણ

9. Environment Conservation & Disaster Management 10. Environmental Science 11. Feature Writing 12. Financial Literacy 13. Functional Grammar and Composition 14. General Principles of Writing 15. Introduction to Functional English 16. Introduction to Legal English 17. Introduction to Translation 18. Journalistic Writing 19. Language In context 20. Leadership and Influence 21. Learning Strategies 22. Learning How to learn 23. Life Skills 24. Marketing and Mass communication 25. Mindfulness for wellbeing and peak performance 26. Organisational Behaviour 27. Personality Development 28. Personality Development and Soft Skills 29. Practical English 30. Professional Communication Skills 31. Project Management 32. Public Speaking Masterclass 33. Scientific & technical communication skill 34. Social Culture and Human Behaviour 35. Teaching and Learning 36. The Constitution, Human Rights, and the law 37. Thought and Writing 38. Time Management Fundamentals 39. Translation and interpretation in Guajarati to English 40. Writing for Media: Radio and Television 41. Writing Poetry	5. ગુજરાતી અર્વાચીન ગદ્ય કૃતિ - પ્રશિષ્ટ ગુજરાતી રેખાચરિત્રો 6. ગુજરાતી પ્રૂફવાચન અને જોડણી 7. ભારતીય જ્ઞાન પરંપરા: ગુજરાતી સંત કવયિત્રીઓ: સતી તોરલ અને ગંગા સતી 8. ગુજરાતી અર્વાચીન ગદ્ય કૃતિ - પ્રશિષ્ટ નવલિકાઓ સંપાદક: રઘુવીર ચૌધરી) 9. ગુજરાતી અર્વાચીન પદ્ય કૃતિ - પ્રશિષ્ટ ગુજરાતી કાવ્યઝલક ખંડ:૨, ગુચ્છ-૨ સંપાદક: ચન્દ્રકાંત શેઠ 10. ગુજરાતી અર્વાચીન ગદ્ય કૃતિ - "પૃથ્વીવલ્લભ" લે. ક. મां. મુનશી

3.3.5 Skills Enhancement Courses (SEC) (10 Credits)

These courses are aimed at imparting practical skills, hands-on training, soft skills, life skills, etc., to enhance the employability of students.

The HEIs may introduce courses relevant to the discipline or common to all UG programmes.

A36

Table 7: List of SEC Courses

Skills Enhancement Course Topics (General Skills):	
1. Advance Spreadsheet Tools	68. ६४ कला -परिचय एवं प्रावीण्य (वात्स्यायन कामसूत्रानुसार)
2. Art of Translation	69. अनुवाद कौशल्य एवं कला
3. Social Psychology	70. अभिलेखविद्या
4. Business Games (Ring Toss, Block Building)	71. कर्मकांडविद्या
5. Career Skill	72. नृत्य - नाट्यशास्त्र (भरतमुने: नाट्य शास्त्रानुसार)
• Resume Skills	
• Interview Skills	73. पतंजले:- अष्टांगयोग
• Group Discussion Skills	74. पाठसंपादन कला
• Exploring Career Opportunities	75. भारतीय वास्तुविज्ञानकला
6. Communication Skill	76. भाषा शुद्धीकरण कौशल्य
• Listening	77. भाषाप्रवेशे -प्रावीण्य
• Speaking	78. मंत्रोच्चार चिकित्सा पद्धति
• Reading	79. यज्ञविज्ञानम्
• Writing and Different Modes of Writing	80. लिपिविज्ञानम्
• Digital Literacy and Social Media	81. वैदिक साहित्ये कृषिकर्म
• Digital Ethics and Cyber Security	82. वैदिक साहित्ये पर्यावरण संरक्षण-उपाया:
• Nonverbal Communication	83. षोडश संस्कारा:
7. Cultural History of Gujarat	84. संस्कृत अभिनयकला
8. Cyber Crime	85. संस्कृत एवं कंप्यूटरकला
9. Cyber Sphere and Security: Global Concerns	86. संस्कृत रंगमंचकला
10. Design Thinking	87. हस्तप्रत विज्ञान
11. Digital information literacy	88. भारतीय वास्तुविज्ञाकला
12. Electronic Product Testing	89. संस्कृत अभिनयकला
13. Entrepreneurship Skills	90. संस्कृत रंगमंचकला
14. Environmental impact and risk assessment	91. कर्मकांडविद्या
15. Event Management	92. वैदिकगणित
16. Family Business Management	93. पाण्डुलिपिनां संरक्षणस्य उपायाः
17. Forage Crops	94. वास्तुविज्ञानम् (अपराजितपृच्छा, समरांगणसूत्र, मयमत्तमादि)
18. Foreign Language	
19. Game Designing	95. मन्दिरनिर्माणम् एवं व्यवस्थापनम्
20. Graphics Designing and Animation	96. संग्रहालयविज्ञानम्
21. Green House Technology	97. विमानविज्ञानम्
22. Health Science	98. अनुवादકला
23. Holistic wellbeing	
24. Honeybee Farming	
25. HR Analytics	
26. Innovation and Entrepreneurship	
27. Interpersonal and negotiation skill	
28. Introduction to cloud computing	
29. Introduction to Philosophy	
30. IT Skills & Data Analysis	
31. Kitchen Gardening	
32. Lab Testing and Quality Assurance	

33. Leadership and Management Skills
   - Leadership Skills
   - Managerial Skills
   - Entrepreneurial Skills
   - Innovative Leadership and Design Thinking
   - Ethics and Integrity
   - Managing Personal Finance
34. Life Skills (Self Esteem, self-confidence, empathy, teamwork, observation and concentration, self-discipline, commitment, and critical thinking)
35. Life Skills Education
36. Manures & Fertilizer
37. Meditation and Yoga
38. Mobile Repairing
39. Modern Indian Philosophy
40. Organized Crime & Justice Delivery
41. Pedagogy of Science
42. Personal Financial Planning
43. Personality Development
44. Personality Development (Goal Setting)
45. Personality Development (Time Management)
46. Post-Harvest Technology
47. Presentation Skills
48. Principles of Gandhian Thoughts
49. Problem solving and decision making
50. Professional Skill
51. Prompt Engineering
52. Public Speaking
53. Role of Forensic in effective implementations of Law & Order
54. Skill Development of the youths and their Livelihood
55. Social and Life Skills
56. Social Protection of Women & Law
57. Social Psychology
58. Soft Skills
59. Sound Engineering
60. Stress Management
61. Sustainability Reporting
62. Team Skill
   - Cognitive and Non-Cognitive Skills
   - Presentation Skills
   - Trust and Collaboration
   - Listening As a Team Skill

99. ગુજરાતી લેખન કૌશલ
100. પત્રકારત્વ
101. પ્રૂફરીડિંગ
102. મંચનકલા
103. લેખન કૌશલ્ય (વ્યવસાયિક)
104. વાગ કૌશલ્યાને પઠનકલા
105. સભાસંચાલન કલા
106. સ્ક્રિપ્ટ રાઇટિંગ

- Brainstorming
- Social and Cultural Etiquette
- Internal Communication

63. Temple Management
64. Time Management
65. Universal Human Value
- Universal Human Values
- Love and Compassion (Prem and Karuna)
- Truth (Satya)
- Non-Violence (Ahimsa)
- Righteousness (Dharma)
- Peace (Shanti)
- Service (Seva)
- Renunciation (Sacrifice) Tyaga
- Constitutional Values, Justice, and Human Rights

66. Wildlife conservation
67. working with People

Skills Enhancement Course Topics (Employability Enhancement Skill- NSQF Aligned Courses):

1. Aerospace and Aviation Sector
   - Aerospace Design & Development
   - Aerospace Manufacturing & Assembly
   - Airline Operations
   - Airport Operations, Cargo & Ground Handling
   - Maintenance Repair & Overhaul (MRO)
   - Drone Operator - Multi Rotor
   - Airline Customer Service Executive
   - Airline Ramp Executive
   - Airline Flight Load Controller
   - Airlines Ground Support Equipment Mechanic
   - Airport Crash Fire Tenders and Rescue Crew
   - Airport Warehouse Coordinator
   - Aerospace CNC Programmer
   - Aerospace Lab Technician – NDT
   - Aerospace Precision Mechanical Assembly Fitter

2. Agriculture Sector
   - Organic Cultivator
   - Dairy Farming
   - Honeybee Farming
   - Mushroom Farming
   - Poultry Farming

19. Instrumentation Automation Surveillance and Communication Sector
   - Instrumentation Technician (Process Control)
   - Industrial Automation Specialist
   - PLC Programmer and Troubleshooter
   - Installer and Operator-Additive Manufacturing (3D Printing)
   - HMI SCADA Programmer and Trouble Shooter
   - DCS Programmer and trouble Shooter
   - Installation and Commissioning technician

20. IT and ITes Sector
   - Software Developer
   - Web Developer
   - Associate-Customer Care (Voice/Non Voice)
   - Technical Support Engineer
   - Domestic IT Helpdesk Attendant
   - Technical Writer
   - Product Design Engineer- Mechanical
   - Associate-DTP
   - Hardware Engineer
   - Associate – CRM
   - Infrastructure Engineer

- Silkworm Rearing
- Medicinal and Aromatic Plants cultivation

3. Apparel and Home Furnishing Sector
   - Sewing Machine Operator
   - Hand Embroiderer
   - Industrial Engineer
   - Fashion Designer
   - Boutique Manager
   - Export Manager

4. Automotive Sector
   - Automation and Robotics Engineer
   - Automotive AC Technician
   - Automotive Accessory Fitter
   - Automotive Assembly Operator
   - Automotive Assembly Technician
   - Automotive CAD Technician
   - Automotive Casting Technician
   - Automotive CNC Machining Technician
   - Automotive Customer Relationship Manager
   - Automotive Cyber Security Engineer
   - Automotive Data Science Head
   - Automotive Detailer Technician
   - Automotive Electrician
   - Automotive Robotics and Automation Simulation Engineer

5. Beauty and Wellness Sector
   - Beauty Therapist
   - Hairdresser and Stylist
   - Pedicurist and Manicurist
   - Bridal Fashion and Portfolio Make-up artist
   - Spa Therapist
   - Yoga Trainer
   - Cosmetologist
   - Wellness Neurotherapist
   - Bridal Makeup Artist

6. Banking, Financial Service and Insurance Sector
   - Account Executive
   - SIP Agent
   - Mutual Fund Distributor
   - Credit Processing Officer
   - Microfinance Executive
   - Equity Dealer

21. Leather Sector
    - CAD CAM Operator- Goods
    - Saddle Maker
    - Goods and Garment Maker

22. Life Science Sector
    - Production Supervisor/ Incharge - Life Sciences
    - Fitter Mechanical - Life Sciences
    - EHS Manager - Life Sciences
    - Quality Assurance Chemist
    - QC Chemist Microbiology
    - Drug Regulatory Affairs Chemist
    - Research Associate/ Associate Scientist - Product Development
    - Lab Technician/ Assistant - Life Sciences
    - QC Chemist
    - Bioinformatics Associate/ Analyst

23. Logistic Sector
    - Warehouse, Inventory and Transport Manager
    - E-Commerce Manager
    - Supply Chain Associate
    - Vessel Operator

24. Management & Entrepreneurship and Professional Sector
    - Office Operator Executive
    - HR Executive
    - Start-up Support Executive
    - CSR and Sustainability Associate
    - Project Management Associate
    - Security Officer
    - CCTV supervisor
    - CCTV Video Footage Auditor
    - Firefighters
    - Consultant (Chartered Tax Practitioner)
    - Women Entrepreneur
    - Retail Store Operations
    - Digital Cataloguer

25. Media and Entertainment Sector
    - Voice Over Artist
    - Character Designer
    - Layout designer
    - Storyboard Artist
    - Animator
    - Social Media Executive

- Business Correspondent and Business Facilitator
- Financial Advisor and Agency
- Share Trade Operator

7. Capital Goods Sector
   - Fitter Fabrication
   - Tool and Die Maker
   - Manual Metal Arc Welder
   - Conventional Turning Operator
   - CNC Operator
   - CNC Programmer
   - Draughtsman Mechanical
   - Technician Instrumentation
   - Design Engineer

8. Construction Sector
   - Mason
   - Foreman
   - Rigger
   - Gas Cutter
   - Construction Welder
   - Construction Electrician
   - Fabricator

9. Domestic Worker Sector
   - Housekeeper
   - Housekeeper Cum Cook
   - Child Caretaker
   - Elderly Caretaker
   - Home Cook

10. Electronics Sector
    - Smartphone Assembly Technician
    - DTH Set Top Box Installation & Service Technician
    - Mobile Phone Hardware Repair Technician
    - Electronics Machine Maintenance Executive
    - Smart TV Repair Technician
    - Field Technician - Air Conditioner
    - Service Engineer IT Hardware
    - IT Coordinator in School
    - PCB Assembly Operator
    - Multi Skill Technician - Consumer Durables
    - HVAC Technician
    - Multi Skill Technician (Electrical)
    - EMS Technician

- Camera Operator
- Editor
- Music Composer
- Make-up artist
- Hairdresser
- Line Producer
- Script Writer
- Sound Designer

26. Power Sector
    - Engineer- Power Transmission
    - Lineman Distribution Technician
    - Consumer Energy Meter Technician
    - Technical Helper- Distribution
    - Power Plant – High Pressure Welder
    - Industrial Electrician
    - Electrician Domestic Solutions
    - Electrical Winder

27. Retail Sector
    - Store Operation Assistant
    - Cashier
    - Trainee Associates
    - Store Manager
    - Digital Cataloguer
    - Business Enhancer/Multichannel Retailer

28. Rubber, Chemical and Petrochemical Sector
    - Mill Operator
    - Kneader Operator
    - Storage Assistant
    - Carbon/Oil Charger Operator
    - Rubber Internal Mixer Operator
    - Internal Mixer Operator
    - Compression Moulding Operator
    - Autoclave Operator
    - Bladder Assembly Operator
    - Lab Chemist (Latex)
    - Quality Controller – TSR
    - Rubber Extrusion Supervisor
    - Tube Curing Operator
    - Emulsion Maker
    - Plastics Product & Mould Designer
    - Saw Mill Technician

29. Green Jobs Sector
    - Solar PV Installer
    - Solar PV Designer

- Assistant Drone Technician
- Motor and Controller Design Engineer
- Robotics Automation Lead
- Electrical Technician
- CCTV Installation Technician
- IoT Hardware Analyst
- Solar LED Technician
- Solar Panel Installation Technician

11. Food Industry Sector
- Baking Technician
- Artisanal Chocolate Maker – Entrepreneur
- Dairy Products Processor
- Ice Cream Processing Technician
- Fish and Sea Food Processing Technician
- Soya Products Processor
- Jam, Jelly, and Ketchup Processing Technician
- Pickle and Paste Making Technician
- Food Microbiologist
- Food Analyst
- Traditional Snack and Savoury Maker
- Spice Processing Technician

12. Furniture and Fitting Sector
- Furniture Maker
- Carpentry
- Furniture Designer
- Interior Designer

13. Gems and Jewellery Sector
- CAD Designer
- Polisher
- Diamond Assorter
- CAM Machine Operator
- Plater
- Spectrum Operator
- Gemstone Polisher
- Goldsmith Enameller
- Stone Fixer
- Stringing/Beading Artisans

14. Handicrafts and Carpet Sector
- Carpet Weaver
- Namda Craft Maker
- Ceramics and Terracotta Toy Maker
- Fashion Jewellery Maker
- Glass Toy Maker
- Hand Block Printer

- Solar PV Maintenance Technician – Electrical
- Solar PV Manufacturing Technician
- E-Waste Recycling Entrepreneur
- Solar Domestic Water Heater Technician
- CMS Engineer - Wind Power Plant
- Recyclable Waste Collector & Segregator
- Wastewater Treatment Plant Technician
- Technician - Paper Bag Manufacturing

30. Mining Sector
- Exploration Drilling
- HEMM Operations
- Mine Surveying
- Mechanical services
- Mining Operations
- Geological exploration
- Ore Processing
- Instrumentation Maintenance
- Topography (2D) Survey

31. Sports, Physical Education, Fitness and Leisure Sector
- Sports Coach
- Fitness Trainer
- Sports Masseur
- Strength & Conditioning Coach
- Physical Activity Trainer
- Early Years Physical Activity Facilitator

32. Strategic Manufacturing Sector
- Pipe Fitter - Ship Building
- Design Engineer - Hull & Structures
- Marine Fitter and Rigger
- Structural Fabricator – Ship
- Ship Safety Inspector – Radiation and Hazardous Material
- Technician - Installation and Commissioning (Fire Safety System)

33. Telecom Sector
- Customer Care Executive - Call Center
- Broadband Technician
- Telecom -In-store promoter
- Handset Repair Engineer
- Telecom Terminal Equipment Application Developer

- Jute Handloom Weaver
- Jute Product Stitching Operator
- Hand Crochet Lace Maker
- Natural Fiber Maker
- Kolhapuri Chappal Maker
- Agarbatti Maker
- Bamboo work Artisan
- Leather Toy Maker
- Matalware Maker
- Paper Mache Products Artisans
- Stone Preparation Artisans
- Wooden Toy Maker Artisans

15. Healthcare Sector
- Yoga Instructor
- Ayurveda Ahara and Poshana Sahayak
- Ayurveda Dietician
- Ayurveda Masseur
- Central Sterile Service Department (CSSD) Assistant
- Cupping Therapy Assistant
- Diabetes Assistant
- Emergency Care Assistant
- General Duty Assistant
- Hospital Front Desk Coordinator
- Home Health Aide
- Panchkarma Technician
- Phlebotomist
- Yoga Therapy Assistant
- Yoga Wellness Trainer

16. Hydrocarbon Sector
- Assistant Technician-Drilling (Oil & Gas)
- Cathodic Protection Technician
- Fire Safety Technician (Oil & Gas)
- Industrial Electrician (Oil & Gas)
- Industrial Welder (Oil & Gas)
- LPG Mechanic
- Refinery Production Technician (O&M)
- Hydrocarbon Pipeline Operator
- Lab Chemist/Analyst– Petroleum Products
- Rig Mechanic
- Junior Operator – 2G Ethanol Plant

17. Indian Iron and Steel Sector
- Asst. Mechanic - Bearing Maintenance
- EOT Overhead Crane Operator

- Telecom Board Bring-Up Engineer
- Telecom E-Waste Handler
- Tower Technician
- Cluster In-charge
- Wireless Technician
- Telecom Infrastructure Engineer
- Core Engineer
- Transmission Engineer
- ICT Engineer
- Optical Fiber Technician

34. Textile Sector
- Power loom Operator
- Jigger Machine Operator
- Two shaft Handloom Weaver
- Blowroom Operator
- Draw Frame Operator
- Jute Selector cum Assorter
- Ring Frame Operator
- Assistant Cotton Grader (Ginning)
- Knotting Machine Operator
- Fabric Mender
- Cocoon Cook – Mulberry
- Loin Loom Weaver
- Kalamkari Artisan
- Handloom Entrepreneur

35. Tourism and Hospitality Sector
- Food and Beverage Service -Steward
- Duty Manager
- Guest Relations Manager
- Front Office Executive
- Banquet Manager
- F&B Service Trainee
- Trainee Chef
- Restaurant Manager
- Food Technologist
- Transport Duty Manager
- Visa Assistance Consultant
- Travel Consultant
- Heritage Tour Guide
- Naturalist
- Mountain Porter
- Adventure Scout
- Rafting Instructor

36. Water Management & Plumbing Sector
- Plumber (Welder)
- Jal Mitra - Jal Jeevan Mission

- Mechanic: Hydraulic & Pneumatic System - Assistant - Machinist - Iron And Steel - Assistant Rigger - Heavy Material - Operator - Plasma Cutter - Assistant Operator Stacker/Reclaimer - Assistant Operator - Coil Handling and Packaging - Operator - Fluid Controls - Metal Fabricator- Iron and Steel 18. Infrastructure Equipment Sector - Backhoe Loader Operator - Excavator Operator - Hydra Crane Operator - Aerial Work Platform Operator - Skid Steer Loader Operator - Paver Operator - Mechanic (Engine) - Mechanic(Electrical/Electronics/ Instrumentation)	- Groundwater Engineer - Fire Protection Systems Designer - Public health system design engineer - Wastewater system design engineer

3.3.6 Value Added Course (VAC) (08 Credits)

The course aims at enabling the students to acquire knowledge and understanding and equip them with the ability to apply the acquired knowledge, skills, attitudes, and values to take appropriate actions in professional and day to day life.

These courses may be relevant to Indian Knowledge System, environmental science/ education, digital and technical solutions and health & wellness, yoga education, sports, and fitness.

The HEIs may introduce courses relevant to the discipline or common to all UG programmes.

Table 8: List of VAC Courses

1. Adult Education	1. 3D Machining
2. Agri Business in Indian Rural Economy	2. Application Design
3. Ayurveda and Nutrition	3. Applied Arts
4. Casteism	4. Conversation of Biological diversity
5. Climate Change	5. Critical and Logical Thinking Development
6. Constitutional Values and Fundamental Duties	6. Cultural Event Management
7. Cultural History of Indian Middle Era	7. Effective Waste Management
8. Culture and Communication	8. Emotional Intelligence
9. Data Analysis	9. Fine Arts
10. Deep Learning	10. Forest and Wildlife conversation
11. Digital Empowerment	11. Indian Bhakti Tradition Culture and Human Values
12. Drone Technology	
13. Education & Social services	12. Indian constitution
14. Effective Communication	13. Interpersonal Skills

Topics under Indian Heritage and Culture:

1. Aakhayan and Bhavai Art
2. Archaeological sites of India
3. Astrology
4. Ayurveda
5. Bhakti & Sufi Movement
6. Culture and Anthropology
7. Culture History of Ancient Gujarat
8. Culture History of Ancient India
9. Culture of Prime Society
10. Culture Study of Gujarat
11. Embroidery Art
12. Extension of Indian culture
13. Fairs, Festivals and Craft
14. Folk Art
15. Folk Culture
16. Folk Dances
17. Folk Music and Instruments
18. Holy Geographical Regions of India
19. Indian Architecture
20. Indian Arts and Architecture
21. Indian Arts and Architecture
22. Indian Cinema and Circus
23. Indian Craft System
24. Indian Culture & History
25. Indian Constitution
26. Indian Dance
27. Indian drama (Natyakala) / Sanskrit drama
28. Indian Economics
29. Indian Epigraphy
30. Indian Ethics
31. Indian folklore- Narrative convention
32. Indian food and fashion
33. Indian Iconography
34. Indian Inscription
34. Indian Languages and Literature (22 languages under Eighth Schedule of Indian Constitution)
35. Indian Law
36. Indian Literature
37. Indian Logic
38. Indian manuscript system
39. Indian Music
40. Indian Mythology
41. Indian Numismatics
42. Indian Paintings
43. Indian percussion and Vocal music
44. Indian Philosophy
45. Indian Religion
46. Indian Rituals
47. Indian rivers: History and culture
48. Indian Script
49. Indian Sculpture
50. Indian Stage
51. Indian Theatre
52. Language & Literature
53. Martial Arts in India
54. Painting Arts in Gujarat
55. Pottery Tradition in India
56. Promotion and Preservation of Indian Heritage
57. Saint Literature of Gujarat
58. Science & Technology (Art & Culture)
59. Tradition of Manuscript in Gujarat
60. Vedic mathematics
61. Weaving Art
62. Wooden Art
63. World Civilization
64. Yoga

3.8 Levels of Courses and Course Coding

Courses shall be coded based on the learning outcomes, level of difficulty, and academic stiffness. The coding structure of the course may be as follows:

A46

Table 13

Coding	Level of Courses	Contents Inclusion
0-99	Pre-requisite Courses	An introductory level courses with no credits. It will be required to offer bridge course.
100-199	Foundation or introductory courses	Required to gain an understanding and basic knowledge about the subjects and help decide the subject or discipline of interest. These courses may also be prerequisites for courses in the major subject. These courses generally would focus on foundational theories, concepts, perspectives, principles, methods, and procedures of critical thinking to provide a broad basis for taking up more advanced courses. Mostly these codes used for short term courses.
200-299	Intermediate-level courses	These courses are subject-specific courses intended to meet the credit requirements for minor or major areas of learning. This code required for First and Second year course of Undergraduate Degree.
300-399	Higher-level courses	These courses are required for majoring in a disciplinary/interdisciplinary area of study to award of a degree. This code required for Third year course of Undergraduate Degree.
400-499	Advanced Courses	These courses would include lecture courses with practicum, seminar-based course, term papers, research methodology, advanced laboratory experiments/software training, research projects, hands-on-training, internship/apprenticeship/OJT projects at the fourth year undergraduate level.
500-599	Advanced Courses	Courses required at first year master's degree level for a 2-year Master's degree programme
600-699	Advanced Courses	Courses required for second year of 2-year master's or 1-year Master's degree programme
700-799	Advanced Courses	Courses limited to Doctoral Level

Nomenclature of Course Code:

Coding will be in combination of Four letters and Four digits

A. First and Second Letter of Major/Minor: This reflects first two letters of the programme's name (Chemistry-CH, Hindi-HI, Sanskrit-SA, Economics- EC, Information Technology-IT). If name of any programme is combined with 'AND' then take initial first letter & first letter after 'AND'. i.e., for Commerce and Management, coding will be 'CM')

Third letter of Major/Minor: This reflects category of the course (Major- M, Elective-E)

Category	Name of the Programme	Coding
Major or Core	Chemistry	CHM
	Economics	ECM
	Information Technology	ITM
Minor or Elective	Chemistry	CHE
	Economics	ECE
	Information Technology	ITE

B. First, Second and Third Letter of Other Courses: This reflects the abbreviation of the categories

Category	Course Name	Coding
Multidisciplinary Course	Cyber Hygiene	MDC
Ability Enhancement Course	English and Communication Skill	AEC
Skill Enhancement Course	Personality Development	SEC
Value Added Course	Personality Development	VAC
Indian Knowledge System	Indian Music	IKS

- **Three Digit Number:** This reflects the level of courses
- **Fourth digit:** Fourth digit reflects the year of study (1-First, 2-Second, 3-Third, 4-Fourth)
- **Last Letter:** Last letter reflects the mode of study (C- Campus, O-Online)

An illustration of Course Coding:

Sr. No	Category	Programme Name	Course Code
01	Major Course	Physics	PHM201-1C
02	Major Course	Sanskrit	SAM203-1C
03	Major Course	Economics	ECM321-3C
04	Minor Course	Commerce	COE211-2C
05	Minor Course	Chemistry	CHE301-3C
06	Minor Course	Gujarati	GUE402-4C
07	Multidisciplinary Course	Cyber Hygiene	MDC201-2C
08	Ability Enhancement Course	English and Communication Skill	AEC201-1O
09	Skills Enhancement Course	Personality Development	SEC233-2C
10	Value Added Course	Personality Development	VAC214-2O
11	Indian Knowledge System	Indian Music	IKS216-1C

7.7 Models of evaluation

Based on the types of evaluation, various models of evaluation implementation are suggested for theory, practical, self-study and work-based learning. The focus of these models is to encourage the students to improve on skills and performance.

Model for Theory Courses	
CEE- 50% (50)	SEE- 50% (50)
Exam Pattern	**Marks**
Class Test (best 2 out of 3)	15
Quiz (Best 3 out of 4)	15
Active Learning	05
Home Assignment	05
Class Assignment	05
Attendance	05
Continuous and Comprehensive Evaluation	**50**
Semester-End Evaluation	**50**

Model for Practical Courses	
CEE- 50% (50)	SEE- 50% (50)
Exam Pattern	**Marks**
Lab work assessment (best 4 out of 5)	20
Viva voce/Lab quiz (best 4 out of 5)	20
Attendance	10
Continuous and Comprehensive Evaluation	**50**
Semester-End Evaluation	**50**

Model for Project/Self-study course	
CEE- 50% (50)	SEE- 50% (50)
Exam Pattern	**Marks**
Project Evaluation (Best 3 out of 5)	30
Participation in discussion	10
Attendance	10
Continuous and Comprehensive Evaluation	**50**
Semester-End Evaluation	**50**

Model for work experience course	
CEE- 50% (50)	SEE- 50% (50)
Exam Pattern	**Marks**
Project Evaluation (Best 3 out of 5)	30
Participation in discussion	10
Attendance	10
Continuous and Comprehensive Evaluation	**50**
Semester-End Evaluation	**50**

Evaluation Pattern for Four Years Course: (Total Semesters: 08 ; Total Credits: 176)

Semester: I

Course Code	Title of the Paper	Duration in Hrs.		Credit	Max. Marks		Total
		Theory	Practical		CCE (Formative) (Weekly Test/ Assignment/Attendance/ Practical/Viva/Group Discussion/Quiz)	SEE (Summative)	
PHM200-1C	Major Course- I	45	30	4	50	50	100
PHM201-1C	Major-Course-II	45	30	4	50	50	100
PHE200-1C	Minor Course- I	45	30	4	50	50	100
MDC201-1C	Multidisciplinary Course- I	15	30	4	50	50	100
AEC201-1C	Ability Enhancement Course- I	30	00	2	25	25	50
SEC201-1C	Skill Enhancement Course- I	15	30	2	25	25	50
IKS201-1C	Indian Knowledge System- I	15	30	2	25	25	50
Total		**210**	**180**	**22**	**275**	**275**	**550**

Semester- II

Course Code	Title of the Paper	Duration in Hrs.		Credit	Max. Marks		Total
		Theory	Practical		CCE (Formative) (Weekly Test/ Assignment/Attendance/ Practical/Viva/Group Discussion/Quiz)	SEE (Summative)	
PHM203-1C	Major Course- III	45	30	4	50	50	100
PHM204-1C	Major-Course- IV	45	30	4	50	50	100
PHE201-1C	Minor Course- II	45	30	4	50	50	100
MDC202-1C	Multidisciplinary Course- II	15	30	4	50	50	100
AEC202-1C	Ability Enhancement Course- II	30	00	2	25	25	50
SEC202-1C	Skill Enhancement Course- II	15	30	2	25	25	50

A50

VAC201-1C	Value Added Course- (NSS)	15	30	2	25	25	50
Total		**210**	**180**	**22**	**275**	**275**	**550**

Semester III

Course Code	Title of the Paper	Duration in Hrs.		Credit	Max. Marks		Total
		Theory	Practical		**CCE (Formative)** (Weekly Test/ Assignment/Attendance/ Practical/Viva/Group Discussion/Quiz)	**SEE** (Summ ative)	
PHM205-2C	Major Course- V	45	30	4	50	50	100
PHM206-2C	Major-Course- VI	45	30	4	50	50	100
PHM207-2C	Major Course- VII	45	30	4	50	50	100
MDC203-2C	Multidisciplinary Course- III	15	30	4	50	50	100
AEC203-2C	Ability Enhancement Course- III	30	00	2	25	25	50
SEC203-2C	Skill Enhancement Course- III	15	30	2	25	25	50
IKS202-2C	Indian Knowledge System- II	30	00	2	25	25	50
Total		**225**	**150**	**22**	**275**	**275**	**550**

Semester IV

Course Code	Title of the Paper	Duration in Hrs.		Credit	Max. Marks		Total
		Theory	Practical		**CCE (Formative)** (Weekly Test/ Assignment/Attendance/ Practical/Viva/Group Discussion/Quiz)	**SEE** (Summa tive)	
PHM208-2C	Major Course- VIII	45	30	4	50	50	100
PHM209-2C	Major-Course- IX	45	30	4	50	50	100
PHM210-2C	Major Course- X	45	30	4	50	50	100
PHE203-2C	Minor Course- III	15	30	4	50	50	100

A51

Course Code	Title of the Paper	Duration in Hrs.		Credit	Max. Marks		Total
AEC204-2C	Ability Enhancement Course- IV	15	30	2	25	25	50
SEC204-2C	Skill Enhancement Course- IV	15	30	2	25	25	50
VAC202-2C	Value Added Course- (NCC)	15	30	2	25	25	50
	Total	**195**	**210**	**22**	**275**	**275**	**550**

Semester V

Course Code	Title of the Paper	Duration in Hrs.		Credit	Max. Marks		Total
		Theory	Practical		CCE (Formative) (Weekly Test/ Assignment/Attendance/ Practical/Viva/Group Discussion/Quiz)	SEE (Summative)	
PHM301-3C	Major Course- XI	45	30	4	50	50	100
PHM302-3C	Major-Course- XII	45	30	4	50	50	100
PHM303-3C	Major Course- XIII	45	30	4	50	50	100
PHE301-3C	Minor Course- IV	45	30	4	50	50	100
PHE302-3C	Minor Course- V	45	30	4	50	50	100
SEC301-3C	Skill Enhancement Course- V	15	30	2	25	25	50
	Total	**240**	**180**	**22**	**275**	**275**	**550**

Semester VI

Course Code	Title of the Paper	Duration in Hrs.		Credit	Max. Marks		Total
		Theory	Practical		CCE (Formative) (Weekly Test/Assignment/Attendance/ Practical/Viva/Group Discussion/Quiz)	SEE (Summative)	
PHM304-3C	Major Course- XIV	45	30	4	50	50	100
PHM305-3C	Major-Course- XV	45	30	4	50	50	100
PHM306-3C	Major Course- XVI	45	30	4	50	50	100
PHE302-3C	Minor Course- VI	45	30	4	50	50	100

A52

AEC205-3C	Ability Enhancement Course- V	15	30	2	25	25	50
	Internship	00	120	4	50	50	100
	Total	**195**	**270**	**22**	**275**	**275**	**550**

Semester VII: Honours Degree

Course Code	Title of the Paper	Duration in Hrs.		Credit	Max. Marks		Total
		Theory	Practical		CCE (Formative) (Weekly Test/ Assignment/Attendance/ Practical/Viva/Group Discussion/Quiz)	SEE (Summa tive)	
PHM401-4C	Major Course- XVII	45	30	4	50	50	100
PHM402-4C	Major-Course- XVIII	45	30	4	50	50	100
PHM403-4C	Major Course- XIX	45	30	4	50	50	100
CHE401-4C	Minor Course- VII	45	30	4	50	50	100
	On-the-Job Training	00	180	6	75	75	150
	Total	**180**	**300**	**22**	**275**	**275**	**550**

Semester VIII: Honours Degree

Course Code	Title of the Paper	Duration in Hrs.		Credit	Max. Marks		Total
		Theory	Practical		CCE (Formative) (Weekly Test/Assignment/Attend ance/ Practical/Viva/Group Discussion/Quiz)	SEE (Summa tive)	
PHM404-4C	Major Course- XX	45	30	4	50	50	100
PHM405-4C	Major-Course- XXI	45	30	4	50	50	100
PHM406-4C	Major Course- XXII	45	30	4	50	50	100
CHE402-4C	Minor Course- VIII	45	30	4	50	50	100
	On-the-Job Training	00	180	6	75	75	150
	Total	**180**	**300**	**22**	**275**	**275**	**550**

A53

Semester VII: Honours with Research Degree

Course Code	Title of the Paper	Duration in Hrs.		Credit	Max. Marks		Total
		Theory/Report writing	Practical/Presentation		CCE (Formative) (Weekly Test/Assignment/Attendance/Practical/Viva/Group Discussion/Quiz)	SEE (Summative)	
PHM401-4C	Major Course- XX	45	30	4	50	50	100
PHM402-4C	Major-Course- XXI	45	30	4	50	50	100
PHM403-4C	Major Course- XXII	45	30	4	50	50	100
CHE401-4C	Minor Course- VIII	45	30	4	50	50	100
	Research Project	150	30	6	75	75	150
	Total	**330**	**150**	**22**	**275**	**275**	**550**

Semester VIII: Honours with Research Degree

Course Code	Title of the Paper	Duration in Hrs.		Credit	Max. Marks		Total
		Theory/Report writing	Practical/Presentation		CCE (Formative) (Weekly Test/Assignment/Attendance/Practical/Viva/Group Discussion/Quiz)	SEE (Summative)	
PHM404-4C	Major Course- XX	45	30	4	50	50	100
PHM405-4C	Major-Course- XXI	45	30	4	50	50	100
PHM406-4C	Major Course- XXII	45	30	4	50	50	100
CHE402-4C	Minor Course- VIII	45	30	4	50	50	100
	Research Project	150	30	6	75	75	150
	Total	**330**	**150**	**22**	**275**	**275**	**550**

Model of evaluation for 100 marks (4 Credits paper)

Continuous and Comprehensive Evaluation (CCE)- Formative- 50 Marks				Semester End Evaluation (SEE)- Summative- 50 Marks
Written	Oral	Practical	Integrated	Final Test

Written	Oral	Practical	Integrated	Final Test
1. Weekly/Unit Test 2. Open book/note test 3. Online test 4. Essay/Article writing 5. Objective test 6. Class/Home assignment 7. Reports Writing 8. Research/Dissertation 9. Case Studies 10. Project Writing 11. Journal Writing 12. Multiple Choice Questions 13. Seen/Open Question 14. Take Home 15. Assignment Writing	1. Viva/Oral exam 2. Group Discussion 3. Role Play 4. Authentic Problem Solving 5. Quiz 6. Interview 7. Open book reading 8. Inter Forum Debate 9. Speech 10. Reading Test	1. Lab work 2. Computer simulation/virtual labs 3. Craft work 4. Co-curricular work 5. Activities and brainstorming games	1. Paper presentation/ Seminar 2. Field Assignment 3. Poster presentation 4. Self and Peer Evaluation	1. Writing and Memory skill test
15	10	15	10	50

Model of evaluation for 50 marks (2 Credits paper)

Continuous and Comprehensive Evaluation (CCE)- Formative- 25 Marks				Semester End Evaluation (SEE)- Summative- 25 Marks
Written	Oral	Practical	Integrated	Final Test
1. Weekly/Unit Test 2. Open book/note test 3. Online test 4. Essay/Article writing 5. Objective test 6. Class/Home assignment 7. Reports Writing 8. Research/Dissertation 9. Case Studies 10. Project Writing 11. Journal Writing 12. Multiple Choice Questions 13. Seen/Open Question 14. Take Home 15. Assignment Writing	1. Viva/Oral exam 2. Group Discussion 3. Role Play 4. Authentic Problem Solving 5. Quiz 6. Interview 7. Open book reading 8. Inter Forum Debate 9. Speech 10. Reading Test	1. Lab work 2. Computer simulation/virtual labs 3. Craft work 4. Co-curricular work 5. Activities and brainstorming games	1. Paper presentation/ Seminar 2. Field Assignment 3. Poster presentation 4. Self and Peer Evaluation	1. Writing and Memory skill test
10	5	5	5	25

Note:

1. **HEIs may change the marks model in continuous and comprehensive evaluation (CCE) as per course requirements.**
2. **If required, HEIs may take exams of 100 marks each for CCE and SEE and assign pro-rata basis marks in the final marks sheet for calculation of grade sheet.**
3. **HEIs may arrange practical and viva evaluation either by internal faculty or along with external evaluator. Marks of practical and viva will be considered under CCE.**
4. **SEE written evaluation will be done mandatory in presence of external evaluator.**
5. **HEIs should choose different types of modes of evaluation in each category of CCE in multiplication of 5 marks. i.e., 1 type in 5 marks, 2 types in 10 marks and 3 types of modes of evaluation in 15 marks of evaluation. For example, Institution may adopt assignment test and weekly test in written mode of CCE evaluation for 10 marks.**

7.11 Letter Grades and Grade Points

The relative grading system provides the relative performance of a student to a group/class wherein the student is ranked in a group/class on the basis of relative level of achievements.

HEIs may also mention the marks obtained by the students in each course and a weightage average of marks on the Grade sheet for the benefits of the students.

Letter Grade	Grade Point	Marks (In %)
O (Outstanding)	10	96.0-100
A+ (Excellent)	9	86.0-95.9
A (Very Good)	8	76.0-85.9
B+ (Good)	7	66.0-75.9
B (Above Average)	6	56.0-65.9
C (Average)	5	46.0-55.9
P (Pass)	4	36.0-45.9
F (Fail)	0	Below 36.0
Ab (Absent)	0	Absent

Minimum passing marks for each pattern of evaluation (formative and summative):

Maximum Marks	Minimum Passing Marks
25	9
50	18
100	36

9.1 Credit Weightage

A. Under the guidelines issued by UGC, the credit weightage is suggested to be at least 5% of mandated credit (i.e., minimum of 8.8 credits in case of students enrolled for four-year UG Programme of 176 credits).
B. Furthermore, it is suggested that 50% credit assigned for IKS should be related to Major disciplines which are part of IKS (i.e., minimum 4.4 credits). Whereas the other 50% (i.e., minimum 4.4 credits) can be included as a part of the mandated Multidisciplinary courses that are to be taken by every student.
C. HEIs must also offer 2 courses of IKS with 2 credits each under Value added course (VAS). This would be the over and above the mandated credits suggested by UGC. This would be the general IKS topics.

A56

Guidelines for UG Programme in discipline that are part of IKS:

A. All HEIs are suggested to rooting the course curriculum and pedagogy in the Indian context and in the corpus of Indian Knowledge System. These courses need to be redesigned to ensure that these are anchored in the tradition of IKS.

B. The interested students my allowed to take a larger fraction of above mentioned total mandated credits in the field of IKS.

C. Course contents must be designed from ancient times up to the relatively recent period of nineteenth or twentieth century. Credits of the major and multidisciplinary relevant IKS contents would be calculated under major and multidisciplinary course respectively.

D. All HEIs should offer a large number of elective courses in IKS, from which the students may choose appropriately so as to complete a requisite number of courses and credits in IKS. These credits shall be apportioned to the core disciplinary course and the multidisciplinary courses. i.e., courses of Vedic mathematics in mathematics major course, Vedic foundation of Ayurveda in health science and so on.

E. Students may be encouraged to take these elective courses preferably during the first four semester of the UG Programmes.

F. It is very clear that HEIs either redesign the course curriculum to incorporate the IKS topics in their curriculum or offer major and multidisciplinary specific elective courses to fulfil the defined mandate credits in IKS.

G. Relevant to the concerned UG programme, students should be offered/ select foundational courses in IKS which will present an overall introduction to all the streams of IKS. The foundational course would be broad-based and shall cover introductory material on all aspects of IKS. These foundational courses can be offered under Value Added Course (VAC).

H. Students may be allowed to opt for Internship/Apprenticeship in any of the disciplines/topics that are part of IKS.

I. Students may be encouraged to choose a suitable topic related to IKS for their project work/OJT/Research Project in the 7th/8th semester of the UG Programmes.

J. For experiential aspects of IKS, sessions on Yoga, Meditation, Ayurveda, Classical Music, Tradition, and Indian Craft should be arranged for the students.

K. The students enrolled for UG programme for Sanskrit or Indian Language should take following course under IKS:

   i. Foundational Course for two -semester to present over all introduction of all streams of IKS.

   ii. Two-semester multidisciplinary course on IKS and Contemporary Knowledge in selected discipline. The University shall try to offer courses in several disciplines that are part of IKS.

9.5.2 Model Curriculum of IKS under VAC

Semester: 1 and 3

Course Credit: 2

Unit	Topics
1	Introduction to IKS 1. Introduction to IKS and Its importance • Introduction & importance of IKS

		• Various IKS Systems
		2. Shastra- Foundational Literature of Bharatvarsha
		• What is Shastra
		• Importance of Shastra
		• Classification of Sashtra
		3. Base of IKS Proliferation
		• Bhartiya education system and its philosophy
		• Domain of education: Gurukul, Pathshala, Vidyalaya, Vishwavidyalaya
2		**Contribution of IKS**

✓ **Mathematics & Astronomy**
- Numbers and Numeric System
- Algebra and Arithmetic
- Geometry
- Trigonometry
- Planetary System
- Speed of light
- Eclipse

✓ **Life Science**
- Physics
- Chemistry
- Botany

✓ **Metal Technology**
- Mining Techniques
- Types of metals
- Tools and techniques for metal smelting with example

✓ **Town planning and Temple architecture**
- Indigenous tools and technologies for town planning and temple architecture
- Science of architecture
- Lothal, Mohanjo Daro, Dholavira
- Angkorvat, Lepakshi Temple, Jagannath Puri Temple, Thanjavur Temple, Modhera and Konark sun Temple, Hampi Temple etc.

✓ **Ayurveda**
- Introduction of Ayurveda
- Concept of Tri-Dosh and importance of its balance in the body
- Indic Medical Science achievement- tools and technology

✓ **Arts & Traditions**
- History and Origin
- Skills enhancement with 64 kala
- Science behind our traditions and rituals

More Topics in IKS

1. Indic Education System-

Unit	Main Topic	Sub Topic
1	Introduction to Ancient Indian Education System	• Overview of Indic Education System • Fundamentals of Indic Education System • Evolution (Introduction to Rig-Veda) • Later Vedic Age
2	History of Ancient India Education System	• Vedas • Sutra/Epics • Maurya age and Gupta age • Buddhist Education System
3	Ancient Indian Educational System	• Takshila, Mithila • Nalanda, Prayagraj • Valabhi, Varansi, Nadiya • Vikramshila, Odantapuri, Jagaddala
4	Management of Indian Education System	• Ashrams • Gurukuls • Parishad • Sammelan
5	Chronology of declination of Indian Education System	• Biggening of end (Decline) • Causes of declination • Effects of decline • Prevention (importance and realization of what we lost)
6	Contemporary Indian Education System	• Pre-Independence education system • Post-Independence education system • Introduction of English language education • NEP-2020

2. भारतीय पुरालिपि विज्ञान (Indic Palaeography)

इकाई	मुख्य विषय	उपविषय
1	लिपि की उत्पत्ति और विकास	• विश्व में लिपियों का इतिहास • भारत में प्राचीन लिपियों का इतिहास • लिपि की शुरुआत – वर्णमाला का निर्माण
2	भारतीय लिपियाँ	• अठारह लिपियों के नाम और इतिहास • ब्राह्मी लिपि को पढ़ने और पहचानने का इतिहास • शारदा लिपि का इतिहास • नागरी लिपि का इतिहास
3	ब्राह्मी लिपि का अध्ययन	• वर्णमाला – स्वर, व्यंजन • अशोक का शिलालेख

		• लिप्यंतरण का अध्ययन • लिप्यंतरण
4	शारदा लिपि का अध्ययन	• वर्णमाला – स्वर – व्यंजन • संयुग्मन • लिप्यंतरण का अध्ययन • लिप्यंतरण
5	नागरी लिपि का अध्ययन	• वर्णमाला – स्वर – व्यंजन • संयुग्मन • लिप्यंतरण का अध्ययन
6	भारत के प्रमुख पांडुलिपि संग्रहालयों का इतिहास	• सरस्वती पुस्तकालय, वाराणसी • एशियाटिक सोसाइटी, कलकत्ता • हेमचंद्राचार्य ज्ञानभंडार, पाटन • शांतिनाथ पांडुलिपि संग्रह, खंभात • महावीर जैन उपासना केंद्र, कोबा • राजस्थान प्राच्य विद्यामंदिर, जोधपुर • एल. डी. इंडोलॉजी संस्थान, अहमदाबाद • बी. एल. इंडोलॉजी संस्थान, दिल्ली • पाण्डुलिपि के लिए राष्ट्रीय मिशन – भारत सरकार • भारत के अन्य ग्रंथ भंडार • विदेशों में पांडुलिपियां एकत्र करें
7	हस्तप्रत प्रकार, हस्तप्रत सूचिपत्र,सम्पादन, हस्तप्रत साहित्य	• हस्तप्रत प्रकार • हस्तप्रत सूचिपत्र • सम्पादन के आरंभिक नियम • हस्तप्रत साहित्य
8	सम्पादन के नियम, दुर्लभ पोथिया, लघुकृति सम्पादन	• सम्पादन के नियम • सस्वर पाठ (2) टिप्पणियाँ (3) परिशिष्ट (4) वर्णानुक्रमिक सूचियाँ(5) उद्धरणों की सूची (6) विशेष नाम, गाँव का नाम आदि • दुर्लभ पोथिया • एक ही किताब से संपादन • अनेक पुस्तकों के आधार पर संपादन • लेखक और ग्रंथों का इतिहास • समय निर्धारण के नियम

3. भारतीय लेखन विद्या (Indic Manuscriptology)

इकाई	मुख्य विषय	उपविषय
1	लिपि की उत्पत्ति और विकास	• लिपि का प्रारम्भ और वर्णमाला की रचना • विश्व में लिपियों का इतिहास • भारत में प्राचीन लिपियों का इतिहास
2	ब्राह्मी लिपि की उत्पत्ति और विकास	• ब्राह्मी लिपि का इतिहास • अशोक के शिलालेख का इतिहास • ब्राह्मी लिपि की वर्णमाला का परिचय • स्वर, व्यंजन, संयुक्ताक्षर • ब्राह्मी लिपि वांचन (अशोक के शिलालेख)
3	नागरी लिपि का इतिहास	• नागरी लिपि - वर्णमाला • स्वर, व्यंजन, संयुक्ताक्षर • भ्रामक वर्ण, संयुक्ताक्षर, अंक • नागरी लिपि का अभ्यास
4	हस्तप्रत का इतिहास	• हस्तप्रत के प्रकार • लेखन कला का इतिहास • लिपि
5	शारदा लिपि का अध्ययन	• वर्णमाला - स्वर - व्यंजन • संयुग्मन • लिप्यंतरण का अध्ययन • लिप्यंतरण
6	संपादन कला	• विभिन्न हस्तप्रत • कुल और पाठ • पाठ निर्धारण विधि • संपादन में प्रयुक्त चिह्न
7	हस्तप्रत सुरक्षा	• सुरक्षा पद्धति • संरक्षण पद्धति • हस्तप्रत सूचीकरण • आदिवाक्य , मंगलाचरण • अंतिम वाक्य - पुष्पिका • समयनिर्धारण

4. Indic Philosophy (भारतीय दर्शन)

Unit	Main Topic	Sub Topic
1	Introduction of Indian Philosophy	• Civilization : Definition, Meaning, Approach • Indian Civilization : Age, Characteristics, Timeline • Indian Belief & Values • Vaidic Literature • Classification of Indian Philosophy
2	History of Indian Philosophy	• Belief on emergence of Indian Civilization • Method of Vaidik Studies • Samhita – Brahman – Aranyak – Upanishads • Agam,Shruti,Smruti • Avaidic Sahitya
3	Approaches of Indian Philosophy	• Types of Approach • Adwait and Dwait • Vaishashik & Charvak • Ultimate goal of life • Comparison with Western Philosophy
4	सांख्य दर्शन	• Introduction to Kapila & Sankhya • Sankhya Vad • Its Relevance with modern science (material science)
5	योग दर्शन	• Introduction to Yoga • Philosophy of Yoga • Elements of Yoga • Hath Yoga and Samadhi • THe changing trends of Yoga
6	वैशेषिक दर्शन	• Introduction to Kanad • Concept of Reality • Understanding of Padarth, Dravya, Gun • Relation with Modern & Mental Science
7	न्याय दर्शन	• Introduction to Gautam • Principals of Nyay Sutras • Commentaries • Comparison of Nyay and Vaisheshik • Relevance of Nyay with Logic
8	मीमांसा	• Introduction to Jaimini & Vyasa • Concept of Dharma & Brahma • Commentaries of mimansa sutra & brahma sutro • Elements of Mimansa and methods • Relevance of Purva Mimansa with Yagna & Karma • Relevance of uttar Mimansa with Karma & Moksh

5. Indic Chronology

Unit	Main Topic	Sub Topic
1	Ancient Indian Eras	• Saka Era and Sakanta Era • The Epoch of Buddha Nirvana • Mahavira Nirvana and Vikrama Era • Gupta Era and Valabhi Era • Sri Harsha Era and Kalachuri-Chedi Era • Other Indian Eras
2	Magadha Empire, Buddhism and Jainism	• Chronology of Magadha Empire • History of Buddhism • History of Jainism • Date of Adi Sankaracharya
3	Uttarapatha and Dakshinapatha Kingdoms	• Uttarakatha Kingdoms • Dakshinapatha Kingdoms • Chronology of Muslim Rulers in India • Vijayanagara Empire
4	Regional History	• History of Jammu and Kashmir • Chronology of Tamilnadu • Chronology of Kalinga • Chronology of Sri Lanka, Burma and Tibet
5	World History	• The Epoch of Christian Era • Chronology of Persia • Chronology of Egypt • Chronology of Sumer, Babylon, Assyria • Chronology of Greece and Roman Empire • Chronology of China Methods to study reference material

6. Vedant

Unit	Main Topic	Sub Topic
1	Sadhana for Moksha	• Purushartha & Scriptures • Varna Vyavastha & Aashrama Vyavasatha • Understanding God • Religion and Spirituality • Dharma (Saamanya Dharma and Vishesha Dharma)
2	Concept of Purushartha & Dharma	• Saadhanas for moksha: Karma Yoga • Saadhanas for moksha: Upaasana Yoga • Saadhana chatushtthaya: Qualifications for entering Gnyaana Yoga • Saadhanas for moksha: Gnyaana Yoga • Saadhanas for moksha: Bhakti Yoga
3	Atma-Gnyaanam	• Jeeva vichara: analysis of the individual (shareera trayam, avastha trayam, pancha kosha)

A63

Unit	Main Topic	Sub Topic
		• Atma
		• Samashti vicharaha: Cosmology
		• Jeeva Eeshwara Aikyam
		• Means to attain Atma-Gnyaanam

7. Indic Knowledge Traditions

Unit	Main Topic	Sub Topic
1	• Introduction to Indic Knowledge Tradition	• Education • Trade and Commerce • Governance • Science and Technology • Architecture • Literature
2	• Importance to Indic Knowledge Tradition	• Importance to Indic Knowledge Tradition in contemporary period • Research in Indian Knowledge Tradition • Methods of study

List of Multidisciplinary topics that are part of IKS:

1. Analytic Philosophy
2. Ancient Indian Culture
3. Cultural Indian Middle Era
4. Health & Yoga
5. Human Value & Indian Ethics
6. Indian Banking & Currency System
7. Indian Constitution
8. Indian Philosophy
9. Meta Physics
10. Natural Resource Management
11. Philosophy of Education
12. Social & Political Philosophy
13. Study of Great Kings of India
14. Study of Indian Ayurveda System & Use of herbs
15. Traditional Knowledge Intellectual Property and People's right
16. Views of Chanakya on Indian Political System

IKS Related topic for Internship/Apprenticeship/Research Projects:

1. Exploring mineral acids in Rasayana Shastra texts from ancient and medieval India.
2. Analysis of Sound Spectrum of Mantras and their relationship with Geometric Patterns of Yantras.
3. Development of conversational Sanskrit translator using Neural Machine Translation.
4. Sanskrit Word Order following the Steps of target language.
5. Neeti Shastras and Modernity: Understanding the Reflective Equilibrium between Hermeneutics of Normative Texts and Practice.
6. Traditional Principles of Settlement Planning in Heritage Temple Sites of Odisha / erstwhile Kalinga Region.
7. Combustion experiments to understand the by-products of the Agnihotra Process.
8. Impact of Indian Classical Raga on human cognitive function: A neuropsychological study using EEG.

A64

9. Designing a Prototype settlement for a Contemporary Sustainable Town as per the prescriptions of Vaastushastra.
10. Revitalizing Indigenous Knowledge of Sustainable Farming Practices in Northeast India by Integrating Conservation, Research and Entrepreneurship.
11. Reflections of Traditional Indian Knowledge in Pala and Daskathia and their Educational Implications in Rural Social Context.
12. Sanskrit to Indian Language Machine Translation cum Language Accessor.
13. Decoding Ancient Knowledge of Temple Tanks on Lord Shiva's Pancha Bootha Sthala.
14. Development of Eco-friendly Ancient Indian Clay, Ceramic Idols/potters of Traditional Importance by Extrusion Based 3D printing.
15. Automated Question-Answering System for Ramayana.
16. Demarcation of Ramakatha through Samvada.
17. Production of coloured cotton using ancient chemical formulations taken from the Sanskrit text Vishvavallabha.
18. Investigation of traditional iron monuments in the central India and understanding their metallurgical origins.
19. Development of Fe-based composite materials mimicking Delhi iron pillars structure.
20. An in-depth study oriented towards rejuvenation of traditional Sanskrit purana katha akhyana traditions of Kerala Pathakam and Chakyar koothu.
21. Demonstration and Reproduction with Scientific Validation of some Ceramic Materials Knowledge System of Ancient-India.
22. A study and adaption of ancient Indian alloy processing and metallurgical technologies for self-healing and gradient structure applications.
23. Mathematical modelling and Investigation of vibration and sound characteristics of Indian bowed stringed musical instruments.
24. Correlation studies of copper artifacts (2500-200 BCE) from Varanasi region and copper mining and smelting in tribal areas of Singhbhum.
25. Hita and Sukha Ayu Wellbeing Wellness and Happiness Index.
26. Nyayanjanam Indian Logic Assistance Tool.
27. Yoga and Ayurveda Knowledge Engine based Wellness Technology with Wearable and Mobile app.
28. A Survey of Water Resources of Vidarbha Region Based on Indian Dakargala System.
29. Centre for Shaastric Studies and Research in Law.
30. NIAS IKS Centre on Mathematics, Computation, and Information Science.
31. Siksha O Anusandhan IKS Center.
32. Early Science Technology Engineering Education and Mathematics ESTEEM of India Research Center.
33. Avadhanakala and Consciousness Studies.
34. Dhaarana.
35. In vitro evaluation of Antioxidant free radical scavenging activity and Anti Proliferative properties of some indigenous Ayurveda medicinal plants used by selected Tribes groups of Andhra Pradesh.
36. Development and characterization of novel metallic Vajra Lep coating.
37. Towards Reinstatement of Ancient Soil Classification System.
38. A Conservation approach for Structural Heritage of the Ahom Dynasty through the intervention of Science & Technology (CASHAD).
39. Study of construction methodology and composition of brick and mortar used in the masonry of Nalanda Mahavihara.

A65

40. Synthesis of Vaastushastra, Sthaptyavidya, Environmental Planning & Indigenous Construction Techniques in Lakhamandal and Mahasu Temple Complex (ASI Monuments) in Dehradun, Uttarakhand.
41. Restoration of Lonari Salt.
42. Development and Application of natural dyes for reviving handloom and improving human wellness.
43. Development of eco-friendly and sustainable natural dyes from plant extract.
44. Impact of Satvik Food on the Gut-Microbiome Diversity: An Ayurgenomics Perspective.
45. Evaluation of Various Traditional Indian Blood Purification (Raktamokshan) Medicines using 3D Bio-Printed Microfluidic Organ-on-Chip Platforms.
46. Development of Mobile Application for detecting Tridoshas (Pitta, Vata, Kapha) and personality traits from voice.
47. Assessing the effect of Bhramari Pranayama and Shloka recitation on attention and wellbeing of young students by analysing Heart Rate Variability, Galvanic Skin Response and Temperature.
48. Investigation and development of enhanced siddha diagnostic uroscopy "Neikuri" using dynamic image processing.
49. Prana Based Vedic Solutions for Minimizing Suicidal Ideation.
50. Town planning and water resource management of Udupi Heritage towns of Barkuru and Moodabidri and surrounding region.
51. Orientation of temples of South India and their astronomical associations.
52. Exposition/Compendium of nuanced mathematical and astronomical constructs in classical commentaries.
53. Mathematics and Nyaaya Darshana.
54. उत्तर भारत में लोहे पर धातुकर्म कार्यों की पहचान और वर्तमान में पारंपरिक तरीकों से ग्रामीण क्षेत्रों में उपयोगिता ।
55. Scientific Investigation of Ancient Knowledge System of Haematite Materials used in the Rock Art of Kaimur Range
56. A Traits-based Model of Leadership derived from Bhoja's Aesthetic Theory of Nayakas.
57. Entrepreneurship Intention and Behavior: Theoretical and Empirical Studies based on Tri Gunas, Tri Shaktis and five Factors of Action and Result given in IKS.
58. Application of Methodological Thinking of Shad-Darshanas to Modern Basic Science Curriculum.
59. Political Concepts in Ramayana, Mahabharata and Arthashastra: An Analysis of Sovereignty, Kingship, Welfare, Market, Diplomacy and War.
60. Obstacles (Upadhis) in Reading and Interpreting in Reading Indian Texts: Alternative Possibilities from Indian Traditions.
61. The relevance and applicability of Chanakya's (Kautilya) Arthasastra for solving current societal problems.
62. Investigating the Role of Household Savings for Sustainable Economic Development – Demonstrating The 'Indian Way'.
63. International Relations of the Chola Dynasty: Evaluation of Diplomacy Strategies with China, East-Asian Countries, and Sri Lanka and their Applications to Current Scenario.
64. Corporate Social Responsibility: A Philosophical Social Engineering approach from an ancient Indian Perspective.
65. Validation of Ayurvedic formulation as an Antibiotic sparring Therapy against Urinary Tract infections in cattle.
66. Study on the effect of Krimighna ghana from Charaka Samhita in treating bovine mastitis.

67. Applications of Sthapatya Veda and Vedic Architecture in Creating Healthy Indoor Environment – Study area of Varanasi.
68. Study of Design Principles and Indigenous Construction Techniques used in Mahakaal Temple, Ujjain across Era.
69. Remodeling Technology Integrated Validation of Ayurveda Jihva: Corroborating Saam Jihva Pariksha to Multiple Biomarker Detection Using Point of Care Paper-based Device.
70. Forging the Past: Investigating the Manufacturing of Iron Beams Used in Konarka Sun Temple and analysing Their Socio-Economic Impact on the Local Community.
71. Folklores & Legends of Central Kerala Devi Temples - Socio-Cultural Model based on Emic Perspective.
72. Moving beyond Western Categories: Understanding Sampradaya and sampradayik knowledge in the Vallabhacharya and Chaitanya Vaishnava traditions.
73. Development of quality biofertilizer using cow dung: Metagenomic studies of Gir and Kankrej breed.
74. Microbial interventions and traditional farming practices for sustainable millet production.
75. Lab to Land validation of Panchgavya formulations as bio-immunizer for sustainable crop and soil health improvement.
76. भारतीय संस्कार विज्ञान, मंदिर स्थापत्य कला, भारतीय मूर्तिकला, भारतीय जीवन परम्परा- मेला और उत्सव

Note:

The contents/topics to be prepared by the HEIs for the subjects for IKS won't be restricted to above mentioned topics. The HEIs may add more topics as per requirement in particular subjects. Main focus would be to cover the subject relevant ancient IKS contents, as per learning hours and allocated credits. This will facilitate the students to understand our Indian Knowledge System.