CHILDREN'S EDUCATION SOCIETY(Regd.)
THE OXFORD COLLEGE OF ENGINEERING
(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.
Accreditated NAAC 'A' Grade, Approved by A.I.C.T.E. New Delhi. Recognised by UGC Under Section 2(f))
Bommanahalli, Hosur Road, Bangalore-560068. Ph:080-61754601/602,Fax:080-25730551
E-mail:engprincipal@theoxford.edu. Web:www.theoxfordengg.org

CROSSCUTTING ISSUES 2022-23

PRINCIPAL
The Oxford College of Engineering
Bommanahalli, Hosur Road
Bangaluru-560 068

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Summary on Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

The Oxford College of Engineering, Bangalore has prioritizes a comprehensive education that seamlessly integrates crosscutting issues into its curriculum, ensuring a well-rounded and socially responsible learning experience. Professional ethics are focal point, with dedicated modules designed to instill an understanding and adherence to ethical standards in various fields. The inclusion of gender perspectives raises awareness of equality challenges and fosters inclusivity. The curriculum places strong emphasis on human values, nurturing qualities like empathy and integrity deemed essential for navigating complex professional landscapes. Environmental considerations are seamlessly woven into coursework, fostering an understanding of ecological footprint associated with diverse professions. Sustainability principles are integrated, encouraging students to evaluate the long-term impacts of their decisions across economic, social, and environmental dimensions. The institution promotes a collaborative and inclusive learning environment through group projects and team-based activities, facilitating engagement with peers from diverse backgrounds. This collaborative ethos mirrors the professional world, enhancing cultural competence and interpersonal skills crucial for success in any field. This holistic approach ensures that graduates not only possess technical expertise but also grasp the broader societal and environmental implications of their work, shaping conscientious professionals capable of navigating the intricate interplay between their careers and the world around them.

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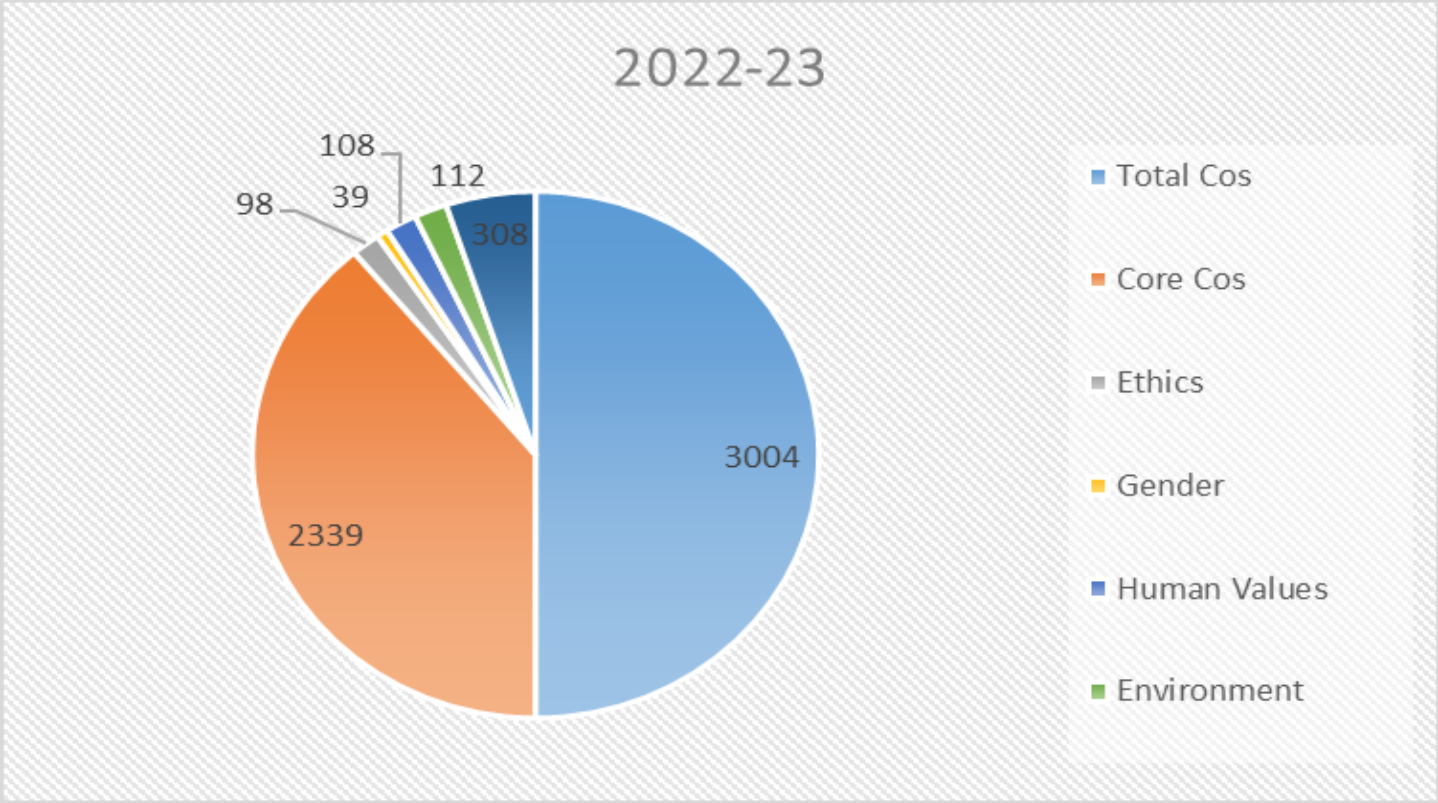
Departmental wise- Course Outcome's (Cos) with Crosscutting Issues- Academic Year 2022-23

Department	Total Number of Courses	Total Cos	Core Cos	Ethics	Gender	Human Values	Environment	Field Visit / Research / Internship / Project
CSE	58	267	215	10	5	11	7	19
CIVIL	64	314	234	11	2	14	28	25
ECE	63	312	258	9	4	7	9	25
Mechatronics	60	261	215	7	3	9	8	19
Biotechnology	66	250	165	19	8	15	16	27
ISE	58	286	238	9	5	11	7	16
EEE	59	296	228	8	4	10	11	35
Mech	66	291	227	11	2	13	16	22
AIML	35	168	138	9	4	5	9	3
PG CSE	18	68	62	0	0	1	0	5
PG CIVIL	20	83	67	0	0	0	0	16
PG ECE	19	125	74	0	0	0	0	51
MBA	31	133	95	2	2	7	1	26
MCA	31	150	123	3	0	5	0	19
Total	648	3004	2339	98	39	108	112	308

Total Cos	Core Cos	Ethics	Gender	Human Values	Environment	Field Visit / Research / Internship / Project
3004	2339	98	39	108	112	308



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Institution integrates crosscutting issues – Curriculum CO-PO-PSO Mapping 2022-23

S.No	Year /Semester	Name of the Program	Name of the Course	Course Code	Cross Cutting issues	PO, CO, PSO,Mapping
1	3rd Year/5th sem	Department of Biotechnology	Bio-Business and Entrepreneurship	18BT51	Professional Ethics	PO 8- CO 1- PSO 2
2	1st Year/1st sem	Department of Biotechnology	Indian Constitution	BICOK107-207	Professional Ethics	PO 8- CO 5- PSO 2
3	2nd Year/3rd and 4th sem	Department of Biotechnology	Constitution of India and Professional Ethics	21CIP37/47	Professional Ethics	PO 8- CO 5- PSO 2
4	4th Year/7th sem	Department of Biotechnology	Bioethics, Biosafety& IPR	18BT741	Professional Ethics	PO 8- CO 2- PSO 2
5	3rd Year/6th sem	Department of Biotechnology	Food Process Engineering	18BT641	Professional Ethics	PO 8- CO 1- PSO 2
6	2nd Year/3rd and 4th sem	Department of Information Science & Engineering	Constitution of India and Professional Ethics	21CIP37/47	Professional Ethics	PO 8- CO 5- PSO 2
7	1st Year/1st sem	Department of Information Science & Engineering	Indian Constitution	BICOK107-207	Professional Ethics	PO 8- CO 5- PSO 2
8	2nd Year/3rd and 4th sem	Department of Information Science & Engineering	Constitution of India and Professional Ethics	21CIP37/47	Professional Ethics	PO 8- CO 5- PSO 2
9	1st Year/1st sem	Department of Mechanical Engineering	Indian Constitution	BICOK107-207	Professional Ethics	PO 8- CO 5- PSO 2
10	2nd Year/3rd and 4th sem	Department of Mechanical Engineering	Constitution of India and Professional Ethics	21CIP37/47	Professional Ethics	PO 8- CO 5- PSO 2
11	2nd Year/3rd and 4th sem	Department of Computer Science & Engineering	Constitution of India and Professional Ethics	21CIP37/47	Professional Ethics	PO 8- CO 5- PSO 2
12	1st Year/1st sem	Department of Computer Science & Engineering	Indian Constitution	BICOK107-207	Professional Ethics	PO 8- CO 5- PSO 2
13	2nd Year/3rd and 4th sem	Department of Electrical and Communication	Constitution of India and Professional Ethics	21CIP37/47	Professional Ethics	PO 8- CO 5- PSO 3

		Engineering				
14	1st Year/1st sem	Department of Electrical and Communication Engineering	Indian Constitution	BICOK107-207	Professional Ethics	PO 8- CO 5- PSO 3
15	1st Year/1st sem	Department of Artificial Intelligence and Machine Learning	Indian Constitution	BICOK107-207	Professional Ethics	PO 8- CO 5- PSO 2
16	2nd Year/3rd and 4th sem	Department of Artificial Intelligence and Machine Learning	Constitution of India and Professional Ethics	21CIP37/47	Professional Ethics	PO 8- CO 5- PSO 2
17	1st Year/1st sem	Department of Mechatronics	Indian Constitution	BICOK107-207	Professional Ethics	PO 8- CO 5- PSO 1
18	3rd Year/5th sem	Department of Civil Engineering	Design of RC structural elements	18CV53	Professional Ethics	PO 8- CO 4- PSO 3
19	3rd Year/5th sem	Department of Civil Engineering	Construction management and entrepreneurship	18CV51	Professional Ethics	PO 8- CO 4- PSO 3
20	1st Year/2nd Sem	Department of Civil Engineering	Indian Constitution	BICOK207	Professional Ethics	PO 8- CO 5- PSO 3
21	1st Year/1st sem	Department of Electrical & Electronics Engineering	baLake Kannada	BKBKK107-207	Professional Ethics	PO 8- CO2- PSO 3
22	1st Year/2nd Sem	Department of Electrical & Electronics Engineering	Indian Constitution	BICOK207	Professional Ethics	PO 8- CO 5- PSO 3
23	2nd Year/3rd and 4th sem	Department of Electrical & Electronics Engineering	Constitution of India and Professional Ethics	21CIP37/47	Professional Ethics	PO 8- CO 5- PSO 3
24	1st Year/1st Sem	Department of Business Administration	Entrepreneurship Development	22MBA12	Professional Ethics	PO 8- CO 5- PSO 3
25	2nd Year/3rd Sem	Department of Business Administration	Emerging Exponential Technologies	20MBA301	Professional Ethics	PO 8- CO 4- PSO 3
26	2nd Year/4th Sem	Department of Business Administration	Organisational Leadership	20MBAHR401	Professional Ethics	PO 8- CO 3- PSO 3
27	2nd Year/4th Sem	Department of Business Administration	Intenational Human Resource Management	20MBAHR403	Professional Ethics	PO 8- CO 4- PSO 3

28	2nd Year/3rd Sem	Master of Computer Applications	Software Project Management	20MCA354	Professional Ethics	PO 8- CO 2- PSO 3
29	1st Year/2nd Sem	Master of Computer Applications	User Interface Design	22MCA254	Professional Ethics	PO 8- CO 2- PSO 3
30	1st Year/1st sem	Department of Mechanical Engineering	Indian Constitution	BICOK107-207	Gender	PO 6- CO 5- PSO 2
31	3rd Year/5th sem	Department of Biotechnology	Genetic Engineering &Applications	18BT56	Gender	PO 6- CO 4- PSO 2
32	1st Year/1st sem	Department of Artificial Intelligence and Machine Learning	Indian Constitution	BICOK107-207	Gender	PO 6- CO 5- PSO 2
33	2nd Year/3rd and 4th sem	Department of Artificial Intelligence and Machine Learning	Constitution of India and Professional Ethics	21CIP37/47	Gender	PO 6- CO 5- PSO 2
34	1st Year/2nd Sem	Department of Civil Engineering	Indian Constitution	BICOK207	Gender	PO 6- CO 5- PSO 2
35	1st Year/2nd Sem	Department of Electrical & Electronics Engineering	Indian Constitution	BICOK207	Gender	PO 6- CO 5- PSO 3
36	2nd Year/4th Sem	Department of Business Administration	Organisational Leadership	20MBAHR401	Gender	PO 6- CO 2- PSO 2
37	2nd Year/4th Sem	Department of Business Administration	Intenational Human Resource Management	20MBAHR403	Gender	PO 6- CO 4- PSO 2
38	1st Year/1st sem	Department of Biotechnology	Scientific Foundations of Health	BSFHK158/258	Human Values	PO 3- CO 3- PSO 2
39	2nd Year/3rd sem	Department of Biotechnology	Microbiology lab	21BTL35	Human Values	PO 3- CO 3- PSO 2
40	2nd Year/3rd sem	Department of Biotechnology	Social Connect and Responsibilities	21UH36	Human Values	PO 3- CO 1- PSO 2
41	2nd Year/4th sem	Department of Biotechnology	Universal Human Values II: Understanding, Harmony and Ethical Human Conduct	21UHV49	Human Values	PO 3- CO 5- PSO 2
42	2nd Year/3rd and 4th sem	Department of Information Science & Engineering	Constitution of India and Professional Ethics	21CIP37/47	Human Values	PO 3- CO 5- PSO 2

43	2nd Year/4th sem	Department of Information Science & Engineering	Universal Human Values II: Understanding, Harmony and Ethical Human Conduct	21UHV49	Human Values	PO 3- CO 5- PSO 2
44	1st Year/1st sem	Department of Information Science & Engineering	Scientific Foundations of Health	BSFHK158/258	Human Values	PO 3- CO 3- PSO 2
45	1st Year/1st sem	Department of Mechanical Engineering	Scientific Foundations of Health	BSFHK158/258	Human Values	PO 3- CO 3- PSO 2
46	2nd Year/4th sem	Department of Mechanical Engineering	Universal Human Values II: Understanding, Harmony and Ethical Human Conduct	21UHV49	Human Values	PO 3- CO 5- PSO 2
47	1st Year/1st sem	Department of Mechanical Engineering	Indian Constitution	BICOK107-207	Human Values	PO 3- CO 5- PSO 2
48	2nd Year/3rd and 4th sem	Department of Computer Science & Engineering	Constitution of India and Professional Ethics	21CIP37/47	Human Values	PO 3- CO 5- PSO 2
49	2nd Year/4th sem	Department of Computer Science & Engineering	Universal Human Values II: Understanding, Harmony and Ethical Human Conduct	21UHV49	Human Values	PO 3- CO 5- PSO 2
50	1st Year/1st sem	Department of Computer Science & Engineering	Scientific Foundations of Health	BSFHK158/258	Human Values	PO 3- CO 3- PSO 2
51	2nd Year/3rd and 4th sem	Department of Electrical and Communication Engineering	Constitution of India and Professional Ethics	21CIP37/47	Human Values	PO 3- CO 5- PSO 3
52	1st Year/1st sem	Department of Electrical and Communication Engineering	Scientific Foundations of Health	BSFHK158/258	Human Values	PO 3- CO 5- PSO 3
53	1st Year/1st sem	Department of Artificial Intelligence and Machine Learning	Indian Constitution	BICOK107-207	Human Values	PO 3- CO 5- PSO 2
54	2nd Year/4th sem	Department of Artificial Intelligence and Machine Learning	Universal Human Values II: Understanding, Harmony and Ethical Human Conduct	21UHV49	Human Values	PO 3- CO 5- PSO 2

55	1st Year/1st sem	Department of Artificial Intelligence and Machine Learning	Scientific Foundations of Health	BSFHK158/258	Human Values	PO 3- CO 3- CO 2
56	2nd Year/3rd and 4th sem	Department of Artificial Intelligence and Machine Learning	Constitution of India and Professional Ethics	21CIP37/47	Human Values	PO 3- CO 5- PSO 2
57	2nd Year/4th sem	Department of Mechatronics	Universal Human Values II: Understanding, Harmony and Ethical Human Conduct	21UHV49	Human Values	PO 3- CO 5- PSO 1
58	1st Year/1st sem	Department of Mechatronics	Scientific Foundations of Health	BSFHK158/258	Human Values	PO 3- CO 5- PSO 1
59	1st Year/2nd Sem	Department of Civil Engineering	Indian Constitution	BICOK207	Human Values	PO 3- CO 5- PSO 3
60	2nd Year/4th Sem	Department of Civil Engineering	Universal Human Values II: Understanding, Harmony and Ethical Human Conduct	21UHV49	Human Values	PO 3- CO 5- PSO 3
61	1st Year/1st sem	Department of Civil Engineering	Scientific Foundations of Health	BSFHK158/258	Human Values	PO 3- CO 5- PSO 3
62	2nd Year/4th Sem	Department of Civil Engineering	Public Health Engineering	21CV43	Human Values	PO 3- CO 1- PSO 3
63	1st Year/2nd Sem	Department of Electrical & Electronics Engineering	Indian Constitution	BICOK207	Human Values	PO 3- CO 5- PSO 3
64	1st Year/1st sem	Department of Electrical & Electronics Engineering	Scientific Foundations of Health	BSFHK158/258	Human Values	PO 3- CO 3- CO 3
65	3rd Year/5th sem	Department of Electrical & Electronics Engineering	Management and Entrepreneurship	18EE51	Human Values	PO 3- CO 2- PSO 3
66	2nd Year/3rd sem	Department of Electrical & Electronics Engineering	Social Connect and Responsibilities	21SCR36	Human Values	PO 3- CO 1- CO 3
67	2nd Year/3rd and 4th sem	Department of Electrical & Electronics Engineering	Constitution of India and Professional Ethics	21CIP37/47	Human Values	PO 3- CO 5- PSO 3

68	1st Year/1st Sem	Department of Business Administration	Principles of Management and Organisational Behaviour	22MBA11	Human Values	PO 3- CO 3- PSO 3
69	1st Year/1st Sem	Department of Business Administration	Marketing Management	22MBA15	Human Values	PO 3- CO 5- PSO 3
70	1st Year/1st Sem	Department of Business Administration	Business Communication	22MBA16	Human Values	PO 3- CO 1- PSO 3
71	2nd Year/4th Sem	Department of Business Administration	Personal Growth and Interpersonal Effectiveness	20MBAHR402	Human Values	PO 3- CO 4- PSO 3
72	2nd Year/3rd Sem	Master of Computer Applications	Software Project Management	20MCA354	Human Values	PO 3- CO 2- PSO 3
73	1st Year/2nd Sem	Master of Computer Applications	User Interface Design	22MCA254	Human Values	PO 3- CO 3- PSO 3
74	3rd Year/5th sem	Department of Biotechnology	Bio-Business and Entrepreneurship	18BT51	Environment and Sustainability	PO 7- CO 1- PSO 2
75	3rd Year/5th sem	Department of Biotechnology	Environmental Studies	18CIV59	Environment and Sustainability	PO 7- CO 1- PSO 2
76	4th Year/7th sem	Department of Biotechnology	Energy and Environment	18ME751	Environment and Sustainability	PO 7- CO 3- PSO 2
77	2nd Year/3rd Sem	Department of Biotechnology	Microbiology	21BT34	Environment and Sustainability	PO 7- CO 3- PSO 2
78	3rd Year/5th Sem	Department of Information Science & Engineering	Environmental Studies	18CIV59	Environment and Sustainability	PO 7- CO 1- PSO 2
79	3rd Year/5th sem	Department of Mechanical Engineering	Environmental Studies	18CIV59	Environment and Sustainability	PO 7- CO 1- PSO 2
80	3rd Year/6th sem	Department of Mechanical Engineering	Non conventional energy sources	18ME651	Environment and Sustainability	PO 7- CO 1- PSO 2
81	3rd Year/5th Sem	Department of Computer Science & Engineering	Environmental Studies	18CIV59	Environment and Sustainability	PO 7- CO 1- PSO 2
82	3rd Year/5th Sem	Department of Electrical and Communication Engineering	Environmental Studies	18CIV59	Environment and Sustainability	PO 7- CO 1- PSO 3

83	3rd Year/5th sem	Department of Mechatronics	Environmental Studies	18CIV59	Environment and Sustainability	PO 7- CO 1- PSO 1
84	3rd Year/5th Sem	Department of Civil Engineering	Environmental Studies	18CIV59	Environment & Sustainability	PO 7- CO 1- PSO 3
85	3rd Year/6th Sem	Department of Civil Engineering	Environmental Engineering Laboratory	18CVL67	Environment & Sustainability	PO 7- CO 4- PSO 3
86	4th Year/7th sem	Department of Civil Engineering	Air Pollution And Control	18CIV732	Environment & Sustainability	PO 7- CO 1- PSO 3
87	4th Year/7th sem	Department of Civil Engineering	Ground Water Hydraulics	18CIV734	Environment & Sustainability	PO 7- CO 3- PSO 3
88	3rd Year/5th sem	Department of Electrical & Electronics Engineering	Environmental Studies	18CIV59	Environment and Sustainability	PO 7- CO 1- PSO 3
89	4th Year/7th sem	Department of Electrical & Electronics Engineering	Introduction to Electric Vehicles	18AU745	Environment and Sustainability	PO 7- CO 1- PSO 2
90	1st Year/2nd Sem	Department of Business Administration	Research Methodology and IPR	22MBA23	Environment and Sustainability	PO 7- CO 5- PSO 2

Professional Ethics

Department of Biotechnology

BIO-BUSINESS AND ENTREPRENEURSHIP			
Course Code	18BT51	CIE Marks	40
Teaching Hours/Week (L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives:

- To learn about the project management,
- To explore entrepreneurship
- To understand IPR and its implications

Module-1

BIO ENTERPREUNERSHIP:

Introduction to bio-business, from the Indian context, SWOT analysis of bio-business. Ownership, Development of Entrepreneurship; Stages in entrepreneurial process; Role of entrepreneurs in Economic Development; Entrepreneurship in India; Entrepreneurship - its barriers. Small scale industries: Definition; Characteristics; Need and rationale; Objectives; Scope; Market Feasibility Study; Technical Feasibility Study; Financial Feasibility Study & Social Feasibility Study. Global bio business and industry future trends.

Module-2

ENTREPRENEURSHIP OPPORTUNITY IN AGRI BIOTECHNOLOGY:

Business opportunity, Essential requirement, marketing, strategies, schemes, challenges and scope-with case study on Plant cell and tissue culture technique, polyhouse culture. Herbal bulk drug production, Nutraceuticals, value added herbal products. Bioethanol production using Agri waste, Algal source. Integration of system biology for agricultural applications. Biosensor development in Agri management

Module-3

ENTREPRENEURSHIP OPPORTUNITY IN INDUSTRIAL BIOTECHNOLOGY: Business opportunity, Essential requirement, marketing strategies, schemes, challenges and scope-with case study- Pollution monitoring and Bioremediation for Industrial pollutants, Pesticides, Herbicides etc. Integrated compost production- microbe enriched compost.Bio pesticide/insecticide production. Fermented products-probiotic and prebiotics. Stem cell production, stem cell bank, contract research. Production of monoclonal/polyclonal antibodies, Single cell protein and secondary metabolite production.Contact research in microbial genomics.

Module-4

PROJECT MANAGEMENT, INTELLECTUAL PROPERTY, TECHNOLOGY MANAGEMENT AND STARTUP SCHEMES:

Building Biotech business challenges in Indian context-biotech partners (BICEPS, BIRAC, DBT, Incubation centers. Etc.,), operational biotech parks in India. Indian Company act for Bio business-schemes and subsidies. Meaning of Project; Project Identification; Project Selection; Project Report; Need and Significance of Report; Contents; Formulation; Guidelines by Planning Commission for Project report; Network Analysis; Errors of Project Report; Project Appraisal. Identification of business opportunities: Market Feasibility Study; Technical Feasibility Study; Financial Feasibility Study & Social Feasibility Study. Patent expiry and Entrepreneurship opportunity, Principles of Technology leasing, licensing and transfer, Startup schemes in Indian government, Business incubation support schemes, Successful start-ups-case study.

Module-5

REGULATORY AFFAIRS, BIOETHICS & BIO-SAFETY:

Regulatory affairs in Bio business-regulatory bodies and their regulations (ex.FDA, EU, DSIR, AYUSH,

26.10.2022

BICOK107-207

Theory - 01 Credit Course

Indian Constitution

Course Title:	**Indian Constitution**		
Course Code:	**BICOK107-207**	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

(ii) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

Constitution of India and Professional Ethics (CIP)

Course Code	**21CIP37/47**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**L:0,T:2,P:0 = 02 Hours**	**SEE Marks**	**50**
Total Hours of Pedagogy	**02 Hours/Week**	**Total Marks**	**100**
Credits	**01**	**Exam Hours**	**01 Hours**

Course objectives: This course will enable the students

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalizedlearning, (vi) Problems based learning through discussion.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation

films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module – 1

Introduction to Indian Constitution: The Necessity of the Constitution, The Societies before and after the
Constitution adoption. Introduction to the Indian constitution, The Making of the Constitution, The Role of the
Constituent Assembly. The Preamble of Indian Constitution & Key concepts of the Preamble. Salient features ofIndia Constitution.

Module – 2

FR's, FD's and DPSP's: Fundamental Rights and its Restriction and limitations in different Complex Situations. Directive Principles of State Policy (DPSP) and its present relevance in our society with examples. Fundamental Duties and its Scope and significance in Nation building.

Module – 3

Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet, Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Supreme Court ofIndia, Judicial Reviews and Judicial Activism.

Module – 4

State Executive & Elections, Amendments and Emergency Provisions: State Executive, Election Commission, Elections & Electoral Process. Amendment to Constitution (How and Why) and Important Constitutional Amendments till today. Emergency Provisions.

Module-5

Professional Ethics: Ethics & Values. Types of Ethics. Scope & Aims of Professional & Engineering Ethics. Positive and Negative Faces of Engineering Ethics. Clash of Ethics, Conflicts of Interest. The impediments to Responsibility. Trust & Reliability in Engineering, IPRs (Intellectual Property Rights), Risks, Safety and liabilityin Engineering.

Course outcome (Course Skill Set) :

At the end of the course the student will be able to :

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

B. E. BIOTECHNOLOGY
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
SEMESTER - VII

BIOETHICS , BIOSAFETY & IPR

Course Code	18BT741	CIE Marks	40
Teaching Hours/Week (L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives: : This course will enable students

- To introduce the biosafety regulations
- To understand the ethical concepts in biotechnology
- To emphasize on IPR issues and need for knowledge in patents in biotechnology

Module-1

BIOTECHNOLOGY AND SOCIETY

Introduction to science, technology and society, issues of access-Case studies/experiences from developing and developed countries. Ownership, monopoly, traditional knowledge, biodiversity, benefit sharing, environmental sustainability, public vs. private funding, biotechnology in international relations, globalization and development divide. Public acceptance issues for biotechnology: Biotechnology and hunger: Challenges for the Indian Biotechnological research and industries.

Module-2

BIOETHICS & LEGAL ISSUES:

Principles of bioethics: Legality, morality and ethics, autonomy, human rights, beneficence, privacy, justice, equity etc. The expanding scope of ethics from biomedical practice to biotechnology, bioethics vs. business ethics, ethical dimensions of IPR, technology transfer and other global biotech issues.
The legal, institutional and socioeconomic impacts of biotechnology; biotechnology and social responsibility. Public education to increase the awareness of bioethics with regard to generating new forms of life for informed decision making – with case studies.

Module-3

BIOSAFETY CONCEPTS AND ISSUES:

Ethical conflicts in biotechnology - interference with nature, fear of unknown, unequal distribution of risks and benefits of biotechnology, Rational vs. subjective perceptions of risks and benefits, relationship between risk, hazard, exposure and safeguards, Biotechnology and biosafety concerns at the level of individuals, institutions, society, region, country and the world. The Cartagena protocol on biosafety. Biosafety management. Ethical implications of biotechnological products and techniques.

Module-4

REGULATIONS:

Biosafety assessment procedures in India and abroad. International dimensions in biosafety, bioterrorism and convention on biological weapons. Social and ethical implications of biological weapons. Biosafety regulations and national and international guidelines with regard to recombinant DNA technology. Guidelines for research in transgenic plants. Good manufacturing practice and Good lab practices (GMP and GLP). National and international regulations for food and pharma products.

Module-5

IPR, PATENTS AND PATENT LAWS:

Intellectual property rights-TRIP- GATT International conventions patents Methods of application of patents Legal implications Biodiversity and farmer rights
Objectives of the patent system Basic principles and general requirements of patent law Biotechnological inventions and patent law .Legal development-Patentable subjects and protection in biotechnology .The patenting of living organisms.

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

- Describe the rules governing manufacture, use/import/export and storage of hazardous microorganisms/genetically engineered organisms or cells.
- Describe the ethical issues related to biotechnology research

B. E. BIOTECHNOLOGY
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
SEMESTER - VI

FOOD PROCESS ENGINEERING

Course Code	**18BT641**	CIE Marks	40
Teaching Hours/Week (L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives:

- To explain the concept of food and its physiological characteristics.
- To understand the role of beneficial microorganisms in food processing and preservation and to list the major food spoilage microorganisms and the detection techniques.
- To apply the principles and procedures to process and preserve food.
- To analyze the food sample for microbial contamination.

Module-1

FOOD SCIENCE & FOOD NUTRITION

Introduction, history, constituents of food, Regulation of food intake colloidal systems in food, stability of colloidal systems, Carbohydrates, Starches, Proteins, Fats in food, sugars in food, Minerals, Aroma compounds and flavors in food, Browning reactions, anti-nutritional factors in foods, Rancidity of food factors affecting rancidity, preventive measures. Metabolism in starvation and malnutrition, Diet and nutrition in India, Food faddism and faulty food habits.

Module-2

MICROBIAL SPOILAGE, DETECTION

Intrinsic and extrinsic factors influences the growth of microorganism in food, primary sources of microorganisms found in foods, Synopsis of common food-borne bacteria, genera of molds, genera of yeasts, Food borne infection and intoxication. Brief discussions on food borne gastroenteritis caused by Salmonella, Shigella, Listeria, Staphylococcus, Clostridium, Vibrio, Yersinia and Campylobacter Microbial detection in food: Culture, Microscopic & sampling methods, Conventional SPC, Membrane filters, microscope colony Counts, Agar droplets, Dry films, Most probable nos. (MPN), Dye-reduction, roll tube, microscopic count (DMC).

Module-3

FOOD FERMENTATION& PRESERVATION

Fermented foods – Production of Bread, Cheese and Sauerkraut. Fermentation of wines, distilled liquor, vinegar, Fermented Dairy products. Principles underlying preservation of food. Food preservation using chemical preservatives, irradiation, high temperature, low temperature and dehydration.

Module-4

FOOD INDUSTRY AND BIOTECHNOLOGY IN FOOD

Characteristics of food industry. Food manufacturing and processing, objectives of food processing, effect of food processing on food constituents, methods of evaluation of food, proximate analysis of food constituents, Nutritional value, labeling of constituents, (Soya foods, organic foods, dietary foods, (for individuals, for specific groups),nutritional food supplements, Food packaging, edible films, Factors influencing food product development, marketing and promotional strategies. Applications of Biotechnology in food industry, Nutraceuticals, flavonoids, antioxidants, vitamins, enzymes in food industry, economic aspects, enzyme generation of flavor and aroma compounds.

Module-5

FOOD TECHNOLOGY

Properties of foods and processing theory, Process control, Raw material processing, Thermal properties of frozen foods, Prediction of freezing rates, Food freezing equipments: Air blast freezers, plate freezers and immersion freezers. Food dehydration: estimation of drying time, constant rate period and falling rate period. Equipments: fixed tray dehydration, cabinet drying, tunnel drying. Equipments related to pulping, fruit juice

extraction, dehulling and distillation, Food safety (HACCP and FSO systems), good manufacturing practice and quality assurance. Current technologies and Future Scope.

Course Outcomes:

- Display a solid foundation in understanding the biochemical, nutritional, physiological, ethical and safety aspect of food.
- Understand the factors influencing microbial growth, its intoxication and diagnostic system used in fo industry to detect the microbial spoilage.
- To illustrate the different processing, preservative techniques to enhance the shelf life and production of food by fermentation processes using biotechnological approach.
- To analyse the different food sample for microbial contamination.

Question paper pattern:

- The question paper will have ten full questions carrying equal marks.
- Each full question will be for 20 marks.
- There will be two full questions (with a maximum of four sub- questions) from each module.
- Each full question will have sub- question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module.

Sl No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbooks				
1	Food microbiology	William C Frazier and Westhoff Dennis C	Tata McGraw Hill publication	5th Edn 2013
2	Food Biotechnology	KalidasShetty	CRC Press	2nd Edn 2005
3	Food Biotechnology	J Polak, J Tramper and S Bielecki	Elsevier Science	2000
Reference Books				
1	The technology of food preservation	Desrosier, Norman W; Desrosier, James N.	Westport, Conn. : AVI Pub. Co.	1977
2	Essentials of Food Sciences	Vickie A. Vaclavik, Elizabeth W. Christian	Springer	1998

Web links and Video Lectures: -

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Department of Information Science & Engineering

Constitution of India and Professional Ethics (CIP)

Course Code	**21CIP37/47**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**L:0,T:2,P:0 = 02 Hours**	**SEE Marks**	**50**
Total Hours of Pedagogy	**02 Hours/Week**	**Total Marks**	**100**
Credits	**01**	**Exam Hours**	**01 Hours**

Course objectives: This course will enable the students

6. To know about the basic structure of Indian Constitution.
7. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
8. To know about our Union Government, political structure & codes, procedures.
9. To know the State Executive & Elections system of India.
10. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

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Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation

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Positive and Negative Faces of Engineering Ethics. Clash of Ethics, Conflicts of Interest. The impediments to Responsibility. Trust & Reliability in Engineering, IPRs (Intellectual Property Rights), Risks, Safety and liabilityin Engineering.

Course outcome (Course Skill Set) :

At the end of the course the student will be able to :

CO1	Analyse the basic structure of Indian Constitution.
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26.10.2022

BICOK107-207

Theory - 01 Credit Course

Indian Constitution

Course Title:	**Indian Constitution**		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
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4. To know the State Executive & Elections system of India.
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(ii) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

Department of Mechanical Engineering

26.10.2022

BICOK107-207

Theory - 01 Credit Course

Indian Constitution

Course Title:	**Indian Constitution**		
Course Code:	**BICOK107-207**	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
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Module-3 (03 hours of pedagogy)

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Module-4 (03 hours of pedagogy)

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Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
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IV Semester

UNIVERSAL HUMAN VALUES-II: UNDERSTANDING HARMONY and ETHICAL HUMAN CONDUCT

Title of the subject

Course Code	21UHV49	CIE Marks	50
Teaching Hours /Week (L:T:P: S)	2:0:0	SEE Marks	50
Total Hours of Pedagogy	20	Total Marks	100
Credits	01	Exam Hours	01

Course objectives:

This introductory course input is intended:

1. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
2. To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way.
3. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behaviour and mutually enriching interaction with Nature.

This course is intended to provide a much-needed orientational input in value education to the young enquiring minds.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. The methodology of this course is explorational and thus universally adaptable. It involves a systematic and rational study of the human being vis-à-vis the rest of existence.
2. The course is in the form of 20 lectures (discussions)
3. It is free from any dogma or value prescriptions.
4. It is a process of self-investigation and self-exploration, and not of giving sermons. Whatever is found as truth or reality is stated as a proposal and the students are facilitated to verify it in their own right, based on their Natural Acceptance and subsequent Experiential Validation – the whole existence is the lab and every activity is a source of reflection.
5. This process of self-exploration takes the form of a dialogue between the teacher and the students to begin with, and then to continue within the student in every activity, leading to continuous self-evolution.
6. This self-exploration also enables them to critically evaluate their pre-conditionings and present beliefs.

Module-1

Introduction to Value Education (4 hours)

Right Understanding, Relationship and Physical Facility (Holistic Development and the Role of Education)
Understanding Value Education, Self-exploration as the Process for Value Education, Continuous Happiness and Prosperity – the Basic Human Aspirations, Happiness and Prosperity – Current Scenario, Method to Fulfil the Basic Human Aspirations

Teaching-Learning Process	Introduction to Value Education- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Constitution of India and Professional Ethics (CIP)

Course Code	**21CIP37/47**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**L:0,T:2,P:0 = 02 Hours**	**SEE Marks**	**50**
Total Hours of Pedagogy	**02 Hours/Week**	**Total Marks**	**100**
Credits	**01**	**Exam Hours**	**01 Hours**

Course objectives: This course will enable the students

1. To know about the basic structure of Indian Constitution.
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Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation

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Course outcome (Course Skill Set) :

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Department of Computer Science & Engineering

Constitution of India and Professional Ethics (CIP)

Course Code	**21CIP37/47**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**L:0,T:2,P:0 = 02 Hours**	**SEE Marks**	**50**
Total Hours of Pedagogy	**02 Hours/Week**	**Total Marks**	**100**
Credits	**01**	**Exam Hours**	**01 Hours**

Course objectives: This course will enable the students

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Department of Electrical and Communication Engineering

Constitution of India and Professional Ethics (CIP)

Course Code	**21CIP37/47**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**L:0,T:2,P:0 = 02 Hours**	**SEE Marks**	**50**
Total Hours of Pedagogy	**02 Hours/Week**	**Total Marks**	**100**
Credits	**01**	**Exam Hours**	**01 Hours**

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CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

CHILDREN'S EDUCATION SOCIETY(Regd.)
THE OXFORD COLLEGE OF ENGINEERING
(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.
Accreditated NAAC 'A' Grade, Approved by A.I.C.T.E. New Delhi. Recognised by UGC Under Section 2(f))
Bommanahalli, Hosur Road, Bangalore-560068. Ph:080-61754601/602,Fax:080-25730551
E-mail:engprincipal@theoxford.edu. Web:www.theoxfordengg.org

Department of Artificial Intelligence and Machine Learning

26.10.2022

BICOK107-207

Theory - 01 Credit Course

Indian Constitution

Course Title:	Indian Constitution		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

(ii) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

IV Semester

UNIVERSAL HUMAN VALUES-II: UNDERSTANDING HARMONY and ETHICAL HUMAN CONDUCT			
Course Code	21UHV49	CIE Marks	50
Teaching Hours /Week (L:T:P: S)	2:0:0	SEE Marks	50
Total Hours of Pedagogy	20	Total Marks	100
Credits	01	Exam Hours	01

Course objectives:

This introductory course input is intended:

1. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
2. To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way.
3. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behaviour and mutually enriching interaction with Nature.

This course is intended to provide a much-needed orientational input in value education to the young enquiring minds.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. The methodology of this course is explorational and thus universally adaptable. It involves a systematic and rational study of the human being vis-à-vis the rest of existence.
2. The course is in the form of 20 lectures (discussions)
3. It is free from any dogma or value prescriptions.
4. It is a process of self-investigation and self-exploration, and not of giving sermons. Whatever is found as truth or reality is stated as a proposal and the students are facilitated to verify it in their own right, based on their Natural Acceptance and subsequent Experiential Validation – the whole existence is the lab and every activity is a source of reflection.
5. This process of self-exploration takes the form of a dialogue between the teacher and the students to begin with, and then to continue within the student in every activity, leading to continuous self-evolution.
6. This self-exploration also enables them to critically evaluate their pre-conditionings and present beliefs.

Module-1

Introduction to Value Education (4 hours)

Right Understanding, Relationship and Physical Facility (Holistic Development and the Role of Education)
Understanding Value Education, Self-exploration as the Process for Value Education, Continuous Happiness and Prosperity – the Basic Human Aspirations, Happiness and Prosperity – Current Scenario, Method to Fulfil the Basic Human Aspirations

Teaching-Learning Process	Introduction to Value Education - Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Constitution of India and Professional Ethics (CIP)

Course Code	**21CIP37/47**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**L:0,T:2,P:0 = 02 Hours**	**SEE Marks**	**50**
Total Hours of Pedagogy	**02 Hours/Week**	**Total Marks**	**100**
Credits	**01**	**Exam Hours**	**01 Hours**

Course objectives: This course will enable the students

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalizedlearning, (vi) Problems based learning through discussion.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation

films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module – 1

Introduction to Indian Constitution: The Necessity of the Constitution, The Societies before and after the
Constitution adoption. Introduction to the Indian constitution, The Making of the Constitution, The Role of the
Constituent Assembly. The Preamble of Indian Constitution & Key concepts of the Preamble. Salient features ofIndia Constitution.

Module – 2

FR's, FD's and DPSP's: Fundamental Rights and its Restriction and limitations in different Complex Situations. Directive Principles of State Policy (DPSP) and its present relevance in our society with examples. Fundamental Duties and its Scope and significance in Nation building.

Module – 3

Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet, Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Supreme Court ofIndia, Judicial Reviews and Judicial Activism.

Module – 4

State Executive & Elections, Amendments and Emergency Provisions: State Executive, Election Commission, Elections & Electoral Process. Amendment to Constitution (How and Why) and Important Constitutional Amendments till today. Emergency Provisions.

Module-5

Professional Ethics: Ethics & Values. Types of Ethics. Scope & Aims of Professional & Engineering Ethics.

Positive and Negative Faces of Engineering Ethics. Clash of Ethics, Conflicts of Interest. The impediments to Responsibility. Trust & Reliability in Engineering, IPRs (Intellectual Property Rights), Risks, Safety and liabilityin Engineering.

Course outcome (Course Skill Set) :

At the end of the course the student will be able to :

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

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Department of Mechatronics

26.10.2022

BICOK107-207

Theory - 01 Credit Course

Indian Constitution

Course Title:	Indian Constitution		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

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(ii) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
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CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

Department of Civil Engineering

26.10.2022

Theory - 01 Credit Course **BICOK107-207**

Indian Constitution

Course Title:	**Indian Constitution**		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

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(ii) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

SEMESTER - V

CONSTRUCTION MANAGEMENT AND ENTREPRENEURSHIP

Course Code	18CV51	CIE Marks	40
Teaching Hours/Week(L:T:P)	(2:2:0)	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives: This course will enable students to

1. Understand the concept of planning, scheduling, cost and quality control, safety during construction, organization and use of project information necessary for construction project.
2. Inculcate Human values to grow as responsible human beings with proper personality.
3. Keep up ethical conduct and discharge professional duties.

Module -1

Management: Characteristics of management, functions of management, importance and purpose of planning process, types of plans.

Construction Project Formulation: Introduction to construction management, project organization, management functions, management styles.

Construction Planning and Scheduling: Introduction, types of project plans, work breakdown structure, Grant Chart, preparation of network diagram- event and activity based and its critical path-critical path method, PERT method, concept of activity on arrow and activity on node.

Module -2

Resource Management: Basic concepts of resource management, class of lab our, Wages & statutory requirement, Labour Production rate or Productivity, Factors affecting labour output or productivity.

Construction Equipments: classification of construction equipment, estimation of productivity for: excavator, dozer, compactors, graders and dumpers. Estimation of ownership cost, operational and maintenance cost of construction equipments. Selection of construction equipment and basic concept on equipment maintenance

Materials: material management functions, inventory management.

Module -3

Construction Quality , safety and Human Values:

Construction quality process, inspection, quality control and quality assurance, cost of quality, ISO standards. Introduction to concept of Total Quality Management

HSE: Introduction to concepts of HSE as applicable to Construction. Importance of safety in construction , Safety measures to be taken during Excavation , Explosives , drilling and blasting , hot bituminous works , scaffolds / platforms / ladder , form work and equipment operation. Storage of materials. Safety through legislation, safety campaign. Insurances.

Ethics : Morals, values and ethics, integrity, trustworthiness , work ethics, need of engineering ethics, Professional Duties, Professional and Individual Rights, Confidential and Proprietary Information, Conflict of Interest Confidentiality, Gifts and Bribes, Price Fixing, Whistle Blowing.

Module -4

Introduction to engineering economy: Principles of engineering economics, concept on Micro and macro analysis, problem solving and decision making.

Interest and time value of money: concept of simple and compound interest, interest formula for: single payment, equal payment and uniform gradient series. Nominal and effective interest rates, deferred annuities, capitalized cost.

Comparison of alternatives: Present worth, annual equivalent, capitalized and rate of return methods, Minimum Cost analysis and break even analysis.

Module -5

Entrepreneurship: Evolution of the concept, functions of an entrepreneur, concepts of entrepreneurship, stages in entrepreneurial process, different sources of finance for entrepreneur, central and state level financial institutions.
Micro, Small & Medium Enterprises (MSME): definition, characteristics, objectives, scope, role of MSME in economic development, advantages of MSME, Introduction to different schemes: TECKSOK, KIADB, KSSIDC, DIC, Single Window Agency: SISI, NSIC, SIDBI, KSFC.
Business Planning Process: Business planning process, marketing plan, financial plan, project report and feasibility study, guidelines for preparation of model project report for starting a new venture. Introduction to international entrepreneurship opportunities, entry into international business, exporting, direct foreign investment, venture capital.

Course Outcomes: After studying this course, students will be able to:

1. Prepare a project plan based on requirements and prepare schedule of a project by understanding the activities and their sequence.
2. Understand labour output, equipment efficiency to allocate resources required for an activity / project to achieve desired quality and safety.
3. Analyze the economics of alternatives and evaluate benefits and profits of a construction activity based on monetary value and time value.
4. Establish as an ethical entrepreneur and establish an enterprise utilizing the provisions offered by the federal agencies.

Question paper pattern:

- The question paper will have ten full questions carrying equal marks.
- Each full question will be for 20 marks.
- There will be two full questions (with a maximum of four sub- questions) from each module.
- Each full question will have sub- question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module.

Textbooks:

1. P C Tripathi and P N Reddy, "Principles of Management", Tata McGraw-Hill Education
2. Chitkara, K.K, "Construction Project Management: Planning Scheduling and Control", Tata McGraw-Hill Publishing Company, New Delhi.
3. Poornima M. Charantimath , "Entrepreneurship Development and Small Business Enterprise", Dorling Kindersley (India) Pvt. Ltd., Licensees of PearsonEducation
4. Dr. U.K. Shrivastava "Construction Planning and Management", Galgotia publications Pvt. Ltd. New Delhi.
5. Bureau of Indian standards – IS 7272 (Part-1)- 1974 : Recommendations for labour output constant for building works:

Reference Books:

1. Robert L Peurifoy, Clifford J. Schexnayder, AviadShapira, Robert Schmitt, "Construction Planning, Equipment, and Methods (Civil Engineering), McGraw-HillEducation
2. Harold Koontz, Heinz Weihrich, "Essentials of Management: An International, Innovation, and Leadership perspective", T.M.H. Edition, NewDelhi
3. Frank Harris, Ronald McCaffer with Francis Edum-Fotwe, " Modern Construction Management", Wiley-Blackwell
4. Mike Martin, Roland Schinzinger, "Ethics in Engineering", McGraw-HillEducation

B. E. CIVIL ENGINEERING
Choice Based Credit System (CBCS) and Outcome Based Education (OBE)
SEMESTER - V

DESIGN OF RC STRUCTURAL ELEMENTS

Course Code	**18CV53**	CIE Marks	40
Teaching Hours/Week(L:T:P)	(3:2:0)	SEE Marks	60
Credits	04	Exam Hours	03

Course Learning Objectives: This course will enable students to

1. Identify, formulate and solve engineering problems of RC elements subjected to different kinds of loading.
2. Follow a procedural knowledge in designing various structural RC elements.
3. Impart the usage of codes for strength, serviceability and durability.
4. Provide knowledge in analysis and design of RC elements.

Module-1

Introduction to working stress and limit State Design: Introduction to working stress method, Difference between Working stress and Limit State Method of design, Modular Ratio and Factor of Safety and evaluation of design constants for working stress method.

Philosophy and principle of limit state design with assumptions. Partial Safety factors, Characteristic load and strength. Stress block parameters, concept of balanced section, under reinforced and over reinforced section.

Limiting deflection, short term deflection, long term deflection, Calculation of deflection of singly reinforced beam only. Cracking in reinforced concrete members, calculation of crack width of singly reinforced beam. Side face reinforcement, slender limits of beams for stability.

Module-2

Limit State Analysis of Beams:
Analysis of singly reinforced, doubly reinforced and flanged beams for flexure and shear.

Module-3

Limit State Design of Beams: Design of singly and doubly reinforced beams, Design of flanged beams, design for combined bending, shear and torsion as per IS-456.

Module-4

Limit State Design of Slabs and Stairs: Introduction to one way and two way slabs, Design of cantilever, simply supported and one way continuous slab. Design of two way slabs for different boundary conditions. Design of dog legged and open well staircases. Importance of bond, anchorage length and lap length.

Module-5

Limit State Deign of Columns and Footings: Analysis and design of short axially loaded RC column. Design of columns with uniaxial and biaxial moments, Design concepts of the footings. Design of Rectangular and square column footings with axial load and also for axial load & moment.

Course outcomes: After studying this course, students will be able to:

1. Understand the design philosophy and principles.
2. Solve engineering problems of RC elements subjected to flexure, shear and torsion.
3. Demonstrate the procedural knowledge in designs of RC structural elements such as slabs, columns and footings.
4. Owns professional and ethical responsibility.

Department of Electrical & Electronics Engineering

Module - 2 (03 hours of pedagogy)

1. ನಾಮಪದಗಳ ಸಂಬಂಧಾರ್ಥಕ ರೂಪಗಳು, ಸಂದೇಹಾಸ್ಪದ ಪ್ರಶ್ನೆಗಳು ಮತ್ತು ಸಂಬಂಧವಾಚಕ ನಾಮಪದಗಳು - **Possessive forms of nouns, dubitive question and Relative nouns**
2. ಗುಣ, ಪರಿಮಾಣ ಮತ್ತು ವರ್ಣಬಣ್ಣ ವಿಶೇಷಣಗಳು, ಸಂಖ್ಯಾವಾಚಕಗಳು **Qualitative, Quantitative and Colour Adjectives, Numerals**
3. ಅರಕ ರೂಪಗಳು ಮತ್ತು ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯಗಳು –ಸಪ್ತಮಿ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯ – (ಅ, ಅದು, ಅವು, ಅಲ್ಲಿ) – **Predictive Forms, Locative Case**

Module - 3 (03 hours of pedagogy)

1. ಚತುರ್ಥಿ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯದ ಬಳಕೆ ಮತ್ತು ಸಂಖ್ಯಾವಾಚಕಗಳು - **Dative Cases, and Numerals**
2. ಸಂಖ್ಯಾಗುಣವಾಚಕಗಳು ಮತ್ತು ಬಹುವಚನ ನಾಮರೂಪಗಳು **-Ordinal numerals and Plural markers**
3. ನ್ಯೂನ/ನಿಷೇಧಾರ್ಥಕ ಕ್ರಿಯಾಪದಗಳು & ವರ್ಣ ಗುಣವಾಚಕಗಳು –**Defective/Negative Verbs & Colour Adjectives**

Module- 4 (03 hours of pedagogy)

1. ಅಪ್ಪಣೆ / ಒಪ್ಪಿಗೆ, ನಿರ್ದೇಶನ, ಪ್ರೋತ್ಸಾಹ ಮತು ಒತ್ತಾಯ ಆರ್ಥರೂಪ ಪದಗಳು ಮತ್ತು ವಾಕ್ಯಗಳು
   Permission, Commands, encouraging and Urging words (Imperative words and sentences)
2. ಸಾಮಾನ್ಯ ಸಂಭಾಷಣೆಗಳಲ್ಲಿ ದ್ವಿತೀಯ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯಗಳು ಮತ್ತು ಸಂಭವನೀಯ ಪ್ರಕಾರಗಳು
   Accusative Cases and Potential Forms used in General Communication
3. "ಇರು ಮತ್ತು ಇರಲ್ಲ" ಸಹಾಯಕ ಕ್ರಿಯಾಪದಗಳು, ಸಂಭಾವ್ಯಸೂಚಕ ಮತ್ತು ನಿಷೇಧಾರ್ಥಕ ಕ್ರಿಯಾ ಪದಗಳು -
   Helping Verbs "iru and iralla", Corresponding Future and Negation Verbs
4. ಹೋಲಿಕೆ (ತರತಮ), ಸಂಬಂಧ ಸೂಚಕ, ಮಸ್ತು ಸೂಚಕ ಪ್ರತ್ಯಯಗಳು ಮತ್ತು ನಿಷೇಧಾರ್ಥಕ ಪದಗಳ ಬಳಕೆ-
   Comparitive, Relationship, Identification and Negation Words

Module - 5 (03 hours of pedagogy)

1. ಕಾಲ ಮತ್ತು ಸಮಯದ ಹಾಗೂ ಕ್ರಿಯಾಪದಗಳ ವಿವಿಧ ಪ್ರಕಾರಗಳು -Different types of Tense, Time and Verbs
2. ದ್, -ತ್, - ತು, - ಇತು, - ಆಗಿ, - ಅಲ್ಲ, - ಗ್, -ಕ್, ಇದೆ, ಕ್ರಿಯಾ ಪ್ರತ್ಯಯಗಳೊಂದಿಗೆ ಭೂತ, ಭವಿಷ್ಯತ್ ಮತ್ತು ವರ್ತಮಾನ ಕಾಲ ವಾಕ್ಯ ರಚನೆ - Formation of Past, Future and Present Tense Sentences with Verb Forms
3. **Kannada Vocabulary List :ಸಂಭಾಷಣೆಯಲ್ಲಿ ದಿನೋಪಯೋಗಿ ಕನ್ನಡ ಪದಗಳು -Kannada Words in Conversation**

Course outcome (Course Skill Set)

ಬಳಕೆ ಕನ್ನಡ ಪಠ್ಯ ಕಲಿಕೆಯಿಂದ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಆಗುವ ಅನುಕೂಲಗಳು ಮತ್ತು ಫಲಿತಾಂಶಗಳು:

At the end of the course the student will be able to:

CO1	To understand the necessity of learning of local language for comfortable life.
CO2	To speak, read and write Kannada language as per requirement.
CO3	To communicate (converse) in Kannada language in their daily life with kannada speakers.
CO4	To Listen and understand the Kannada language properly.
CO5	To speak in polite conservation.

Indian Constitution

Course Title:	**Indian Constitution**		
Course Code:	**BIGOK107-207**	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

(ii) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judacial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

Constitution of India and Professional Ethics (CIP)

Course Code	**21CIP37/47**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**L:0,T:2,P:0 = 02 Hours**	**SEE Marks**	**50**
Total Hours of Pedagogy	**02 Hours/Week**	**Total Marks**	**100**
Credits	**01**	**Exam Hours**	**01 Hours**

Course objectives: This course will enable the students

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module - 1

Introduction to Indian Constitution: The Necessity of the Constitution, The Societies before and after the Constitution adoption. Introduction to the Indian constitution, The Making of the Constitution, The Role of the Constituent Assembly. The Preamble of Indian Constitution & Key concepts of the Preamble. Salient features of India Constitution.

Module - 2

FR's, FD's and DPSP's: Fundamental Rights and its Restriction and limitations in different Complex Situations. Directive Principles of State Policy (DPSP) and its present relevance in our society with examples. Fundamental Duties and its Scope and significance in Nation building.

Module - 3

Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet, Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Supreme Court of India, Judicial Reviews and Judicial Activism.

Module - 4

State Executive & Elections, Amendments and Emergency Provisions: State Executive, Election Commission, Elections & Electoral Process. Amendment to Constitution (How and Why) and Important Constitutional Amendments till today. Emergency Provisions.

Module-5

Professional Ethics: Ethics & Values. Types of Ethics. Scope & Aims of Professional & Engineering Ethics. Positive and Negative Faces of Engineering Ethics. Clash of Ethics, Conflicts of Interest. The impediments to Responsibility. Trust & Reliability in Engineering, IPRs (Intellectual Property Rights), Risks, Safety and liability in Engineering.

Course outcome (Course Skill Set) :

At the end of the course the student will be able to :

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

Department of Business Administration

ENTREPRENEURSHIP DEVELOPMENT			
Course Code	**22MBA12**	**CIE Marks**	**50**
Teaching Hours/Week (L:P:SDA)	**4:0:0**	**SEE Marks**	**50**
Total Hours of Pedagogy	**50**	**Total Marks**	**100**
Credits	**04**	**Exam Hours**	**03**

Course Learning objectives:

- To develop and strengthen entrepreneurial qualities and motivation among students.
- To impart basic entrepreneurial skills and understandings to run a business efficiently and effectively.
- To provide insights to students on entrepreneurship opportunities, sources of funding and institutions supporting entrepreneurs.
- To make students understand the ways of starting a company of their own.

Module-1 **(7 Hours)**

Introduction to Entrepreneur & Entrepreneurship: Meaning of entrepreneur - Evolution of the concept - Functions of an Entrepreneur - Types of Entrepreneurs - Intrapreneur- an emerging class - Concept of Entrepreneurship -Entrepreneurial Culture - Stages in entrepreneurial process.
Creativity and Innovation: The role of creativity , The innovation Process , Sources of New Ideas , Methods of Generating Ideas , Creative Problem Solving , Entrepreneurial Process.

Module-2 **(9 Hours)**

Developing Business Model: Importance of Business Model , Starting a small-scale industry - Components of an Effective Business Model, Osterwalder Business Model Canvas.
Business Planning Process: Meaning of business plan - Business plan process - Advantages of business planning - Final Project Report with Feasibility Study - preparing a model project report for starting a new venture.
Lab Component and assignment: Designing a Business Model Canvas

Module-3 (9 Hours)

Managing and Growing New Venture: Preparing for the new venture launch - early management decisions, Managing early growth of the new venture- new venture expansion strategies and issues. Getting Financing or Funding for the New Venture: Estimating the financial needs of a new venture and preparation of a financial plan, Sources of Personal Financing, Preparing to Raise Debt or Equity Financing, Business Angels, Venture Capital, Initial Public Offering, Commercial Banks, Other Sources of Debt Financing, Leasing. Forms of business organization: Sole Proprietorship , Partnership , Limited liability partnership - Joint Stock Companies and Cooperatives.

Module-4 (9 Hours)

Entrepreneurship Development and Government: Role of Central Government and State Government in promoting Entrepreneurship - Introduction to various incentives, subsidies and grants - Export Oriented Units - Fiscal and Tax concessions available- Start Up India scheme. Women Entrepreneurs, Reasons for low women Entrepreneurs, Prospects for Women Entrepreneurs, Strategies to motivate entrepreneurship amongst women.
Institutions supporting Entrepreneurs: A brief overview of financial institutions in India - SIDBI - NABARD - IDBI - SIDCO - Indian Institute of Entrepreneurship - DIC - Single Window - Latest Industrial Policy of Government of India.

Module-5 **(7 Hours)**

Process of Company Incorporation: process of registration of a private limited company, a public limited company, a partnership; Characteristics of a limited liability partnership; Four stages of Start Up. **Intellectual property protection and Ethics: Patents , Copyright - Trademark- Geographical indications , Ethical and social responsibility and challenges.**

Module-6 **(9 Hours)**

Emerging Trends in Entrepreneurship Development; Digital Entrepreneurship , meaning, scope and opportunities.Social Entrepreneur , Meaning of Social Entrepreneur, Motivation for a Social Entrepreneur; Supporting and Evaluating Social Entrepreneurship in India. Rural Entrepreneur , Meaning of Rural Entrepreneur, Potential opportunities for Rural entrepreneurship in India

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing marks for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements (passed) and earned the credits allotted to each course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

There shall be a maximum of 50 CIE Marks. A candidate shall obtain not less than 50% of the maximum marks prescribed for the CIE.

CIE Marks shall be based on:

a) Tests (for 25Marks) and

b) Assignments, presentations, Quiz, Simulation, Experimentation, Mini project, oral examination, field work and class participation etc., (for 25 Marks) conducted in the respective course. Course instructors are given autonomy in choosing a few of the above based on the subject relevance and should maintain necessary supporting documents for same.

Semester End Examination:

The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.

- The question paper will have 8 full questions carrying equal marks.
- Each full question is for 20 marks with 3 sub questions.
- Each full question will have sub question covering all the topics.
- The students will have to answer five full questions; selecting four full question from question number one to seven in the pattern of 3, 7 & 10 Marks and question number eight is compulsory.

Suggested Learning Resources: Books

1. The Dynamics of Entrepreneurial Development and Management, Vasant Desai, Himalaya Publishing House, 2010.
2. Entrepreneurship, Donald F. Kuratko and Richard M. Hodgetts, South-Western, 2012.
3. Entrepreneurship Development, Gupta S.L., Arun Mittal, International Book House, 2012.
4. Management and Entrepreneurship Development, Sudha G. S, Indus Valley Publication, 2009

Web links and Video Lectures (e-Resources):

- https://youtu.be/rbmz5VEW90A
- https://www.youtube.com/watch?v=CnStAWc7iOw
- https://www.youtube.com/watch?v=RLQivEQUgUc

Note: The aforesaid links and study material are suggestive in nature, they may be used with due regards to copy rights, patenting and other IPR rules.

III SEMESTER
CORE COURSES

EMERGING EXPONENTIAL TECHNOLOGIES			
Course Code	20MBA301	CIE Marks	40
Teaching Hours/Week	3:0:2	SEE Marks	60
Credits	04	Exam Hours	03

Objective of the Course:

1. To understand the emerging technologies applicable in field of Management.
2. To study data science as a tool for decision making in Management
3. To understand the concept of AI, IOT and AR.
4. To study other emerging technologies in Management.

Module -1 Introduction to Emerging Technologies **9 hours**

Evolution of technologies; Introduction to Industrial revolution; Historical background of the Industrial Revolution; Introduction to Fourth industrial revolution (IR 4.0); Role of data for Emerging technologies; Enabling devices and networks for emerging technologies (programmable devices); Human to Machine Interaction; Future trends in emerging technologies.

Module -2 Data Science **7 hours**

Overview for Data Science; Definition of data and information; Data types and representation; Data Value Chain; Data Acquisition; Data Analysis; Data Curating; Data Storage; Data Usage; Basic concepts of Big Data.

Module -3 Artificial Intelligence(AI) **9 hours**

Concept of AI, meaning of AI, History of AI, Levels of AI, Types of AI, Applications of AI in Agriculture, Health, Business (Emerging market), Education, AI tools and platforms (eg: scratch/object tracking).

Module -4 Internet of Things (IoT) **9 hours**

Overview of IOT; meaning of IOT; History of IOT; Advantages of IOT; Challenges of IOT; IOT working process; Architecture of IOT; Devices and network; Applications of IOT at Smart home; Smart grid; Smart city; Wearable devices; Smart farming; IOT tools and platforms; Sample application with hands on activity.

Module-5 Augmented Reality (AR) and Virtual Reality (VR) **9 hours**

Introduction to AR, Virtual reality (VR), Augmented Reality (AR) vs mixed reality (MR), Architecture of AR systems. Application of AR systems (education, medical, assistance, entertainment) workshop oriented hands demo.

Module-6 Ethics, Professionalism and Other Emerging Technologies **7 hours**

Technology and ethics, Digital privacy, Accountability and trust, Treats and challenges.

Other Technologies: Block chain technology, Cloud and quantum computing, Autonomic computing, Computer vision, Cyber security, Additive manufacturing (3D Printing)

Course Outcomes:

By the end of this course the student will able to:

1. Identify different emerging technologies
2. Select appropriate technology and tools for a given task
3. Identify necessary inputs for application of emerging technologies
4. Understand the latest developments in the area of technology to support business

Practical Component:

- Big data analysis using an analytical tool
- Study the Application of AI in any one field and prepare a Report
- Study the Ethical practices of a Company
- 3D model Printing by Group or team
- Exposing the students to usage of IoT

HUMAN RESOURCE SPECIALISATION COURSES

ORGANISATIONAL LEADERSHIP

Course Code	20MBAHR401	CIE Marks	40
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	60
Credits	03	Exam Hours	03

Course Objectives

1. The student will be able to describe and Identify the application of Leadership styles and practices followed in the Organisation
2. The student will be able to describe and explain in her/his own words, the relevance and importance of various Leadership practices and style followed in the Organisation
3. The student will be able to apply and solve the workplace problems through Leadership practices
4. The student will be able to classify and categories different Leadership practices and styles followed in the Organisation
5. The student will be able to create and reconstruct Leadership required to manage the Human Resources in the Organisation
6. The student will be able to appraise and judge the practical applicability of Leadership practices followed in the Organisation

Module-1 Introduction — **5 hours**

Concept of Leadership, Ways of Conceptualizing Leadership, Definition and Components, Leadership Described, Trait Versus Process Leadership, Assigned Versus Emergent Leadership, Leadership and Power, Leadership and Coercion, Leadership and Management.

Module -2 Model of Leadership - Part A — **7 hours**

Trait Approach

Description, Intelligence, Self-Confidence, Determination, Integrity, Sociability, Five-Factor Personality Model and Leadership, Emotional Intelligence, How Does the Trait Approach Work?
Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Skills Approach

Description, Three-Skill Approach, Technical Skill, Human Skill, Conceptual Skill, Summary of the Three-Skill Approach, Skills Model, Competencies, Individual Attributes, Leadership, Outcomes, Career Experiences, Environmental Influences, Summary of the Skills Model, How Does the Skills Approach Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Behavioral Approach

Description, The Ohio State Studies, The University of Michigan Studies, Blake and Mouton's Managerial (Leadership) Grid, Authority–Compliance (9,1), Country-Club Management (1,9) Impoverished Management (1,1), Middle-of-the-Road Management (5,5), Team Management (9,9), Paternalism/Maternalism, Opportunism, How Does the Behavioral Approach Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Situational Approach

Description, Leadership Styles, Development Levels, How Does the Situational Approach Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Module -3 Model of Leadership - Part B — **7 hours**

Path–Goal Theory

Description, Leader Behaviors, Directive Leadership, Supportive Leadership, Participative Leadership, Achievement-Oriented Leadership, Follower Characteristics, Task Characteristics How Does Path–Goal Theory Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Leader–Member Exchange Theory

Description, Early Studies, Later Studies, Leadership Making, How Does LMX Theory Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Transformational Leadership

Description, Transformational Leadership Defined, Transformational Leadership and Charisma, A Model of Transformational Leadership, Transformational Leadership Factors, Transactional Leadership Factors, Non-leadership Factor, Other Transformational Perspectives Bennis and Nanus, Kouzes and Posner, How Does the Transformational Approach Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Authentic Leadership

Description, Authentic Leadership Defined, Approaches to Authentic Leadership, Practical Approach, Theoretical Approach, How Does Authentic Leadership Theory Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Psychodynamic Approach

Description, The Clinical Paradigm, History of the Psychodynamic Approach, Key Concepts and Dynamics Within the Psychodynamic Approach,

1. Focus on the Inner Theatre
2. Focus on the Leader-Follower Relationships

Social Defense Mechanisms, Mirroring and Idealizing, Identification With the Aggressor

3. Focus on the Shadow Side of Leadership Narcissism

How Does the Psychodynamic Approach Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Module -4 Leadership Instrument **7 hours**

Description, Culture Defined, Related Concepts, Ethnocentrism, Prejudice, Dimensions of Culture, Uncertainty Avoidance, Power Distance, Institutional Collectivism, In-Group, Collectivism, Gender Egalitarianism, Assertiveness, Future Orientation, Performance Orientation, Humane Orientation, Clusters of World Cultures, Characteristics of Clusters, Anglo, Confucian Asia, Eastern Europe, Germanic Europe, Latin America, Latin Europe, Middle East, Nordic Europe, Southern Asia, Sub-Saharan Africa, Leadership Behavior and Culture, Clusters, Eastern Europe Leadership Profile, Latin America Leadership Profile, Latin Europe Leadership Profile, Confucian Asia Leadership Profile, Nordic Europe Leadership Profile, Anglo Leadership Profile, Sub-Saharan Africa Leadership Profile, Southern Asia Leadership Profile, Germanic Europe Leadership Profile, Middle East Leadership Profile, Universally Desirable and Undesirable Leadership Attributes, Strengths, Criticisms, Application, Case Studies on Leadership Instrument

Module -5 Ethical Leadership **7 hours**

Description, Ethics Defined ;Level 1. Preconventional Morality ;Level 2. Conventional Morality; Level 3. Postconventional Morality; Ethical Theories, Centrality of Ethics to Leadership, Heifetz's Perspective on Ethical Leadership; Burns's Perspective on Ethical Leadership, The Dark Side of Leadership, Principles of Ethical Leadership, Ethical Leaders Respect Others, Ethical Leaders Serve Others, Ethical Leaders Are Just, Ethical Leaders Are Honest, Ethical Leaders Build CommModuley, Strengths, Criticisms, Application, Case Studies, Leadership Instrument.

Module – 6 Leadership Practices **7 hours**

Select Case of Successful Leadership Practices; TATA Group; Reliance; Infosys; WIPRO; and Organisations which are listed as Fortune Companies. Survey Report analysis of NHRD; NIPM; CII; FICCI; Conference Board; CCL - Centre of Creative Leadership.

Course Outcomes:

1. Understand the fundamental concepts and principles, theories of Organizational Leadership.
2. Analyze the organizational leadership style, approaches and traits, its impact on the followers by using leadership theories and instruments.
3. Developing better insight in understanding the leadership traits that influence them to work effectively in group.
4. Demonstrate their ability to apply of their knowledge in organizational leadership.

Practical Components:

- Meet any Leader- Organisation or Academic and ask 10 questions related to Leadership. Than analysis the type of leadership style adopted.
- Meet 4-5 Leaders from different roles and compare - contrast the different style son leadership.
- Meet Gender specific leaders and try analysing who makes the best leader in which type of set-up.

Note: Faculty can either identify the organizations/ leaders/job profile or students can be allowed to choose the same.

INTERNATIONAL HUMAN RESOURCES MANAGEMENT			
Course Code	20MBAHR403	CIE Marks	40
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	60
Credits	03	Exam Hours	03

Course Objectives

1. The student will be able to describe and Identify the application of IHRM in managing and developing an Organisation
2. The student will be able to describe and explain in her/his own words, the relevance and importance of IHRM in managing and developing an Organisation
3. The student will be able to apply and solve the workplace problems involving International issues
4. The student will be able to classify and categorise different Laws related to IHRM
5. The student will be able to create and reconstruct HRM System to be adopted in the Organisation related to International employees
6. The student will be able to appraise and judge the practical applicability of various strategy and approaches in managing International Organisation

Module-1 Introduction — **7 hours**

Meaning and Definition IHRM: Evolution, Challenges, Objectives, IHRM Versus Single Nation-centric HRM IHRM: Approaches Emergence of Global HR Manager IHRM:Culture and Cross-Cultural Management-Introduction, Studies on culture in management Positivist views: 'Culture and values' Interpretive views: 'Culture and meanings' Critical views: 'Culture and power"; Comparative Human Resource Management - Globalisation and HRM, The importance of context, Differences in HRM practice; Approaches to International Human Resource Management - Review of IHRM approaches, The concept of HRM, Are IHRM models applicable to other contexts? What factors affect HRM approaches internationally? What are the implications of change for IHRM approaches?

Module -2 IHRM Policies and Practices - Part A — **7 hours**

Managing Knowledge in Multinational Firms: Introduction, Different types of knowledge, Factors influencing knowledge sharing How to stimulate knowledge sharing Gaining access to external knowledge. Knowledge retention From the management of knowledge to innovation

Training and Development: Developing Global Leaders and Expatriates

Training and Development: Domestic Versus International Organisations International Training Management: Basic Concepts and Models Leadership Training and Development in International Organisations Technology in International Training Management.

Module -3 IHRM Policies and Practices - Part B — **7 hours**

Global Performance Management

Introduction, Key components of PMSs Factors affecting PMSs Culture and PMSs, PMSs in six leading economies: China, India, Japan, South Korea, UK and USA, PMS for expatriates

Total Rewards in the International Context

Recap: differentiating between PCNs, TCNs and HCNs Introduction: the current state of total rewards Complexities faced by IHR managers, International total rewards objectives for the MNC Newer forms of international assignments, Key components of global total rewards programs. Approaches to international compensation Repatriation issues, International trends in global total rewards.

Module -4 International Assignments And Employment Practices — **5 hours**

Introduction Staffing policies, Motives for international transfers, Alternative forms of international assignments. The international assignment process Dimensions of international assignment success

Multinational Companies and the Host Country Environment Introduction, Varieties of host country environments, Sustainability of divergent, employment arrangements Understanding how MNCs act in diverse host country, environments Host country effects on IHRM practices of MNC subsidiaries

Module -5 Employment Practices — **7 hours**

Regulation and Multinational Corporations: The Changing Context of Global Employment Relations

Importance of regulation and political context, Political agendas to de-regulate, Political and institutional drivers of de-regulation, Problems with de-regulation in a global context. Human Resource Management in Cross-Border Mergers and Acquisitions. Cultural differences and cross-border M&A performance, Managing cross-border integration: the HRM implications.

Module – 6 Diversity Management and CSR **7 hours**

Equal opportunities, Diversity Management, Work–life balance: practices and discourses; International Culture Management: Model Organisational Culture and Innovation, Models of Culture, Hofstede's Four, Cultural Dimensions, Trompenaar's Seven Cultural Dimensions, Globe's Nine Cultural Dimensions, Edgar Schein's Model of Culture Deal and Kennedy's Culture Model, Schneider's Culture Model, Cameron and Quinn's Model of Culture Charles Handy's Model of Culture Denison's Model of Culture, Profile of Organisational Culture in International Organizations Managing International Culture. Corporate Social Responsibility and Sustainability through Ethical HRM practices. Ethics and corporate social responsibility International labour standards.

Course Outcomes:

1. Gain conceptual knowledge and practical experience in understanding the HR concepts globally.
2. Comprehend and correlate the strategic approaches to HR aspects amongst PCN's, TCN's and HCN's.
3. Develop knowledge and apply the concepts of HR in global perspective
4. Have a better insight of HR concepts, policies and practices by critically analysing the impact of contemporary issues globally.

Practical Components:

- A visit to Organisation and interact with HR Manager and list out the roles played by HR manager.
- Meet Recruitment Manager and ask- 10 questions one asks during Interview.
- Meet Training and Development Manager and list out various training given to employees; basis of training program; Need analysis.
- Visit any Service Organisation and observe HR functions; List them.

CO-PO MAPPING

CO	PO				
	PO1	PO2	PO3	PO4	PO5
CO1	X		X		X
CO2	X		X		X
CO3	X	X	X		
CO4	X		X	X	X

Question paper pattern:

The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 60.

- The question paper will have 8 full questions carrying equal marks.
- Each full question is for 20 marks.
- Each full question will have sub question covering all the topics under a Module.
- The students will have to answer five full questions; selecting four full question from question number one to seven and question number eight is compulsory.
- 100 percent theory in the SEE.

Textbooks

Sl No	Title of the book	Name of the Author/s	Publisher Name	Edition and year
1	International Human Resource Management	Srinivas R. Kandula	Sage Publication India Pvt. Ltd.	2018
2	International Human Resource Management	Anne-Wil Harzing, Ashly H. Pinnington	Sage Publication India Pvt. Ltd.	4/e, 2015
3	Diversity at Work	Arthur P Brief	Cambridge University Press	2008

Master of Computer Applications

Choice Based Credit System(CBCS)
Semester: III
CIE Marks:40
Course Code:20MCA354
SEE Marks:60
Contact Periods (L:T:P):3-0-0
Exam Hours:03

Software Project Management

Course Out Comes:
CO1:Apply thepracticesandmethodsforsuccessfulsoftwareprojectmanagement
CO2:Identifytechniquesforrequirements,policiesanddecisionmakingforeffectiveresource management
CO3:Illustratetheevaluationtechniquesforestimatingcost,benefits,scheduleandrisk
CO4:Deviseaframeworkforsoftwareprojectmanagementplanforactivities,risk,monitoring andcontrol
CO5:Designaframeworktomanagepeople

Module-1 INTRODUCTIONTOSOFTWAREPROJECTMANAGEMENT
Introduction,WhyisSoftwareProjectManagementimportant?Whatisa Project?, ContractManagement,ActivitiesCoveredbySoftwareProjectManagement, Plans, MethodsandMethodologies,Someways of categorizingsoftwareprojects, Stakeholders,SettingObjectives,BusinessCase,ProjectSuccessandFailure,Whatis Management? Management Control, Traditional versus Modern Project ManagementPractices

Module-2 PROJECTEVALUATION&FINANCE Evaluationof IndividualProjects,CostBenefitEvaluationTechniques,RiskEvaluation, ProgrammeManagement,Managingallocationof ResourceswithinProgrammes, FinancialAccounting– Anoverview– Accountingconcepts,Principles&Standards, Ledgerposting,Trialbalance,ProfitandLossaccountBalancesheet

Module-3 ACTIVITYPLANNING ObjectivesofActivityPlanning,Whento Plan,ProjectSchedules,Sequencingand SchedulingActivities,NetworkPlanningModels,ForwardPass– BackwardPass, Identifyingcriticalpath,ActivityFloat,ShorteningProjectDuration,Activityon Arrow Networks RiskManagement,NatureofRisk,CategoriesofRisk,Aframeworkfordealingwith Risk, Risk Identification, Risk analysis and prioritization, risk planning and risk monitoring

Module-4 MONITORINGANDCONTROL
CreatingtheFramework,CollectingtheData,Review,ProjectTerminationReview, VisualizingProgress,CostMonitoring,EarnedValueAnalysis,PrioritizingMonitoring, GettingProjectBackToTarget,ChangeControl,SoftwareConfiguration Management

Module-5 MANAGINGPEOPLEANDWORKINGINTEAMS
Introduction,UnderstandingBehavior,OrganizationalBehavior:A Background,

SelectingtheRightPersonfortheJob,InstructionintheBestMethods,Motivation, TheOldham–HackmanJobCharacteristicsModel,Stress–HealthandSafety WorkingInTeams,BecomingaTeam,DecisionMaking,Leadership. Textbooks 1.BobHughes, MikeCotterell, RajibMall, "Software Project Management", Fifth Edition,TataMcGrawHill,2011. 2."AccountingforManagement"JawaharLal,5 thEdition,WheelerPublications,Delhi. References 1.JackMarchewka," Information Technology-Project Management", Wiley Student Version,4 thEdition,2013. 2.JamesPLewis,"ProjectPlanning,Scheduling&Control",McGrawHill,5 thEdition, 2011. 3.Pankaj Jalote," Software Project Management in Practise", Pearson Education, 2002

Choice Based Credit System
Semester: II
CIE Marks:50
Course code:22MCA254
SEE Marks:50
Contact Hours (L:T:P): 3:0:0
Exam Hours:3

User Interface Design

Course Outcomes: At the end of the course, students will be able to
CO1:Analyse the new technologies that provide interactive devices and interfaces.
CO2: Apply the guidelines to develop the UID and evaluate for the given problem.
CO3: Apply the development methodologies with an analysis of the social impact and legal issuesUnderstand Direct Manipulation and Virtual Environment
CO4: Discuss the command, natural languages and issues in design for maintaining QoS
CO5: Demonstrate techniques for information search and visualization for the given problem.

Module-1 Introduction Usability of Interactive Systems: Introduction, Usability Goals and Measures, Usability Motivation, Universal Usability, Goals for our profession. Guideline, principles, and theories: Introduction, Guidelines, principles, Theories.

Module-2 Development Processes Managing Design Processes: Introduction, Organizational Design to support Usability, The Four Pillars of Design, Development methodologies: Ethnographic Observation, Participatory Design, Scenario Development, Social Impact statement for Early Design Review, Legal Issues. Evaluating Interface Design Introduction, Expert Reviews, Usability Testing and Laboratories, Survey Instruments, Acceptance tests, Evaluation during Active Use, Controlled Psychologically Oriented Experiments

Module-3 Direct Manipulation and Virtual Environments: Introduction, Examples of Direct Manipulation, Discussion of direct manipulation, 3D Interfaces, Tele-operation, Virtual and Augmented Reality Menu Selection, Form Filling and Dialog Boxes: Introduction, Task-Related Menu Organization, Single Menus,

Combination of Multiple Menus, Content Organization, Fast Movement Through Menus, Data Entry With Menus, Form Filling, Dialog Boxes and Alternatives, Audio Menus and Menus for Small Displays

Module-4 Command and Natural Languages Introduction, Command-organization functionality strategies and structure, Naming and Abbreviations, Natural Language in computing. Interaction Devices: Introduction, Keyboards and Keypads, Pointing Devices, Speech and Auditory interfaces, Displays-Small and Large Design Issues Quality of Service: Introduction, Models of Response-Time Impacts, Expectations and Attitudes, User Productivity, Variability in Response time, Frustrating Experiences Balancing Function and Fashion: Introduction, Error Messages, Nonanthropomorphic Design, Display design, web page design, Window Design, Color

Module-5 User Documentation and Online Help : Introduction, Online versus paper documentation, Reading from paper versus Displays, Shaping the content of the Manuals, Accessing the Documentation, Online Tutorials and animated demonstrations, Online Communities for User Assistance, The Development Process. Information Search and Visualization Introduction, Search in Textual Documents and Database Querying, Multimedia document searches, Advanced filtering and Search Interfaces, Information Visualization: Introduction, Data type by task taxonomy, Challenges for information visualization.

Textbooks 1.BenShneiderman, Plaisant, Cohen, Jacobs: Designing the User Interface, 5th Edition, Pearson ,Education, 2010. References 1 Alan Dix, Janet Finalay, Gregory D AbiwdmRusselBealel: Human-Computer Interaction, III Edition, Pearson , Education, 2008.
2 Eberts: User Interface Design, Prentice Hall, 1994 3 Wilber O Galitz: The Essential Guide to User Interface Design- An Introduction to GUI Design, Principles and Techniques, Wiley-Dreamtech India Pvt Ltd, 2011
Optimization Technique

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Bommanahalli, Hosur Road, Bangalore-560068. Ph:080-61754601/602,Fax:080-25730551
E-mail:engprincipal@theoxford.edu. Web:www.theoxfordengg.org

Gender

Department of Mechanical Engineering

26.10.2022

Theory - 01 Credit Course **BICOK107-207**

Indian Constitution

Course Title:	Indian Constitution		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives:

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

(ii) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

Department of Biotechnology

GENETIC ENGINEERING & APPLICATIONS			
Course Code	**18BT56**	CIE Marks	40
Teaching Hours/Week (L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives:

- To learn about rDNA technology, vectors and enzymes used in genetic engineering.
- To learn acquire the knowledge of specific techniques like PCR, NA hybridization & libraries.
- To learn about various gene transfer techniques, applications of transgenic plants & animals and importance of gene therapy

Module-1

VECTORS & ENZYMES IN GENETIC ENGINEERING:

Vectors in rDNA technology, salient features of vectors, types of vectors-plasmids, cosmids, phagemids and viruses. Construction of rDNA& vectors (BAC, Blue script and YAC). Exonucleases and Restriction Endonculeases: classification, mode of action. Enzymes in modification - Polynucleotide phosphorylase, DNase, Methylases, phosphatases, polynucleotide Kinase, Ligases, RNase and their mechansim of action

Module-2

NUCLEIC ACID HYBRIDIZATION, AMPLIFICATION & CONSTRUCTION OF LIBRARIES:

Methods of nucleic acid detection, polymerase chain reaction (PCR), variants of PCR and applications, methods of nucleic acid hybridization, Southern, Northern & Western hybridization techniques & applications. Isolation of nucleic acids (DNA & RNA). Isolation of plasmids, construction of genomic and cDNA libraries, purification, screening and preservation

Module-3

METHODS OF GENE/DNA TRANSFER:

Overview & classification of gene transfer techniques in plants, animals and microbes – Transformation, stable & transient transformation, transfection, electroporation, microinjection, liposome mediated gene transfer, transfection of DNA by calcium phosphate coprecipitation, gene gun method. *Agrobacterium*-mediated gene transfer in plants – Ti &Ri plasmids: structure and functions, Ti plasmid based vectors – advantages, disease control of *Agrobacterium tumefaciens*. Chloroplast transformation & its applications.

Module-4

TRANSGENIC SCIENCE IN GENETIC IMPROVEMENT

Transgenic science in plant improvement, biopharming – plants as bioreactors, transgenic crops for increased yield, resistance to biotic and abiotic stresses. Techniques of gene mapping in plants. Marker-assisted selection and breeding for improvement. Transgenic science for animal improvement, biopharming - animals as bioreactors for recombinant proteins, Gene mapping in farm animals. Marker-assisted selection and genetic improvement of livestock.

Module-5

OTHER APPLICATIONS & GENE THERAPY

Microbial biotechnology - Genetic manipulation, engineering microbes for the production of antibiotics, enzymes, Insulin, growth hormones, monoclonal antibodies, clearing oil spills. Introduction to gene therapy. Methods of Gene therapy. Gene targeting and silencing. Gene therapy in the treatment of cancer, SCID, muscular dystrophy, respiratory disease (emphysema), cystic fibrosis. Challenges & future of gene therapy.

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

- Explain & compare the different vectors & enzymes used in the construction of recombinant DNA in Genetic engineering
- Choose& explain specific techniques like PCR, Blotting & construction of libraries
- Differentiate between & learn the different gene/DNA transfer techniques
- Outline the various methods of producing transgenic organisms and sub-divide/summarize the applications of genetic engineering for the welfare of mankind & society

Question paper pattern:

- The question paper will have ten full questions carrying equal marks.
- Each full question will be for 20 marks.
- There will be two full questions (with a maximum of four sub- questions) from each module.
- Each full question will have sub- question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module.

Sl No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbook/s				
1	Principles of Gene Manipulation and Genomics	S.B. Primrose and R. M. Twyman	Blackwell Science Publications	7th edition 2006
2	Gene Cloning and DNA Analysis: An Introduction	T A Brown	Wiley – Blackwell Publications.	(6th edition)
Reference Books				
3	Recombinant DNA	Watson.J.D. et al	Scientific American Books, New York	1993
4	Plant Genetic Engineering	J. H. Dodds	Cambridge University Press	1983
5	Gene Cloning and Manipulation	Howe C. J	Cambridge University Press	2007

Department of Artificial Intelligence and Machine Learning

26.10.2022

BICOK107-207

Theory - 01 Credit Course

Indian Constitution

Course Title:	Indian Constitution		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students.

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching -Learning more effective. Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

(vi) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Saliest features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation. Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governor, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

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III/IV Semester

Constitution of India and Professional Ethics (CIP)

Course Code	21CIP37/47	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	L:0,T:2,P:0 = 02 Hours	SEE Marks	50
Total Hours of Pedagogy	02 Hours/Week	Total Marks	100
Credits	01	Exam Hours	01 Hours

Course objectives: This course will enable the students

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module - 1

Introduction to Indian Constitution: The Necessity of the Constitution, The Societies before and after the Constitution adoption. Introduction to the Indian constitution, The Making of the Constitution, The Role of the Constituent Assembly. The Preamble of Indian Constitution & Key concepts of the Preamble. Salient features of India Constitution.

Module - 2

FR's, FD's and DPSP's: Fundamental Rights and its Restriction and limitations in different Complex Situations. Directive Principles of State Policy (DPSP) and its present relevance in our society with examples. Fundamental Duties and its Scope and significance in Nation building.

Module - 3

Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet, Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Supreme Court of India, Judicial Reviews and Judicial Activism.

Module - 4

State Executive & Elections, Amendments and Emergency Provisions: State Executive, Election Commission, Elections & Electoral Process. Amendment to Constitution (How and Why) and Important Constitutional Amendments till today. Emergency Provisions.

Module-5

Professional Ethics: Ethics & Values. Types of Ethics. Scope & Aims of Professional & Engineering Ethics. Positive and Negative Faces of Engineering Ethics. Clash of Ethics, Conflicts of Interest. The impediments to Responsibility. Trust & Reliability in Engineering. IPRs (Intellectual Property Rights), Risks, Safety and liability in Engineering.

Department of Civil Engineering

26.10.2022

Theory - 01 Credit Course **BICOK107-207**

Indian Constitution

Course Title:	Indian Constitution		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

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(ii) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

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Department of Electrical & Electronics Engineering

26.10.2022

BICOK107-207

Theory - 01 Credit Course

Indian Constitution

Course Title:	Indian Constitution		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives:

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
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Teaching-Learning Process

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Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
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CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

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Department of Business Administration

HUMAN RESOURCE SPECIALISATION COURSES

ORGANISATIONAL LEADERSHIP			
Course Code	20MBAHR401	CIE Marks	40
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	60
Credits	03	Exam Hours	03

Course Objectives

1. The student will be able to describe and Identify the application of Leadership styles and practices followed in the Organisation
2. The student will be able to describe and explain in her/his own words, the relevance and importance of various Leadership practices and style followed in the Organisation
3. The student will be able to apply and solve the workplace problems through Leadership practices
4. The student will be able to classify and categories different Leadership practices and styles followed in the Organisation
5. The student will be able to create and reconstruct Leadership required to manage the Human Resources in the Organisation
6. The student will be able to appraise and judge the practical applicability of Leadership practices followed in the Organisation

Module-1 Introduction — **5 hours**

Concept of Leadership, Ways of Conceptualizing Leadership, Definition and Components, Leadership Described, Trait Versus Process Leadership, Assigned Versus Emergent Leadership, Leadership and Power, Leadership and Coercion, Leadership and Management.

Module -2 Model of Leadership – Part A — **7 hours**

Trait Approach
Description, Intelligence, Self-Confidence, Determination, Integrity, Sociability, Five-Factor Personality Model and Leadership, Emotional Intelligence, How Does the Trait Approach Work?
Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Skills Approach
Description, Three-Skill Approach, Technical Skill, Human Skill, Conceptual Skill, Summary of the Three-Skill Approach, Skills Model, Competencies, Individual Attributes, Leadership, Outcomes, Career Experiences, Environmental Influences, Summary of the Skills Model, How Does the Skills Approach Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Behavioral Approach
Description, The Ohio State Studies, The University of Michigan Studies, Blake and Mouton's Managerial (Leadership) Grid, Authority–Compliance (9,1), Country-Club Management (1,9) Impoverished Management (1,1), Middle-of-the-Road Management (5,5), Team Management (9,9), Paternalism/Maternalism, Opportunism, How Does the Behavioral Approach Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Situational Approach
Description, Leadership Styles, Development Levels, How Does the Situational Approach Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Module -3 Model of Leadership – Part B — **7 hours**

Path–Goal Theory
Description, Leader Behaviors, Directive Leadership, Supportive Leadership, Participative Leadership, Achievement-Oriented Leadership, Follower Characteristics, Task Characteristics How Does Path–Goal Theory Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Leader–Member Exchange Theory
Description, Early Studies, Later Studies, Leadership Making, How Does LMX Theory Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Transformational Leadership
Description, Transformational Leadership Defined, Transformational Leadership and Charisma, A Model of Transformational Leadership, Transformational Leadership Factors, Transactional Leadership Factors, Non-leadership Factor, Other Transformational Perspectives Bennis and Nanus, Kouzes and Posner, How Does the Transformational Approach Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Authentic Leadership

Description, Authentic Leadership Defined, Approaches to Authentic Leadership, Practical Approach, Theoretical Approach, How Does Authentic Leadership Theory Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Psychodynamic Approach

Description, The Clinical Paradigm, History of the Psychodynamic Approach, Key Concepts and Dynamics Within the Psychodynamic Approach.

1. Focus on the Inner Theatre
2. Focus on the Leader-Follower Relationships

Social Defense Mechanisms, Mirroring and Idealizing, Identification With the Aggressor

3. Focus on the Shadow Side of Leadership Narcissism

How Does the Psychodynamic Approach Work? Strengths, Criticisms, Application, Case Studies, Leadership Instrument

Module -4 Leadership Instrument — **7 hours**

Description, Culture Defined, Related Concepts, Ethnocentrism, Prejudice, Dimensions of Culture, Uncertainty Avoidance, Power Distance, Institutional Collectivism, In-Group, Collectivism, Gender Egalitarianism, Assertiveness, Future Orientation, Performance Orientation, Humane Orientation, Clusters of World Cultures, Characteristics of Clusters, Anglo, Confucian Asia, Eastern Europe, Germanic Europe, Latin America, Latin Europe, Middle East, Nordic Europe, Southern Asia, Sub-Saharan Africa, Leadership Behavior and Culture, Clusters, Eastern Europe Leadership Profile, Latin America Leadership Profile, Latin Europe Leadership Profile, Confucian Asia Leadership Profile, Nordic Europe Leadership Profile, Anglo Leadership Profile, Sub-Saharan Africa Leadership Profile, Southern Asia Leadership Profile, Germanic Europe Leadership Profile, Middle East Leadership Profile, Universally Desirable and Undesirable Leadership Attributes, Strengths, Criticisms, Application, Case Studies on Leadership Instrument

Module -5 Ethical Leadership — **7 hours**

Description, Ethics Defined ;Level 1. Preconventional Morality ;Level 2. Conventional Morality;
Level 3. Postconventional Morality; Ethical Theories, Centrality of Ethics to Leadership, Heifetz's Perspective on Ethical Leadership; Burns's Perspective on Ethical Leadership, The Dark Side of Leadership, Principles of Ethical Leadership, Ethical Leaders Respect Others, Ethical Leaders Serve Others, Ethical Leaders Are Just, Ethical Leaders Are Honest, Ethical Leaders Build CommModuley, Strengths, Criticisms, Application, Case Studies, Leadership Instrument.

Module – 6 Leadership Practices — **7 hours**

Select Case of Successful Leadership Practices; TATA Group; Reliance; Infosys; WIPRO; and Organisations which are listed as Fortune Companies. Survey Report analysis of NHRD; NIPM; CII; FICCI; Conference Board; CCL - Centre of Creative Leadership.

Course Outcomes:

1. Understand the fundamental concepts and principles, theories of Organizational Leadership.
2. Analyze the organizational leadership style, approaches and traits, its impact on the followers by using leadership theories and instruments.
3. Developing better insight in understanding the leadership traits that influence them to work effectively in group.
4. Demonstrate their ability to apply of their knowledge in organizational leadership.

Practical Components:

- Meet any Leader- Organisation or Academic and ask 10 questions related to Leadership. Than analysis the type of leadership style adopted.
- Meet 4-5 Leaders from different roles and compare - contrast the different style son leadership.
- Meet Gender specific leaders and try analysing who makes the best leader in which type of set-up.

Note: Faculty can either identify the organizations/ leaders/job profile or students can be allowed to choose the same.

INTERNATIONAL HUMAN RESOURCES MANAGEMENT			
Course Code	20MBAHR403	CIE Marks	40
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	60
Credits	03	Exam Hours	03

Course Objectives

1. The student will be able to describe and Identify the application of IHRM in managing and developing an Organisation
2. The student will be able to describe and explain in her/his own words, the relevance and importance of IHRM in managing and developing an Organisation
3. The student will be able to apply and solve the workplace problems involving International issues
4. The student will be able to classify and categorise different Laws related to IHRM
5. The student will be able to create and reconstruct HRM System to be adopted in the Organisation related to International employees
6. The student will be able to appraise and judge the practical applicability of various strategy and approaches in managing International Organisation

Module-1 Introduction **7 hours**

Meaning and Definition IHRM: Evolution, Challenges, Objectives, IHRM Versus Single Nation-centric HRM IHRM: Approaches Emergence of Global HR Manager IHRM;Culture and Cross-Cultural Management-Introduction, Studies on culture in management Positivist views: 'Culture and values' Interpretive views: 'Culture and meanings' Critical views: 'Culture and power'; Comparative Human Resource Management - Globalisation and HRM, The importance of context, Differences in HRM practice; Approaches to International Human Resource Management - Review of IHRM approaches, The concept of HRM, Are IHRM models applicable to other contexts? What factors affect HRM approaches internationally? What are the implications of change for IHRM approaches?

Module -2 IHRM Policies and Practices - Part A **7 hours**

Managing Knowledge in Multinational Firms: Introduction, Different types of knowledge, Factors influencing knowledge sharing How to stimulate knowledge sharing Gaining access to external knowledge, Knowledge retention From the management of knowledge to innovation

Training and Development: Developing Global Leaders and Expatriates

Training and Development: Domestic Versus International Organisations International Training Management: Basic Concepts and Models Leadership Training and Development in International Organisations Technology in International Training Management.

Module -3 IHRM Policies and Practices - Part B **7 hours**

Global Performance Management

Introduction, Key components of PMSs Factors affecting PMSs Culture and PMSs, PMSs in six leading economies: China, India, Japan, South Korea, UK and USA, PMS for expatriates

Total Rewards in the International Context

Recap: differentiating between PCNs, TCNs and HCNs Introduction: the current state of total rewards Complexities faced by IHR managers, International total rewards objectives for the MNC Newer forms of international assignments, Key components of global total rewards programs. Approaches to international compensation Repatriation issues, International trends in global total rewards.

Module -4 International Assignments And Employment Practices **5 hours**

Introduction Staffing policies, Motives for international transfers, Alternative forms of international assignments. The international assignment process Dimensions of international assignment success

Multinational Companies and the Host Country Environment Introduction, Varieties of host country environments, Sustainability of divergent, employment arrangements Understanding how MNCs act in diverse host country, environments Host country effects on IHRM practices of MNC subsidiaries

Module -5 Employment Practices **7 hours**

Regulation and Multinational Corporations: The Changing Context of Global Employment Relations

Importance of regulation and political context, Political agendas to de-regulate, Political and institutional drivers of de-regulation, Problems with de-regulation in a global context. Human Resource Management in Cross-Border Mergers and Acquisitions. Cultural differences and cross-border M&A performance, Managing cross-border integration: the HRM implications.

Module – 6 Diversity Management and CSR **7 hours**

Equal opportunities, Diversity Management, Work–life balance: practices and discourses; International Culture Management: Model Organisational Culture and Innovation, Models of Culture, Hofstede's Four, Cultural Dimensions, Trompenaar's Seven Cultural Dimensions, Globe's Nine Cultural Dimensions, Edgar Schein's Model of Culture Deal and Kennedy's Culture Model, Schneider's Culture Model, Cameron and Quinn's Model of Culture Charles Handy's Model of Culture Denison's Model of Culture, Profile of Organisational Culture in International Organizations Managing International Culture. Corporate Social Responsibility and Sustainability through Ethical HRM practices. Ethics and corporate social responsibility International labour standards.

Course Outcomes:

1. Gain conceptual knowledge and practical experience in understanding the HR concepts globally.
2. Comprehend and correlate the strategic approaches to HR aspects amongst PCN's, TCN's and HCN's.
3. Develop knowledge and apply the concepts of HR in global perspective
4. Have a better insight of HR concepts, policies and practices by critically analysing the impact of contemporary issues globally.

Practical Components:

- A visit to Organisation and interact with HR Manager and list out the roles played by HR manager.
- Meet Recruitment Manager and ask- 10 questions one asks during Interview.
- Meet Training and Development Manager and list out various training given to employees; basis of training program; Need analysis.
- Visit any Service Organisation and observe HR functions; List them.

CO-PO MAPPING

CO	PO				
	PO1	PO2	PO3	PO4	PO5
CO1	X		X		X
CO2	X		X		X
CO3	X	X	X		
CO4	X		X	X	X

Question paper pattern:

The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 60.

- The question paper will have 8 full questions carrying equal marks.
- Each full question is for 20 marks.
- Each full question will have sub question covering all the topics under a Module.
- The students will have to answer five full questions; selecting four full question from question number one to seven and question number eight is compulsory.
- 100 percent theory in the SEE.

Textbooks

Sl No	Title of the book	Name of the Author/s	Publisher Name	Edition and year
1	International Human Resource Management	Srinivas R. Kandula	Sage Publication India Pvt. Ltd.	2018
2	International Human Resource Management	Anne-Wil Harzing, Ashly H. Pinnington	Sage Publication India Pvt. Ltd.	4/e, 2015
3	Diversity at Work	Arthur P Brief	Cambridge University Press	2008

CHILDREN'S EDUCATION SOCIETY(Regd.)
THE OXFORD COLLEGE OF ENGINEERING
(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.
Accreditated NAAC 'A' Grade, Approved by A.I.C.T.E. New Delhi. Recognised by UGC Under Section 2(f))
Bommanahalli, Hosur Road, Bangalore-560068. Ph:080-61754601/602,Fax:080-25730551
E-mail:engprincipal@theoxford.edu. Web:www.theoxfordengg.org

Human Values

Department of Biotechnology

MICROBIOLOGY LAB			
Course Code	21BTL35	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	0:0:2:0	SEE Marks	50
Credits	01	Exam Hours	03

Course objectives:

- To develop ability to use basic instruments in the microbiology lab
- To prepare required media and sterile the glassware for culturing microbes
- To be able to characterize and enumerate different microorganisms
- To analyse the bacterial growth curves and phases of growth
- To isolate and study the microbes from various sources in day-today life

Sl.NO	EXPERIMENTS
1	Study of Lab Instruments (Autoclave, Hot air oven, Incubator, LAF, microfuge/centrifuge) and Observation of bacterial (prokaryotic) and fungal (eukaryotic) specimen under 10x, 40 x microscopes
2	Media preparation, plugging and sterilization (media, Petri plates and tubes), Plating techniques (Serial dilution, streak, pour and spread - plates)
3	Morphological characterization, Enumeration of microbes (Plate count, haemocytometer), size determination using micrometry.
4	Staining techniques I: Gram staining, Capsule staining, and endospore staining
5	Staining techniques II: Acid Fast Staining, Flagella staining and Fungal staining
6	Characterization of bacteria by Biochemical Tests: IMViC, Starch hydrolysis, carbohydrate fermentation, Catalase, Urease, hydrogen sulphide, Gelatin Liquifaction.
7	Growth of microbes (Static and shake flask conditions), Growth curve studies
8	Bacterial motility studies
9	Isolation and identification of actinomycetes and rhizobium
10	Isolation and identification of microorganisms from air, water & soil
11	Antibiotic susceptibility test of a selected bacterium
12	Microbial quality assessment of milk and water

Course outcomes (Course Skill Set)

At the end of the course the student will be able to:

- Apply the theoretical knowledge and execute experiments pertaining to methods of sterilization, microbial identification and characterization.
- Apply the basic techniques of Microbiology in various experiments related to Agriculture, Food and Environment.
- Analyze the relationship of microbes with human health.

Course Title:	Scientific Foundations of Health		
Course Code:	BSFHK158/258	CIE Marks	50
Course Type (Theory/Practical /Integrated)	Theory	SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives

The course Scientific Foundations of Health (22SFH18/28) will enable the students,

1. To know about Health and wellness (and its Beliefs) & It's balance for positive mindset.
2. To Build the healthy lifestyles for good health for their better future.
3. To Create a Healthy and caring relationships to meet the requirements of good/social/positive life.
4. To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future
5. To Prevent and fight against harmful diseases for good health through positive mindset

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective:

Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion, (vii) Following the method of expeditionary learning Tools and techniques, (viii) Use of audio visual methods.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 **(03 hours of pedagogy)**

Good Health & It's balance for positive mindset: Health -Importance of Health, Influencing factors of Health, Health beliefs, Advantages of good health, Health & Behavior, Health & Society, Health & family, Health & Personality, Psychological disorders-Methods to improve good psychological health, Changing health habits for good health.

Module-2 **(03 hours of pedagogy)**

Building of healthy lifestyles for better future: Developing healthy diet for good health, Food & health, Nutritional guidelines for good health, Obesity & overweight disorders and its management, Eating disorders, Fitness components for health. Wellness and physical function. How to avoid exercise injuries.

Module-3 **(03 hours of pedagogy)**

Creation of Healthy and caring relationships : Building communication skills, Friends and friendship - Education, the value of relationship and communication skills, Relationships for Better or worsening of life, understanding of basic instincts of life (more than a biology), Changing health behaviours through social engineering.

Module-4 **(03 hours of pedagogy)**

Avoiding risks and harmful habits : Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, How addiction develops, Types of addictions, influencing factors of addictions, Differences between addictive people and non addictive people & their behaviors. Effects of addictions Such as...., how to recovery from addictions.

Module-5 **(03 hours of pedagogy)**

Preventing & fighting against diseases for good health: How to protect from different types of infections, How to reduce risks for good health, Reducing risks & coping with chronic conditions, Management of chronic illness for Quality of life, Health & Wellness of youth :a challenge for upcoming future, Measuring of health & wealth status.

SOCIAL CONNECT & RESPONSIBILITIES			
Course Code	**21SCR36**	**CIE Marks**	**50**
Teaching Hours week (L:T:P:S)	1: 0: 0	SEE Marks	50
Total Hours of Pedagogy	15	Total Marks	100
Credits	01	Exam Hours	03
Department	Management Studies / Engineering Department		
Offered for	3rd Semester		
Prerequisite	Nil		

Objectives: The Course will

- Enable the student to do a deep drive into societal challenges being addressed by NGO(s), social enterprises & The government and build solutions to alleviate these complex social problems through immersion, design & technology.
- Provide a formal platform for students to communicate and connect with their surroundings.
- Enable to create of a responsible connection with society.

Learning Outcomes: The students are expected to have the ability to :

1. Understand social responsibility
2. Practice sustainability and creativity
3. Showcase planning and organizational skills

Contents:

The course is mainly activity-based that will offer a set of activities for the student that enables them to connect with fellow human beings, nature, society, and the world at large. The course will engage studentsinr interactive sessions, open mic, reading groups, storytelling sessions, and semester-long activities conducted by faculty mentors. In the following a set of activities planned for the course have been listed :

Module-I

Plantation and adoption of a tree: Plantation of a tree that will be adopted for four years by a group of B.Tech. students. They will also make an excerpt either as a documentary or a photoblog describing the plant's origin, its usage in daily life, and its appearance in folklore and literature.

Constitution of India and Professional Ethics (CIP)

Course Code	**21CIP37/47**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**L:0,T:2,P:0 = 02 Hours**	**SEE Marks**	**50**
Total Hours of Pedagogy	**02 Hours/Week**	**Total Marks**	**100**
Credits	**01**	**Exam Hours**	**01 Hours**

Course objectives: This course will enable the students

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalizedlearning, (vi) Problems based learning through discussion.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation

films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module – 1

Introduction to Indian Constitution: The Necessity of the Constitution, The Societies before and after the
Constitution adoption. Introduction to the Indian constitution, The Making of the Constitution, The Role of the
Constituent Assembly. The Preamble of Indian Constitution & Key concepts of the Preamble. Salient features ofIndia Constitution.

Module – 2

FR's, FD's and DPSP's: Fundamental Rights and its Restriction and limitations in different Complex Situations. Directive Principles of State Policy (DPSP) and its present relevance in our society with examples. Fundamental Duties and its Scope and significance in Nation building.

Module – 3

Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet, Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Supreme Court ofIndia, Judicial Reviews and Judicial Activism.

Module – 4

State Executive & Elections, Amendments and Emergency Provisions: State Executive, Election
Commission, Elections & Electoral Process. Amendment to Constitution (How and Why) and Important Constitutional Amendments till today. Emergency Provisions.

Module-5

Professional Ethics: Ethics & Values. Types of Ethics. Scope & Aims of Professional & Engineering Ethics.

Positive and Negative Faces of Engineering Ethics. Clash of Ethics, Conflicts of Interest. The impediments to Responsibility. Trust & Reliability in Engineering, IPRs (Intellectual Property Rights), Risks, Safety and liabilityin Engineering.

Course outcome (Course Skill Set) :

At the end of the course the student will be able to :

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

UNIVERSAL HUMAN VALUES-II: UNDERSTANDING HARMONY and ETHICAL HUMAN CONDUCT

Title of the subject

Course Code	**21UHV49**	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	2:0:0	SEE Marks	50
Total Hours of Pedagogy	20	Total Marks	100
Credits	01	Exam Hours	01

Course objectives:

This introductory course input is intended:

1. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
2. To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way.
3. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behaviour and mutually enriching interaction with Nature.

This course is intended to provide a much-needed orientational input in value education to the young enquiring minds.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. The methodology of this course is explorational and thus universally adaptable. It involves a systematic and rational study of the human being vis-à-vis the rest of existence.
2. The course is in the form of 20 lectures (discussions)
3. It is free from any dogma or value prescriptions.
4. It is a process of self-investigation and self-exploration, and not of giving sermons. Whatever is found as truth or reality is stated as a proposal and the students are facilitated to verify it in their own right, based on their Natural Acceptance and subsequent Experiential Validation – the whole existence is the lab and every activity is a source of reflection.
5. This process of self-exploration takes the form of a dialogue between the teacher and the students to begin with, and then to continue within the student in every activity, leading to continuous self-evolution.
6. This self-exploration also enables them to critically evaluate their pre-conditionings and present beliefs.

Module-1

Introduction to Value Education (4 hours)

Right Understanding, Relationship and Physical Facility (Holistic Development and the Role of Education)

Understanding Value Education, Self-exploration as the Process for Value Education, Continuous Happiness and Prosperity – the Basic Human Aspirations, Happiness and Prosperity – Current Scenario, Method to Fulfil the Basic Human Aspirations

Teaching-Learning Process	Introduction to Value Education- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Module-2

Harmony in the Human Being (4 hours)

Understanding Human being as the Co-existence of the Self and the Body, Distinguishing between the Needs of the Self and the Body, The Body as an Instrument of the Self, Understanding Harmony in the Self, Harmony of the Self with the Body, Programme to ensure self-regulation and Health

Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Module-3

Harmony in the Family and Society (4 hours)

Harmony in the Family – the Basic Unit of Human Interaction, 'Trust' – the Foundational Value in Relationship, 'Respect' – as the Right Evaluation, Other Feelings, Justice in Human-to-Human Relationship, Understanding Harmony in the Society, Vision for the Universal Human Order

Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Module-4

Harmony in the Nature/Existence (4 hours)

Understanding Harmony in the Nature, Interconnectedness, self-regulation and Mutual Fulfilment among the Four Orders of Nature, Realizing Existence as Co-existence at All Levels, The Holistic Perception of Harmony in Existence

Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Module-5

Implications of the Holistic Understanding – a Look at Professional Ethics (4 hours)

Natural Acceptance of Human Values, Definitiveness of (Ethical) Human Conduct, A Basis for Humanistic Education, Humanistic Constitution and Universal Human Order, Competence in Professional Ethics Holistic Technologies, Production Systems and Management Models-Typical Case Studies, Strategies for Transition towards Value-based Life and Profession

Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Course outcome (Course Skill Set)

By the end of the course, students are expected to become more aware of themselves, and their surroundings (family, society, nature); they would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.

They would have better critical ability. They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society). It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.

Scientific Foundations of Health

Course Title:	Scientific Foundations of Health		
Course Code:	BSFHK158/258	CIE Marks	50
Course Type (Theory/Practical /Integrated)	Theory	SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives

The course Scientific Foundations of Health (22SFH18/28) will enable the students,

1. To know about Health and wellness (and its Beliefs) & It's balance for positive mindset.
2. To Build the healthy lifestyles for good health for their better future.
3. To Create a Healthy and caring relationships to meet the requirements of good/social/positive life.
4. To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future
5. To Prevent and fight against harmful diseases for good health through positive mindset

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective:

Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion, (vii) Following the method of expeditionary learning Tools and techniques, (viii) Use of audio visual methods.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 **(03 hours of pedagogy)**

Good Health & It's balance for positive mindset: Health -Importance of Health, Influencing factors of Health, Health beliefs, Advantages of good health, Health & Behavior, Health & Society, Health & family, Health & Personality, Psychological disorders-Methods to improve good psychological health, Changing health habits for good health.

Module-2 **(03 hours of pedagogy)**

Building of healthy lifestyles for better future: Developing healthy diet for good health, Food & health, Nutritional guidelines for good health, Obesity & overweight disorders and its management, Eating disorders, Fitness components for health. Wellness and physical function. How to avoid exercise injuries.

Module-3 **(03 hours of pedagogy)**

Creation of Healthy and caring relationships : Building communication skills, Friends and friendship - Education, the value of relationship and communication skills, Relationships for Better or worsening of life, understanding of basic instincts of life (more than a biology), Changing health behaviours through social engineering.

Module-4 **(03 hours of pedagogy)**

Avoiding risks and harmful habits : Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, How addiction develops, Types of addictions, influencing factors of addictions, Differences between addictive people and non addictive people & their behaviors. Effects of addictions Such as..., how to recovery from addictions.

Module-5 **(03 hours of pedagogy)**

Preventing & fighting against diseases for good health: How to protect from different types of infections, How to reduce risks for good health, Reducing risks & coping with chronic conditions, Management of chronic illness for Quality of life, Health & Wellness of youth :a challenge for upcoming future, Measuring of health & wealth status.

Course outcome (Course Skill Set) :

At the end of the course Scientific Foundations of Health (22SFH18/28) the student will be able to:

CO1	To understand and analyse about Health and wellness (and its Beliefs) & It's balance for positive mindset.
CO2	Develop the healthy lifestyles for good health for their better future.
CO3	Build a Healthy and caring relationships to meet the requirements of good/social/positive life.
CO4	To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future.
CO5	Prevent and fight against harmful diseases for good health through positive mindset.

Assessment Details (both CIE and SEE) :

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50) in the semester-end examination(SEE), and a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation(CIE) :

Two Unit Tests each of 30 Marks (duration 01 hour)

- First test after the completion of 30-40 % of the syllabus
- Second test after completion of 80-90% of the syllabus

One Improvement test before the closing of the academic term may be conducted if necessary. However best two tests out of three shall be taken into consideration.

Two assignments each of 20 Marks

The teacher has to plan the assignments and get them completed by the students well before the closing of the term so that marks entry in the examination portal shall be done in time. Formative (Successive) Assessments include Assignments/Quizzes/Seminars/ Course projects/Field surveys/ Case studies/ Hands-on practice (experiments)/Group Discussions/ others.. The Teachers shall choose the types of assignments depending on the requirement of the course and plan to attain the Cos and POs. (to have a less stressed CIE, the portion of the syllabus should not be common /repeated for any of the methods of the CIE. Each method of CIE should have a different syllabus portion of the course). CIE methods /test question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

The sum of two tests, two assignments, will be out of 100 marks and will be scaled down to 50 marks

Semester End Examinations (SEE)

SEE paper shall be set for **50 questions, each of the 01 mark**. The pattern of the **question paper is MCQ** (multiple choice questions). The time allotted for SEE is **01 hour**. The student must secure a minimum of 35% of the maximum marks for SEE.

Suggested Learning Resources:

Textbook:

1. **"Scientific Foundations of Health" – Study Material Prepared by Dr. L Thimmesha, Published in VTU - University Website.**
2. **"Scientific Foundations of Health"**, (ISBN-978-81-955465-6-5) published by Infinite Learning Solutions, Bangalore – 2022.
3. **Health Psychology - A Textbook**, FOURTH EDITION by Jane Ogden McGraw Hill Education (India) Private Limited - Open University Press.

Reference Books:

1. **Health Psychology** (Second edition) by Charles Abraham, Mark Conner, Fiona Jones and Daryl O'Connor – Published by Routledge 711 Third Avenue, New York, NY 10017.
2. **HEALTH PSYCHOLOGY (Ninth Edition)** by SHELLEY E. TAYLOR - University of California, Los Angeles, McGraw Hill Education (India) Private Limited - Open University Press.

Department of Mechanical Engineering

Scientific Foundations of Health

Course Title:	Scientific Foundations of Health		
Course Code:	BSFHK158/258	CIE Marks	50
Course Type (Theory/Practical /Integrated)	Theory	SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives

The course Scientific Foundations of Health (22SFH18/28) will enable the students,

1. To know about Health and wellness (and its Beliefs) & It's balance for positive mindset.
2. To Build the healthy lifestyles for good health for their better future.
3. To Create a Healthy and caring relationships to meet the requirements of good/social/positive life.
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Teaching-Learning Process

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Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 **(03 hours of pedagogy)**

Good Health & It's balance for positive mindset: Health -Importance of Health, Influencing factors of Health, Health beliefs, Advantages of good health, Health & Behavior, Health & Society, Health & family, Health & Personality, Psychological disorders-Methods to improve good psychological health, Changing health habits for good health.

Module-2 **(03 hours of pedagogy)**

Building of healthy lifestyles for better future: Developing healthy diet for good health, Food & health, Nutritional guidelines for good health, Obesity & overweight disorders and its management, Eating disorders, Fitness components for health. Wellness and physical function. How to avoid exercise injuries.

Module-3 **(03 hours of pedagogy)**

Creation of Healthy and caring relationships : Building communication skills, Friends and friendship - Education, the value of relationship and communication skills, Relationships for Better or worsening of life, understanding of basic instincts of life (more than a biology), Changing health behaviours through social engineering.

Module-4 **(03 hours of pedagogy)**

Avoiding risks and harmful habits : Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, How addiction develops, Types of addictions, influencing factors of addictions, Differences between addictive people and non addictive people & their behaviors. Effects of addictions Such as..., how to recovery from addictions.

Module-5 **(03 hours of pedagogy)**

Preventing & fighting against diseases for good health: How to protect from different types of infections, How to reduce risks for good health, Reducing risks & coping with chronic conditions, Management of chronic illness for Quality of life, Health & Wellness of youth :a challenge for upcoming future, Measuring of health & wealth status.

Course Code	**21UHV49**	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	2:0:0	SEE Marks	50
Total Hours of Pedagogy	20	Total Marks	100
Credits	01	Exam Hours	01

Course objectives:

This introductory course input is intended:

4. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
5. To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way.
6. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behaviour and mutually enriching interaction with Nature.

This course is intended to provide a much-needed orientational input in value education to the young enquiring minds.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

7. The methodology of this course is explorational and thus universally adaptable. It involves a systematic and rational study of the human being vis-à-vis the rest of existence.
8. The course is in the form of 20 lectures (discussions)
9. It is free from any dogma or value prescriptions.
10. It is a process of self-investigation and self-exploration, and not of giving sermons. Whatever is found as truth or reality is stated as a proposal and the students are facilitated to verify it in their own right, based on their Natural Acceptance and subsequent Experiential Validation – the whole existence is the lab and every activity is a source of reflection.
11. This process of self-exploration takes the form of a dialogue between the teacher and the students to begin with, and then to continue within the student in every activity, leading to continuous self-evolution.
12. This self-exploration also enables them to critically evaluate their pre-conditionings and present beliefs.

Module-1

Introduction to Value Education (4 hours) Right Understanding, Relationship and Physical Facility (Holistic Development and the Role of Education) Understanding Value Education, Self-exploration as the Process for Value Education, Continuous Happiness and Prosperity – the Basic Human Aspirations, Happiness and Prosperity – Current Scenario, Method to Fulfil the Basic Human Aspirations	
Teaching-Learning Process	Introduction to Value Education- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-2	
Harmony in the Human Being (4 hours) Understanding Human being as the Co-existence of the Self and the Body, Distinguishing between the Needs of the Self and the Body, The Body as an Instrument of the Self, Understanding Harmony in the Self, Harmony of the Self with the Body, Programme to ensure self-regulation and Health	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-3	
Harmony in the Family and Society (4 hours) Harmony in the Family – the Basic Unit of Human Interaction, 'Trust' – the Foundational Value in Relationship, 'Respect' – as the Right Evaluation, Other Feelings, Justice in Human-to-Human Relationship, Understanding Harmony in the Society, Vision for the Universal Human Order	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-4	
Harmony in the Nature/Existence (4 hours) Understanding Harmony in the Nature, Interconnectedness, self-regulation and Mutual Fulfilment among the Four Orders of Nature, Realizing Existence as Co-existence at All Levels, The Holistic Perception of Harmony in Existence	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-5	

Implications of the Holistic Understanding – a Look at Professional Ethics (4 hours)

Natural Acceptance of Human Values, Definitiveness of (Ethical) Human Conduct, A Basis for Humanistic Education, Humanistic Constitution and Universal Human Order, Competence in Professional Ethics Holistic Technologies, Production Systems and Management Models-Typical Case Studies, Strategies for Transition towards Value-based Life and Profession

Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Course outcome (Course Skill Set)

By the end of the course, students are expected to become more aware of themselves, and their surroundings (family, society, nature); they would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.

They would have better critical ability. They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society). It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.

26.10.2022

BICOK107-207

Theory - 01 Credit Course

Indian Constitution

Course Title:	**Indian Constitution**		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives:

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

(ii) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

Department of Computer Science & Engineering

Scientific Foundations of Health

Course Title:	Scientific Foundations of Health		
Course Code:	BSFHK158/258	CIE Marks	50
Course Type (Theory/Practical /Integrated)	Theory	SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives

The course Scientific Foundations of Health (22SFH18/28) will enable the students,

1. To know about Health and wellness (and its Beliefs) & It's balance for positive mindset.
2. To Build the healthy lifestyles for good health for their better future.
3. To Create a Healthy and caring relationships to meet the requirements of good/social/positive life.
4. To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future
5. To Prevent and fight against harmful diseases for good health through positive mindset

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective:

Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low\Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion, (vii) Following the method of expeditionary learning Tools and techniques, (viii) Use of audio visual methods.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 **(03 hours of pedagogy)**

Good Health & It's balance for positive mindset: Health -Importance of Health, Influencing factors of Health, Health beliefs, Advantages of good health, Health & Behavior, Health & Society, Health & family, Health & Personality, Psychological disorders-Methods to improve good psychological health, Changing health habits for good health.

Module-2 **(03 hours of pedagogy)**

Building of healthy lifestyles for better future: Developing healthy diet for good health, Food & health, Nutritional guidelines for good health, Obesity & overweight disorders and its management, Eating disorders, Fitness components for health. Wellness and physical function. How to avoid exercise injuries.

Module-3 **(03 hours of pedagogy)**

Creation of Healthy and caring relationships : Building communication skills, Friends and friendship - Education, the value of relationship and communication skills, Relationships for Better or worsening of life, understanding of basic instincts of life (more than a biology), Changing health behaviours through social engineering.

Module-4 **(03 hours of pedagogy)**

Avoiding risks and harmful habits : Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, How addiction develops, Types of addictions, influencing factors of addictions, Differences between addictive people and non addictive people & their behaviors. Effects of addictions Such as...., how to recovery from addictions.

Module-5 **(03 hours of pedagogy)**

Preventing & fighting against diseases for good health: How to protect from different types of infections, How to reduce risks for good health, Reducing risks & coping with chronic conditions, Management of chronic illness for Quality of life, Health & Wellness of youth :a challenge for upcoming future, Measuring of health & wealth status.

CHILDREN'S EDUCATION SOCIETY(Regd.)
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Constitution of India and Professional Ethics (CIP)

Course Code	**21CIP37/47**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**L:0,T:2,P:0 = 02 Hours**	**SEE Marks**	**50**
Total Hours of Pedagogy	**02 Hours/Week**	**Total Marks**	**100**
Credits	**01**	**Exam Hours**	**01 Hours**

Course objectives: This course will enable the students

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalizedlearning, (vi) Problems based learning through discussion.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation

films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module – 1

Introduction to Indian Constitution: The Necessity of the Constitution, The Societies before and after the
Constitution adoption. Introduction to the Indian constitution, The Making of the Constitution, The Role of the
Constituent Assembly. The Preamble of Indian Constitution & Key concepts of the Preamble. Salient features ofIndia Constitution.

Module – 2

FR's, FD's and DPSP's: Fundamental Rights and its Restriction and limitations in different Complex Situations. Directive Principles of State Policy (DPSP) and its present relevance in our society with examples. Fundamental Duties and its Scope and significance in Nation building.

Module – 3

Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet, Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Supreme Court ofIndia, Judicial Reviews and Judicial Activism.

Module – 4

State Executive & Elections, Amendments and Emergency Provisions: State Executive, Election
Commission, Elections & Electoral Process. Amendment to Constitution (How and Why) and Important Constitutional Amendments till today. Emergency Provisions.

Module-5

Professional Ethics: Ethics & Values. Types of Ethics. Scope & Aims of Professional & Engineering Ethics.

Positive and Negative Faces of Engineering Ethics. Clash of Ethics, Conflicts of Interest. The impediments to Responsibility. Trust & Reliability in Engineering, IPRs (Intellectual Property Rights), Risks, Safety and liabilityin Engineering.

Course outcome (Course Skill Set) :

At the end of the course the student will be able to :

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

UNIVERSAL HUMAN VALUES-II: UNDERSTANDING HARMONY and ETHICAL HUMAN CONDUCT

Title of the subject

Course Code	**21UHV49**	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	2:0:0	SEE Marks	50
Total Hours of Pedagogy	20	Total Marks	100
Credits	01	Exam Hours	01

Course objectives:

This introductory course input is intended:

7. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
8. To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way.
9. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behaviour and mutually enriching interaction with Nature.

This course is intended to provide a much-needed orientational input in value education to the young enquiring minds.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

13. The methodology of this course is explorational and thus universally adaptable. It involves a systematic and rational study of the human being vis-à-vis the rest of existence.
14. The course is in the form of 20 lectures (discussions)
15. It is free from any dogma or value prescriptions.
16. It is a process of self-investigation and self-exploration, and not of giving sermons. Whatever is found as truth or reality is stated as a proposal and the students are facilitated to verify it in their own right, based on their Natural Acceptance and subsequent Experiential Validation – the whole existence is the lab and every activity is a source of reflection.
17. This process of self-exploration takes the form of a dialogue between the teacher and the students to begin with, and then to continue within the student in every activity, leading to continuous self-evolution.
18. This self-exploration also enables them to critically evaluate their pre-conditionings and present beliefs.

Module-1

Introduction to Value Education (4 hours)

Right Understanding, Relationship and Physical Facility (Holistic Development and the Role of Education)

Understanding Value Education, Self-exploration as the Process for Value Education, Continuous Happiness and Prosperity – the Basic Human Aspirations, Happiness and Prosperity – Current Scenario, Method to Fulfil the Basic Human Aspirations

Teaching-Learning Process	Introduction to Value Education- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Module-2

Harmony in the Human Being (4 hours)

Understanding Human being as the Co-existence of the Self and the Body, Distinguishing between the Needs of the Self and the Body, The Body as an Instrument of the Self, Understanding Harmony in the Self, Harmony of the Self with the Body, Programme to ensure self-regulation and Health

Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Module-3

Harmony in the Family and Society (4 hours)

Harmony in the Family – the Basic Unit of Human Interaction, 'Trust' – the Foundational Value in Relationship, 'Respect' – as the Right Evaluation, Other Feelings, Justice in Human-to-Human Relationship, Understanding Harmony in the Society, Vision for the Universal Human Order

Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Module-4

Harmony in the Nature/Existence (4 hours)

Understanding Harmony in the Nature, Interconnectedness, self-regulation and Mutual Fulfilment among the Four Orders of Nature, Realizing Existence as Co-existence at All Levels, The Holistic Perception of Harmony in Existence

Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Module-5

Implications of the Holistic Understanding – a Look at Professional Ethics (4 hours)

Natural Acceptance of Human Values, Definitiveness of (Ethical) Human Conduct, A Basis for Humanistic Education, Humanistic Constitution and Universal Human Order, Competence in Professional Ethics Holistic Technologies, Production Systems and Management Models-Typical Case Studies, Strategies for Transition towards Value-based Life and Profession

Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Course outcome (Course Skill Set)

By the end of the course, students are expected to become more aware of themselves, and their surroundings (family, society, nature); they would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.

They would have better critical ability. They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society). It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.

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E-mail:engprincipal@theoxford.edu. Web:www.theoxfordengg.org

Department of Electrical and Communication Engineering

Constitution of India and Professional Ethics (CIP)

Course Code	**21CIP37/47**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**L:0,T:2,P:0 = 02 Hours**	**SEE Marks**	**50**
Total Hours of Pedagogy	**02 Hours/Week**	**Total Marks**	**100**
Credits	**01**	**Exam Hours**	**01 Hours**

Course objectives: This course will enable the students

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalizedlearning, (vi) Problems based learning through discussion.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation

films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module – 1

Introduction to Indian Constitution: The Necessity of the Constitution, The Societies before and after theConstitution adoption. Introduction to the Indian constitution, The Making of the Constitution, The Role of the
Constituent Assembly. The Preamble of Indian Constitution & Key concepts of the Preamble. Salient features ofIndia Constitution.

Module – 2

FR's, FD's and DPSP's: Fundamental Rights and its Restriction and limitations in different Complex Situations. Directive Principles of State Policy (DPSP) and its present relevance in our society with examples. Fundamental Duties and its Scope and significance in Nation building.

Module – 3

Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet, Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Supreme Court of India, Judicial Reviews and Judicial Activism.

Module – 4

State Executive & Elections, Amendments and Emergency Provisions: State Executive, Election Commission, Elections & Electoral Process. Amendment to Constitution (How and Why) and Important Constitutional Amendments till today. Emergency Provisions.

Module-5

Professional Ethics: Ethics & Values. Types of Ethics. Scope & Aims of Professional & Engineering Ethics.Positive and Negative Faces of Engineering Ethics. Clash of Ethics, Conflicts of Interest. The impediments to
Responsibility. Trust & Reliability in Engineering, IPRs (Intellectual Property Rights), Risks, Safety and liabilityin Engineering.

Course outcome (Course Skill Set) :

At the end of the course the student will be able to :

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

Scientific Foundations of Health

Course Title:	Scientific Foundations of Health		
Course Code:	BSFHK158/258	CIE Marks	50
Course Type (Theory/Practical /Integrated)	Theory	SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives

The course Scientific Foundations of Health (22SFH18/28) will enable the students,

1. To know about Health and wellness (and its Beliefs) & It's balance for positive mindset.
2. To Build the healthy lifestyles for good health for their better future.
3. To Create a Healthy and caring relationships to meet the requirements of good/social/positive life.
4. To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future
5. To Prevent and fight against harmful diseases for good health through positive mindset

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective:

Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion, (vii) Following the method of expeditionary learning Tools and techniques, (viii) Use of audio visual methods.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 **(03 hours of pedagogy)**

Good Health & It's balance for positive mindset: Health -Importance of Health, Influencing factors of Health, Health beliefs, Advantages of good health, Health & Behavior, Health & Society, Health & family, Health & Personality, Psychological disorders-Methods to improve good psychological health, Changing health habits for good health.

Module-2 **(03 hours of pedagogy)**

Building of healthy lifestyles for better future: Developing healthy diet for good health, Food & health, Nutritional guidelines for good health, Obesity & overweight disorders and its management, Eating disorders, Fitness components for health. Wellness and physical function. How to avoid exercise injuries.

Module-3 **(03 hours of pedagogy)**

Creation of Healthy and caring relationships : Building communication skills, Friends and friendship - Education, the value of relationship and communication skills, Relationships for Better or worsening of life, understanding of basic instincts of life (more than a biology), Changing health behaviours through social engineering.

Module-4 **(03 hours of pedagogy)**

Avoiding risks and harmful habits : Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, How addiction develops, Types of addictions, influencing factors of addictions, Differences between addictive people and non addictive people & their behaviors. Effects of addictions Such as..., how to recovery from addictions.

Module-5 **(03 hours of pedagogy)**

Preventing & fighting against diseases for good health: How to protect from different types of infections, How to reduce risks for good health, Reducing risks & coping with chronic conditions, Management of chronic illness for Quality of life, Health & Wellness of youth :a challenge for upcoming future, Measuring of health & wealth status.

Department of Artificial Intelligence and Machine Learning

26.10.2022

BICOK107-207

Theory - 01 Credit Course

Indian Constitution

Course Title:	Indian Constitution		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching -Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

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(vi) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students in theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation. Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governor, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

SAMPLE TEMPLATE

IV Semester

UNIVERSAL HUMAN VALUES-II: UNDERSTANDING HARMONY and ETHICAL HUMAN CONDUCT

Title of the subject

Course Code	21UHV49	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	2:0:0	SEE Marks	50
Total Hours of Pedagogy	20	Total Marks	100
Credits	01	Exam Hours	01

Course objectives:

This introductory course input is intended:

1. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
2. To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way.
3. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behaviour and mutually enriching interaction with Nature.

This course is intended to provide a much-needed orientational input in value education to the young enquiring minds.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. The methodology of this course is explorational and thus universally adaptable. It involves a systematic and rational study of the human being vis-à-vis the rest of existence.
2. The course is in the form of 20 lectures (discussions)
3. It is free from any dogma or value prescriptions.
4. It is a process of self-investigation and self-exploration, and not of giving sermons. Whatever is found as truth or reality is stated as a proposal and the students are facilitated to verify it in their own right, based on their Natural Acceptance and subsequent Experiential Validation – the whole existence is the lab and every activity is a source of reflection.
5. This process of self-exploration takes the form of a dialogue between the teacher and the students to begin with, and then to continue within the student in every activity, leading to continuous self-evolution.
6. This self-exploration also enables them to critically evaluate their pre-conditionings and present beliefs.

Module-1

Introduction to Value Education (4 hours)

Right Understanding, Relationship and Physical Facility (Holistic Development and the Role of Education)
Understanding Value Education, Self-exploration as the Process for Value Education, Continuous Happiness and Prosperity – the Basic Human Aspirations, Happiness and Prosperity – Current Scenario, Method to Fulfil the Basic Human Aspirations

Teaching-Learning Process	Introduction to Value Education- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

SAMPLE TEMPLATE

Module-2	
Harmony in the Human Being (4 hours) Understanding Human being as the Co-existence of the Self and the Body, Distinguishing between the Needs of the Self and the Body, The Body as an Instrument of the Self, Understanding Harmony in the Self, Harmony of the Self with the Body, Programme to ensure self-regulation and Health	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-3	
Harmony in the Family and Society (4 hours) Harmony in the Family – the Basic Unit of Human Interaction, 'Trust' – the Foundational Value in Relationship, 'Respect' – as the Right Evaluation, Other Feelings, Justice in Human-to-Human Relationship, Understanding Harmony in the Society, Vision for the Universal Human Order	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-4	
Harmony in the Nature/Existence (4 hours) Understanding Harmony in the Nature, Interconnectedness, self-regulation and Mutual Fulfilment among the Four Orders of Nature, Realizing Existence as Co-existence at All Levels, The Holistic Perception of Harmony in Existence	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-5	
Implications of the Holistic Understanding – a Look at Professional Ethics (4 hours) Natural Acceptance of Human Values, Definitiveness of (Ethical) Human Conduct, A Basis for Humanistic Education, Humanistic Constitution and Universal Human Order, Competence in Professional Ethics Holistic Technologies, Production Systems and Management Models-Typical Case Studies, Strategies for Transition towards Value-based Life and Profession	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Course outcome (Course Skill Set) By the end of the course, students are expected to become more aware of themselves, and their surroundings (family, society, nature); they would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind. They would have better critical ability. They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society). It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.	

26.10.2022

Theory - 01 Credit Course **BSFHK158/258**

Scientific Foundations of Health

Course Title:	Scientific Foundations of Health		
Course Code:	BSFHK158/258	CIE Marks	50
Course Type (Theory/Practical /Integrated)	Theory	SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives

The course Scientific Foundations of Health (22SFH18/28) will enable the students.

1. To know about Health and wellness (and its Beliefs) & It's balance for positive mindset.
2. To Build the healthy lifestyles for good health for their better future.
3. To Create a Healthy and caring relationships to meet the requirements of good/social/positive life.
4. To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future
5. To Prevent and fight against harmful diseases for good health through positive mindset

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective:

Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion, (vii) Following the method of expeditionary learning Tools and techniques, (viii) Use of audio visual methods.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 **(03 hours of pedagogy)**

Good Health & It's balance for positive mindset: Health -Importance of Health, Influencing factors of Health, Health beliefs, Advantages of good health, Health & Behavior, Health & Society, Health & family, Health & Personality, Psychological disorders-Methods to improve good psychological health, Changing health habits for good health.

Module-2 **(03 hours of pedagogy)**

Building of healthy lifestyles for better future: Developing healthy diet for good health, Food & health, Nutritional guidelines for good health, Obesity & overweight disorders and its management, Eating disorders, Fitness components for health, Wellness and physical function, How to avoid exercise injuries.

Module-3 **(03 hours of pedagogy)**

Creation of Healthy and caring relationships : Building communication skills, Friends and friendship - Education, the value of relationship and communication skills, Relationships for Better or worsening of life, understanding of basic instincts of life (more than a biology), Changing health behaviours through social engineering.

Module-4 **(03 hours of pedagogy)**

Avoiding risks and harmful habits : Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, How addiction develops, Types of addictions, influencing factors of addictions, Differences between addictive people and non addictive people & their behaviors. Effects of addictions Such as.... how to recovery from addictions.

Module-5 **(03 hours of pedagogy)**

Preventing & fighting against diseases for good health: How to protect from different types of infections, How to reduce risks for good health, Reducing risks & coping with chronic conditions, Management of chronic illness for Quality of life, Health & Wellness of youth :a challenge for upcoming future, Measuring of health & wealth status.

CHILDREN'S EDUCATION SOCIETY(Regd.)
THE OXFORD COLLEGE OF ENGINEERING
(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.
Accreditated NAAC 'A' Grade, Approved by A.I.C.T.E. New Delhi. Recognised by UGC Under Section 2(f))
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E-mail:engprincipal@theoxford.edu. Web:www.theoxfordengg.org

25112022 OK

III/IV Semester

Constitution of India and Professional Ethics (CIP)			
Course Code	21CIP37/47	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	L:0,T:2,P:0 = 02 Hours	SEE Marks	50
Total Hours of Pedagogy	02 Hours/Week	Total Marks	100
Credits	01	Exam Hours	01 Hours

Course objectives: This course will enable the students

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module - 1

Introduction to Indian Constitution: The Necessity of the Constitution, The Societies before and after the Constitution adoption. Introduction to the Indian constitution, The Making of the Constitution, The Role of the Constituent Assembly. The Preamble of Indian Constitution & Key concepts of the Preamble. Salient features of India Constitution.

Module - 2

FR's, FD's and DPSP's: Fundamental Rights and its Restriction and limitations in different Complex Situations. Directive Principles of State Policy (DPSP) and its present relevance in our society with examples. Fundamental Duties and its Scope and significance in Nation building.

Module - 3

Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet, Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Supreme Court of India, Judicial Reviews and Judicial Activism.

Module - 4

State Executive & Elections, Amendments and Emergency Provisions: State Executive, Election Commission, Elections & Electoral Process. Amendment to Constitution (How and Why) and Important Constitutional Amendments till today. Emergency Provisions.

Module-5

Professional Ethics: Ethics & Values. Types of Ethics. Scope & Aims of Professional & Engineering Ethics. Positive and Negative Faces of Engineering Ethics. Clash of Ethics, Conflicts of Interest. The impediments to Responsibility. Trust & Reliability in Engineering. IPRs (Intellectual Property Rights), Risks, Safety and liability in Engineering.

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E-mail:engprincipal@theoxford.edu. Web:www.theoxfordengg.org

Department of Mechatronics

SAMPLE TEMPLATE

IV Semester

UNIVERSAL HUMAN VALUES-II: UNDERSTANDING HARMONY and ETHICAL HUMAN CONDUCT

Title of the subject

Course Code	21UHV49	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	2:0:0	SEE Marks	50
Total Hours of Pedagogy	20	Total Marks	100
Credits	01	Exam Hours	01

Course objectives:

This introductory course input is intended:

1. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
2. To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way.
3. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behaviour and mutually enriching interaction with Nature.

This course is intended to provide a much-needed orientational input in value education to the young enquiring minds.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. The methodology of this course is explorational and thus universally adaptable. It involves a systematic and rational study of the human being vis-à-vis the rest of existence.
2. The course is in the form of 20 lectures (discussions)
3. It is free from any dogma or value prescriptions.
4. It is a process of self-investigation and self-exploration, and not of giving sermons. Whatever is found as truth or reality is stated as a proposal and the students are facilitated to verify it in their own right, based on their Natural Acceptance and subsequent Experiential Validation – the whole existence is the lab and every activity is a source of reflection.
5. This process of self-exploration takes the form of a dialogue between the teacher and the students to begin with, and then to continue within the student in every activity, leading to continuous self-evolution.
6. This self-exploration also enables them to critically evaluate their pre-conditionings and present beliefs.

Module-1

Introduction to Value Education (4 hours)

Right Understanding, Relationship and Physical Facility (Holistic Development and the Role of Education)

Understanding Value Education, Self-exploration as the Process for Value Education, Continuous Happiness and Prosperity – the Basic Human Aspirations, Happiness and Prosperity – Current Scenario, Method to Fulfil the Basic Human Aspirations

Teaching-Learning Process	Introduction to Value Education- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

1

SAMPLE TEMPLATE

Module-2	
Harmony in the Human Being (4 hours) Understanding Human being as the Co-existence of the Self and the Body, Distinguishing between the Needs of the Self and the Body, The Body as an Instrument of the Self, Understanding Harmony in the Self, Harmony of the Self with the Body, Programme to ensure self-regulation and Health	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-3	
Harmony in the Family and Society (4 hours) Harmony in the Family – the Basic Unit of Human Interaction, 'Trust' – the Foundational Value in Relationship, 'Respect' – as the Right Evaluation, Other Feelings, Justice in Human-to-Human Relationship, Understanding Harmony in the Society, Vision for the Universal Human Order	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-4	
Harmony in the Nature/Existence (4 hours) Understanding Harmony in the Nature, Interconnectedness, self-regulation and Mutual Fulfilment among the Four Orders of Nature, Realizing Existence as Co-existence at All Levels, The Holistic Perception of Harmony in Existence	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-5	
Implications of the Holistic Understanding – a Look at Professional Ethics (4 hours) Natural Acceptance of Human Values, Definitiveness of (Ethical) Human Conduct, A Basis for Humanistic Education, Humanistic Constitution and Universal Human Order, Competence in Professional Ethics Holistic Technologies, Production Systems and Management Models-Typical Case Studies, Strategies for Transition towards Value-based Life and Profession	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Course outcome (Course Skill Set) By the end of the course, students are expected to become more aware of themselves, and their surroundings (family, society, nature); they would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind. They would have better critical ability. They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society). It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.	

Scientific Foundations of Health

Course Title:	Scientific Foundations of Health		
Course Code:	BSFHK158/258	CIE Marks	50
Course Type (Theory/Practical /Integrated)	Theory	SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives

The course Scientific Foundations of Health (22SFH18/28) will enable the students,

1. To know about Health and wellness (and its Beliefs) & It's balance for positive mindset.
2. To Build the healthy lifestyles for good health for their better future.
3. To Create a Healthy and caring relationships to meet the requirements of good/social/positive life.
4. To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future
5. To Prevent and fight against harmful diseases for good health through positive mindset

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective:

Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion, (vii) Following the method of expeditionary learning Tools and techniques, (viii) Use of audio visual methods.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 **(03 hours of pedagogy)**

Good Health & It's balance for positive mindset: Health -Importance of Health, Influencing factors of Health, Health beliefs, Advantages of good health, Health & Behavior, Health & Society, Health & family, Health & Personality, Psychological disorders-Methods to improve good psychological health, Changing health habits for good health.

Module-2 **(03 hours of pedagogy)**

Building of healthy lifestyles for better future: Developing healthy diet for good health, Food & health, Nutritional guidelines for good health, Obesity & overweight disorders and its management, Eating disorders, Fitness components for health. Wellness and physical function. How to avoid exercise injuries.

Module-3 **(03 hours of pedagogy)**

Creation of Healthy and caring relationships : Building communication skills, Friends and friendship - Education, the value of relationship and communication skills, Relationships for Better or worsening of life, understanding of basic instincts of life (more than a biology), Changing health behaviours through social engineering.

Module-4 **(03 hours of pedagogy)**

Avoiding risks and harmful habits : Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, How addiction develops, Types of addictions, influencing factors of addictions, Differences between addictive people and non addictive people & their behaviors. Effects of addictions Such as..., how to recovery from addictions.

Module-5 **(03 hours of pedagogy)**

Preventing & fighting against diseases for good health: How to protect from different types of infections, How to reduce risks for good health, Reducing risks & coping with chronic conditions, Management of chronic illness for Quality of life, Health & Wellness of youth :a challenge for upcoming future, Measuring of health & wealth status.

Department of Civil Engineering

26.10.2022

Theory - 01 Credit Course **BICOK107-207**

Indian Constitution

Course Title:	Indian Constitution		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P:S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

(ii) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

IV Semester

UNIVERSAL HUMAN VALUES-II: UNDERSTANDING HARMONY and ETHICAL HUMAN CONDUCT			
Course Code	21UHV49	CIE Marks	50
Teaching Hours/Week (L:T:P:S)	2:0:0	SEE Marks	50
Total Hours of Pedagogy	20	Total Marks	100
Credits	01	Exam Hours	01

Course objectives:

This introductory course input is intended:

1. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
2. To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way.
3. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behaviour and mutually enriching interaction with Nature.

This course is intended to provide a much-needed orientational input in value education to the young enquiring minds.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. The methodology of this course is explorational and thus universally adaptable. It involves a systematic and rational study of the human being vis-à-vis the rest of existence.
2. The course is in the form of 20 lectures (discussions)
3. It is free from any dogma or value prescriptions.
4. It is a process of self-investigation and self-exploration, and not of giving sermons. Whatever is found as truth or reality is stated as a proposal and the students are facilitated to verify it in their own right, based on their Natural Acceptance and subsequent Experiential Validation – the whole existence is the lab and every activity is a source of reflection.
5. This process of self-exploration takes the form of a dialogue between the teacher and the students to begin with, and then to continue within the student in every activity, leading to continuous self-evolution.
6. This self-exploration also enables them to critically evaluate their pre-conditionings and present beliefs.

Module-1

Introduction to Value Education (4 hours)

Right Understanding, Relationship and Physical Facility (Holistic Development and the Role of Education)
Understanding Value Education, Self-exploration as the Process for Value Education, Continuous Happiness and Prosperity – the Basic Human Aspirations, Happiness and Prosperity – Current Scenario, Method to Fulfil the Basic Human Aspirations

Teaching-Learning Process	Introduction to Value Education- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos

Module-2	
Harmony in the Human Being (4 hours) Understanding Human being as the Co-existence of the Self and the Body, Distinguishing between the Needs of the Self and the Body, The Body as an Instrument of the Self, Understanding Harmony in the Self, Harmony of the Self with the Body, Programme to ensure self-regulation and Health	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-3	
Harmony in the Family and Society (4hours) Harmony in the Family – the Basic Unit of Human Interaction, 'Trust' – the Foundational Value in Relationship, 'Respect' – as the Right Evaluation, Other Feelings, Justice in Human-to-Human Relationship, Understanding Harmony in the Society, Vision for the Universal Human Order	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-4	
Harmony in the Nature/Existence (4 hours) Understanding Harmony in the Nature, Interconnectedness, self-regulation and Mutual Fulfilment among the FourOrders of Nature, Realizing Existence as Co-existence at All Levels, The Holistic Perception of Harmony in Existence	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Module-5	
Implications of the Holistic Understanding – a Look at Professional Ethics (4 hours) Natural Acceptance of Human Values, Definitiveness of (Ethical) Human Conduct, A Basis for Humanistic Education, Humanistic Constitution and UniversalHuman Order, Competence in Professional EthicsHolistic Technologies, Production Systems and Management Models-Typical Case Studies, Strategies for Transition towards Value-based Life and Profession	
Teaching-Learning Process	Introduction to the concepts- Chalk and talk method, Discussion, Sharing of experiences, Live Examples and videos
Course outcome (Course Skill Set) By the end of the course, students are expected to become more aware of themselves, and their surroundings (family, society, nature); they would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind. They would have better critical ability. They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society). It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.	

2

PUBLIC HEALTH ENGINEERING			
Course Code	21CV43	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	2+2+2+0	SEE Marks	50
Total Hours of Pedagogy	50	Total Marks	100
Credits	4	Exam Hours	3

Course objectives:

1. Analyze the variation of water demand and to estimate water requirement for a community.
2. Study drinking water quality standards and to illustrate qualitative analysis of water.
3. Analysis of physical and chemical characteristics of water and wastewater.
4. Understand and design of different unit operations and unit process involved in water and wastewater treatment process

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. Apart from conventional lecture methods various types of innovative teaching techniques through videos, animation films may be adopted so that the delivered lesson can progress the students in theoretical, applied and practical skills.
2. Arrange field visits to give brief information about the water and wastewater treatment plant.
3. Encourage collaborative (Group Learning) Learning in the class.
4. Ask at least three HOTS (Higher-order Thinking) questions in the class, which promotes critical thinking and enhance the knowledge of treatment processes.
5. Adopt Problem Based Learning (PBL), which fosters students, Analytical skills, develop thinking skills such as the ability to evaluate, generalize, and analyze information rather than simply recall it.
6. Seminars, surprise tests and Quizzes may be arranged for students in respective subjects to develop skills.

Module-1

Introduction: Water: Need for protected water supply, Demand of Water: Types of water demands – domestic demand, industrial, institutional and commercial demand, public use and fire demand estimation, factors affecting per capita demand, Variations in demand of water, Peak factor.
Design period and factors governing design period. Methods of population forecasting and numerical problems. Physico chemical characteristics of water(Analysis to be conducted in laboratory session). Sampling.

8hours

Teaching-Learning Process	Chalk and talk, powerpoint presentation, demonstration and analysis in laboratory

Department of Electrical & Electronics Engineering

Indian Constitution

Course Title:	**Indian Constitution**		
Course Code:	BICOK107-207	CIE Marks	50
Course Type (Theory/Practical /Integrated)		SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives :

The course **INDIAN CONSTITUTION (22ICO17 / 27)** will enable the students,

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

(ii) Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 (03 hours of pedagogy)

Indian Constitution: Necessity of the Constitution, Societies before and after the Constitution adoption. Introduction to the Indian constitution, Making of the Constitution, Role of the Constituent Assembly.

Module-2 (03 hours of pedagogy)

Salient features of India Constitution. Preamble of Indian Constitution & Key concepts of the Preamble. Fundamental Rights (FR's) and its Restriction and limitations in different Complex Situations. building.

Module-3 (03 hours of pedagogy)

Directive Principles of State Policy (DPSP's) and its present relevance in Indian society. Fundamental Duties and its Scope and significance in Nation, Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet.

Module-4 (03 hours of pedagogy)

Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Judicial System of India, Supreme Court of India and other Courts, Judicial Reviews and Judicial Activism.

Module-5 (03 hours of pedagogy)

State Executive and Governer, CM, State Cabinet, Legislature - VS & VP, Election Commission, Elections & Electoral Process. Amendment to Constitution, and Important Constitutional Amendments till today. Emergency Provisions.

Course outcome (Course Skill Set)

At the end of the course 22ICO17/27 the student will be able to:

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

Scientific Foundations of Health

Course Title:	Scientific Foundations of Health		
Course Code:	BSFHK158/258	CIE Marks	50
Course Type (Theory/Practical /Integrated)	Theory	SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	1:0:0:0	Exam Hours	01 Theory
Total Hours of Pedagogy	15 hours	Credits	01

Course objectives

The course Scientific Foundations of Health (22SFH18/28) will enable the students,

1. To know about Health and wellness (and its Beliefs) & It's balance for positive mindset.
2. To Build the healthy lifestyles for good health for their better future.
3. To Create a Healthy and caring relationships to meet the requirements of good/social/positive life.
4. To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future
5. To Prevent and fight against harmful diseases for good health through positive mindset

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective:

Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion, (vii) Following the method of expeditionary learning Tools and techniques, (viii) Use of audio visual methods.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module-1 **(03 hours of pedagogy)**

Good Health & It's balance for positive mindset: Health -Importance of Health, Influencing factors of Health, Health beliefs, Advantages of good health, Health & Behavior, Health & Society, Health & family, Health & Personality, Psychological disorders-Methods to improve good psychological health, Changing health habits for good health.

Module-2 **(03 hours of pedagogy)**

Building of healthy lifestyles for better future: Developing healthy diet for good health, Food & health, Nutritional guidelines for good health, Obesity & overweight disorders and its management, Eating disorders, Fitness components for health. Wellness and physical function. How to avoid exercise injuries.

Module-3 **(03 hours of pedagogy)**

Creation of Healthy and caring relationships : Building communication skills, Friends and friendship - Education, the value of relationship and communication skills, Relationships for Better or worsening of life, understanding of basic instincts of life (more than a biology), Changing health behaviours through social engineering.

Module-4 **(03 hours of pedagogy)**

Avoiding risks and harmful habits : Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, How addiction develops, Types of addictions, influencing factors of addictions, Differences between addictive people and non addictive people & their behaviors. Effects of addictions Such as..., how to recovery from addictions.

Module-5 **(03 hours of pedagogy)**

Preventing & fighting against diseases for good health: How to protect from different types of infections, How to reduce risks for good health, Reducing risks & coping with chronic conditions, Management of chronic illness for Quality of life, Health & Wellness of youth :a challenge for upcoming future, Measuring of health & wealth status.

Course outcome (Course Skill Set) :

At the end of the course Scientific Foundations of Health (22SFH18/28) the student will be able to:

CO1	To understand and analyse about Health and wellness (and its Beliefs) & It's balance for positive mindset.
CO2	Develop the healthy lifestyles for good health for their better future.
CO3	Build a Healthy and caring relationships to meet the requirements of good/social/positive life.
CO4	To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future.
CO5	Prevent and fight against harmful diseases for good health through positive mindset.

Assessment Details (both CIE and SEE) :

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50) in the semester-end examination(SEE), and a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation(CIE) :

Two Unit Tests each of 30 Marks (duration 01 hour)

- First test after the completion of 30-40 % of the syllabus
- Second test after completion of 80-90% of the syllabus

One Improvement test before the closing of the academic term may be conducted if necessary. However best two tests out of three shall be taken into consideration.

Two assignments each of 20 Marks

The teacher has to plan the assignments and get them completed by the students well before the closing of the term so that marks entry in the examination portal shall be done in time. Formative (Successive) Assessments include Assignments/Quizzes/Seminars/ Course projects/Field surveys/ Case studies/ Hands-on practice (experiments)/Group Discussions/ others. The Teachers shall choose the types of assignments depending on the requirement of the course and plan to attain the Cos and POs. (to have a less stressed CIE, the portion of the syllabus should not be common /repeated for any of the methods of the CIE. Each method of CIE should have a different syllabus portion of the course). CIE methods /test question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

The sum of two tests, two assignments, will be out of 100 marks and will be scaled down to 50 marks

Semester End Examinations (SEE)

SEE paper shall be set for **50 questions, each of the 01 mark**. The pattern of the **question paper is MCQ** (multiple choice questions). The time allotted for SEE is **01 hour**. The student must secure a minimum of 35% of the maximum marks for SEE.

Suggested Learning Resources:

SEMESTER - V

MANAGEMENT AND ENTREPRENEURSHIP

Course Code	18EE51	CIE Marks	40
Number of Lecture Hours/Week (L:T:P)	3:0:0	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives:

- To introduce the field of management, task of the manager, importance of planning and types of planning, staff recruitment and selection process.
- To discuss the ways in which work is allocation, structure of organizations, modes of communication and importance of managerial control in business.
- To explain need of coordination between the manager and staff, the social responsibility of business and leadership.
- To explain the role and importance of the entrepreneur in economic development and the concepts of entrepreneurship.
- To explain various types of entrepreneurs and their functions, the myths of entrepreneurship and the factors required for capacity building for entrepreneurs
- To discuss the importance of Small Scale Industries and the related terms and problems involved.
- To discuss methods for generating new business ideas and business opportunities in India and the importance of business plan.
- To introduce the concepts of project management and discuss capitol building process.
- To explain project feasibility study and project appraisal and discuss project financing
- To discuss about different institutions at state and central levels supporting business enterprises. ■

Module-1

Management: Definition, Importance – Nature and Characteristics of Management, Management Functions, Roles of Manager, Levels of Management, Managerial Skills, Management & Administration, Management as a Science, Art &Profession.
Planning: Nature, Importance and Purpose Of Planning, Types of Plans, Steps in Planning, Limitations of Planning, Decision Making – Meaning, Types of Decisions- Steps in Decision Making. ■

Module-2

Organizing and Staffing: Meaning, Nature and Characteristics of Organization – Process of Organization, Principles of Organization, Departmentalization, Committees – meaning, Types of Committees, Centralization Versus Decentralization of Authority and Responsibility, Span of Control (Definition only), Nature and Importance of Staffing, Process of Selection and Recruitment.
Directing and Controlling: Meaning and Nature of Directing-Leadership Styles, Motivation Theories Communication – Meaning and Importance, Coordination- Meaning and Importance, Techniques of Coordination. Controlling – Meaning, Steps in Controlling. ■

Module-3

Social Responsibilities of Business: Meaning of Social Responsibility, Social Responsibilities of Business towards Different Groups, Social Audit, Business Ethics and Corporate Governance. **Entrepreneurship:** Definition of Entrepreneur, Importance of Entrepreneurship, concepts of Entrepreneurship, Characteristics of successful Entrepreneur, Classification of Entrepreneurs, Intrapreneur – An Emerging Class, Comparison between Entrepreneur and Intrapreneur, Myths of Entrepreneurship, Entrepreneurial Development models, Entrepreneurial development cycle, Problems faced by Entrepreneurs and capacity building for

Module-4

Modern Small Business Enterprises: Role of Small Scale Industries, Concepts and definitions of SSI Enterprises, Government policy and development of the Small Scale sector in India, Growth and Performance of Small Scale Industries in India, Sickness in SSI sector, Problems for Small Scale Industries, Impact of Globalization on SSI, Impact of WTO/GATT on SSIs, Ancillary Industry and Tiny Industry (Definition only).
Institutional Support for Business Enterprises: Introduction, Policies & Schemes of Central–Level Institutions, State-Level Institutions.■

Module-5

Project Management: Meaning of Project, Project Objectives & Characteristics, Project Identification-Meaning & Importance; Project Life Cycle, Project Scheduling, Capital Budgeting, Generating an Investment Project Proposal, Project Report-Need and Significance of Report, Contents, Formulation, Project Analysis-Market, Technical, Financial, Economic, Ecological, Project Evaluation and Selection, Project Financing, Project Implementation Phase, Human & Administrative aspects of Project Management, Prerequisites for Successful Project Implementation.
New Control Techniques- PERT and CPM, Steps involved in developing the network, Uses and Limitations of PERT and CPM .■

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

- Explain the field of management, task of the manager, planning and steps in decision making.
- Discuss the structure of organization, importance of staffing, leadership styles, modes of communication, techniques of coordination and importance of managerial control in business.
- Explain the concepts of entrepreneurship and a businessman's social responsibilities towards different groups.
- Show an understanding of role of SSI's in the development of country and state/central level institutions/agencies supporting business enterprises.
- Discuss the concepts of project management, capital budgeting, project feasibility studies, need for project report and new control techniques.■

SOCIAL CONNECT & RESPONSIBILITIES			
Course Code	**21SCR36**	**CIE Marks**	**50**
Teaching Hours week (L:T:P:S)	1: 0: 0	SEE Marks	50
Total Hours of Pedagogy	15	Total Marks	100
Credits	01	Exam Hours	03
Department	Management Studies / Engineering Department		
Offered for	3rd Semester		
Prerequisite	Nil		

Objectives: The Course will

- Enable the student to do a deep drive into societal challenges being addressed by NGO(s), social enterprises & The government and build solutions to alleviate these complex social problems through immersion, design & technology.
- Provide a formal platform for students to communicate and connect with their surroundings.
- Enable to create of a responsible connection with society.

Learning Outcomes: The students are expected to have the ability to :

1. Understand social responsibility
2. Practice sustainability and creativity
3. Showcase planning and organizational skills

Contents:
The course is mainly activity-based that will offer a set of activities for the student that enables them to connect with fellow human beings, nature, society, and the world at large. The course will engage studentsinr interactive sessions, open mic, reading groups, storytelling sessions, and semester-long activities conducted by faculty mentors. In the following a set of activities planned for the course have been listed :

Module-I

Plantation and adoption of a tree: Plantation of a tree that will be adopted for four years by a group of B.Tech. students. They will also make an excerpt either as a documentary or a photoblog describing the plant's origin, its usage in daily life, and its appearance in folklore and literature.

Constitution of India and Professional Ethics (CIP)

Course Code	**21CIP37/47**	**CIE Marks**	**50**
Teaching Hours/Week (L:T:P: S)	**L:0,T:2,P:0 = 02 Hours**	**SEE Marks**	**50**
Total Hours of Pedagogy	**02 Hours/Week**	**Total Marks**	**100**
Credits	**01**	**Exam Hours**	**01 Hours**

Course objectives: This course will enable the students

1. To know about the basic structure of Indian Constitution.
2. To know the Fundamental Rights (FR's), DPSP's and Fundamental Duties (FD's) of our constitution.
3. To know about our Union Government, political structure & codes, procedures.
4. To know the State Executive & Elections system of India.
5. To learn the Amendments and Emergency Provisions, other important provisions given by the constitution.

Teaching-Learning Process

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective: Teachers shall adopt suitable pedagogy for effective teaching - learning process. The pedagogy shall involve the combination of different methodologies which suit modern technological tools.

(i) Direct instructional method (Low/Old Technology), (ii) Flipped classrooms (High/advanced Technological tools), (iii) Blended learning (Combination of both), (iv) Enquiry and evaluation based learning, (v) Personalized learning, (vi) Problems based learning through discussion.

Apart from conventional lecture methods, various types of innovative teaching techniques through videos, animation films may be adapted so that the delivered lesson can progress the students In theoretical applied and practical skills.

Module - 1

Introduction to Indian Constitution: The Necessity of the Constitution, The Societies before and after the Constitution adoption. Introduction to the Indian constitution, The Making of the Constitution, The Role of the Constituent Assembly. The Preamble of Indian Constitution & Key concepts of the Preamble. Salient features of India Constitution.

Module - 2

FR's, FD's and DPSP's: Fundamental Rights and its Restriction and limitations in different Complex Situations. Directive Principles of State Policy (DPSP) and its present relevance in our society with examples. Fundamental Duties and its Scope and significance in Nation building.

Module - 3

Union Executive : Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet, Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Supreme Court of India, Judicial Reviews and Judicial Activism.

Module - 4

State Executive & Elections, Amendments and Emergency Provisions: State Executive, Election Commission, Elections & Electoral Process. Amendment to Constitution (How and Why) and Important Constitutional Amendments till today. Emergency Provisions.

Module-5

Professional Ethics: Ethics & Values. Types of Ethics. Scope & Aims of Professional & Engineering Ethics. Positive and Negative Faces of Engineering Ethics. Clash of Ethics, Conflicts of Interest. The impediments to Responsibility. Trust & Reliability in Engineering, IPRs (Intellectual Property Rights), Risks, Safety and liability in Engineering.

Course outcome (Course Skill Set) :

At the end of the course the student will be able to :

CO1	Analyse the basic structure of Indian Constitution.
CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
CO3	know about our Union Government, political structure & codes, procedures.
CO4	Understand our State Executive & Elections system of India.
CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

Principles of Management and Organisational Behaviour			
Course Code	**22MBA11**	**CIE Marks**	**50**
Teaching Hours/Week (L:P:SDA)	**4:0:0**	**SEE Marks**	**50**
Total Hours of Pedagogy	**50**	**Total Marks**	**100**
Credits	**04**	**Exam Hours**	**03**

Course Objectives: This course will enable the students

- To understand theories and models of Management and OB.
- To classify and differentiate between various methods of problem solving.
- To compile an adept framework for solving the problems at the workplace.
- To acquaint the students with industry relevant skill sets.

Module-1 (8 Hours)

Introduction: Meaning, Objectives, Differences between Administration and Management, Levels of Management, Kinds of Managers, Managerial roles, History of Management, Recent trends in Management.

Module-2 (9 Hours)

Planning: Importance, Process, Benefits of Planning, Types of Plans, Planning tools and techniques.
Organising: Meaning, Types of Organisation structures, Traditional structures, Directions in organisation structures.
Leading: Meaning, Nature, Traits and Behaviour, Contingency approaches to Leadership, Transformational leadership.
Controlling: Meaning, Importance, Steps in the control process, Types of Control.

Module-3 (9 Hours)

Organisational Behaviour: Introduction, Meaning, History of Organisational Behaviour, Organisational effectiveness, Organisational learning process, Stakeholders, Contemporary challenges for Organisations.

Module-4 (9 Hours)

Behavioural Dynamics: MARS Model of individual behaviour and performance, Types of Individual behaviour, Personality in Organisation, Values in the work place, Types of values. **Perception,** Meaning, Model of Perceptual process. Emotions in work place, Types of emotions, Circumplex Model of Emotion, Attitudes and Behaviour, Work-related stress and its management. **Motivation,** Meaning, Maslow's Hierarchy of Needs, Four Drive Theory of Motivation.

Module-5 (9 Hours)

Teams: Advantages of Teams, Model of Team Effectiveness, Stages of Team Development. Power , Meaning, Sources, and Contingencies of Power, Consequences of Power.

Module-6 (7 Hours)

MARKETING MANAGEMENT			
Course Code	**22MBA15**	**CIE Marks**	**50**
Teaching Hours/Week (L:P:SDA)	**4:0:0**	**SEE Marks**	**50**
Total Hours of Pedagogy	**50**	**Total Marks**	**100**
Credits	**04**	**Exam Hours**	**03**

Course Learning objectives:

- To make students understand the fundamental concepts of marketing and environment in which marketing system operates.
- To gain knowledge on consumer buying behaviour and influencing factors
- To describe major bases for segment marketing, target marketing, and market positioning.
- To develop a Conceptual framework, covering basic elements of the marketing mix.
- To understand fundamental premise underlying market driven strategies and hands on practical approach.

Module-1 (7 Hours)

Introduction to Marketing: Importance of marketing, Definitions of market and marketing, Types of Needs, Elements of Marketing Concept, Functions of Marketing, evolution of marketing, Marketing V/s Selling, Customer Value and Satisfaction, 4P's of Marketing, Marketing Environment, Techniques used in environment analysis, Characteristics (Micro and Macro), Marketing to the 21st century customer.

Module-2 (9 Hours)

Analysing Consumer Behaviour: Meaning and Characteristics, Importance of consumer behaviour, Factors influencing Consumer Behaviour, Consumer characteristics influencing buying behaviour personal factors and cultural factors. Consumer Buying Decision Process, Buying Roles, Buying Motives. The black box model of consumer behaviour. Psychological factors consumer.

Module-3 (9 Hours)

Product management and Pricing: Importance and primary objective of product management, product levels, product hierarchy, Classification of products, product mix, product mix strategies, Managing Product Life Cycle. New Product Development, packing as a marketing tool, Role of labeling in packing. Concept of Branding, Brand Equity, branding strategies, selecting logo, brand extension- effects. Introducing to pricing, Significance of pricing, factor influencing pricing (Internal factor and External factor), objectives, Pricing Strategies-Value based, Cost based, Market based, Competitor based, Pricing Procedure.

Module-4 (9 Hours)

Distribution and Promotion: Roles and purpose of Marketing Channels, Factors Affecting Channel Choice, Channel Design, Channel Management Decision, Channel Conflict, Designing a physical Distribution System. Promotions- Marketing communications- Integrated Marketing Communications (IMC)-communication objectives, steps in developing effective communication. Advertising: Advertising Objectives, Advertising Budget, Advertising Copy, AIDA model, Traditional Vs Modern Media- Online and Mobile Advertising, social media for Advertising. Push-pull strategies of promotion.

Module-5 (9 Hours)

Market segmentation, Targeting and Brand Positioning: Concept of Market Segmentation, Benefits, Requisites of Effective Segmentation, Bases for Segmenting Consumer Markets, Market Segmentation Strategies. Types of Segmentation. Targeting - Bases for identifying target Customer target Marketing strategies, Positioning - Meaning, Tasks involved in Positioning. Monitoring brands performance and positioning. Product Differentiation Strategies.

Module-6 (7 Hours)

Emerging Trends in Marketing: Marketing Planning. Concepts of B2B marketing, Service Marketing, Digital and social media Marketing, Green Marketing, Event Marketing, Marketing Audit, Sponsorship, Cause Related Marketing, Marketing for Non-Profit Organizations, Relationship marketing, Marketing Strategies for Leaders, Challengers, Followers and Startups. Social Responsibility of marketing, Neuro Marketing, Sensory Marketing, societal marketing concept, premiumization.

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing marks for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements (passed) and earned the credits allotted to each course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

There shall be a maximum of 50 CIE Marks. A candidate shall obtain not less than 50% of the maximum marks prescribed for the CIE.

CIE Marks shall be based on:

a) Tests (for 25Marks) and

b) Assignments, presentations, Quiz, Simulation, Experimentation, Mini project, oral examination, field work and class participation etc., (for 25 Marks) conducted in the respective course. Course instructors are given autonomy in choosing a few of the above based on the subject relevance and should maintain necessary supporting documents for same.

Semester End Examination:

The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.

- The question paper will have 8 full questions carrying equal marks.
- Each full question is for 20 marks with 3 sub questions.
- Each full question will have sub question covering all the topics.
- The students will have to answer five full questions; selecting four full questions from question number one to seven in the pattern of 3, 7 & 10 Marks and question number eight is compulsory.

BUSINESS COMMUNICATION			
Course Code	**22MBA16**	**CIE Marks**	**50**
Teaching Hours/Week (L:P:SDA)	**4:0:0**	**SEE Marks**	**50**
Total Hours of Pedagogy	**50**	**Total Marks**	**100**
Credits	**04**	**Exam Hours**	**03**

Course Learning objectives:

- To enable the students to become aware of their communication skills and sensitize them to their potential to become successful managers.
- To enable learners with the mechanics of writing and also help them to draft business letters in English precisely and effectively.
- To introduce the students to some of the practices in managerial communication those are in vogue.
- To prepare students to develop the art of business communication with emphasis on analysing business situations.
- To train Students towards drafting business proposals.

Module-1 (7 Hours)

Introduction: Meaning & Definition, Role, Classification, Purpose of communication, Communication Process, Characteristics of successful communication, Importance of communication in management, Communication structure in organization, Communication in conflict resolution, Communication in crisis, Communication and negotiation, Communication in a cross-cultural setting, Barriers to communication.

Module-2 (9 Hours)

Oral Communication: Meaning, Principles of successful oral communication, Barriers to oral communication, Conversation control, Reflection and Empathy: two sides of effective oral communication, Modes of Oral Communication, Effectiveness of oral communication.
Listening as a Communication Skill: Approaches to listening, how to be a better listener, Process of listening, Nonverbal communication: Meaning, classification.

Module-3 (9 Hours)

Written Communication: Purpose of writing, Clarity in writing, Principles of effective writing, Approaching the writing process systematically: The 3X3 writing process for business communication Pre writing, Writing, Revising, Audience analysis, Writing Positive, Neutral, Persuasive and Bad-news Messages.
Types of Written Communication In Business: Business Letters: Introduction To Business Letters, Types of Business Letters, Writing Routine And Persuasive Letters, Positive And Negative Messages Writing, Employee Reviews, Recommendation Letters, Thank You Letters.

Module-4 (9 Hours)

Business Reports: Purpose, Kinds and Objectives of reports , Organization & Preparing reports, short and long reports Writing Proposals: Structure & preparation , Writing memos, Media Management:
The press release, Press conference, Media interviews.
Group Communication: Meetings, Planning meetings, objectives , participants , timing , venue of meetings.
Meeting Documentation: Notice, Agenda and Resolution & Minutes.

Module-5 (9 Hours)

Case method of learning: Understanding the case method of learning , different types of cases , overcoming the difficulties of the case method , reading a case properly , case analysis approaches , analyzing the case , dos and don'ts for case preparation.
Employment Communication: Introduction, Writing CVs, Group discussion, Interview skills.

PERSONAL GROWTH AND INTERPERSONAL EFFECTIVENESS

Course Code	20MBAHR402	CIE Marks	40
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	60
Credits	03	Exam Hours	03

Course Objectives

1. The student will be able to describe and Identify the application of various PG and IE framework
2. The student will be able to describe and explain in her/his own words, the relevance and importance of various PG and IE to be adopted in the Organisation
3. The student will be able to apply and improve the workplace effectiveness through various PG and IE
4. The student will be able to classify and categorise different PG and IE practices and to be followed in the Organisation
5. The student will be able to create and reconstruct Leadership required to manage the Human Resources in the Organisation
6. The student will be able to appraise and judge the practical applicability of various PG and IE practices to be followed in the Organisation

Module-1 Dynamics of Personal Growth **4 hours**

Dynamics of Personal Growth Meaning, nature and scope of personal growth. Self-awareness and self-esteem, life roles, social roles and organisational roles, role clarity and role boundaries. Ego states- Id, ego and super ego and defense mechanism. Developing a self-improvement plan.

Module -2 Interpersonal Trust **4 hours**

Openness, confidentiality, blind spot and unknown part of personality. Self-disclosure, seeking feedback, self-reflection and practicing new behaviors. Discovering facets of interpersonal trust through Johari Window.

Module -3 Understanding Human Personality and Neuro Functioning **7 hours**

Personality theories, Carl Jung's theory of personality types and Myers Briggs Type Indicator test (MBTI), Trait theories- Guilford Peogut, PF 16 and Type A and B, Emotional intelligence. **Basic functions of mind:** Creativity and innovation. Blocks to creativity. Creativity processes and tools- convergent and divergent thinking. Six thinking Hats, Neuro Linguistic Programming.

Module -4 Attitudes, Beliefs, Values and their impact on Behaviour **7 hours**

Personal change meaning, nature and requisites. Social adjustments and habit formation. Locus of control. Habits of personal effectiveness. Seven habits of highly effective people.

Module -5 **9 hours**

Interpersonal relations and personal growth: Interpersonal needs for openness, inclusion and control. Discovering the interpersonal orientation through FIRO-B. Conflict resolution and negotiation, time management and honouring the commitments

Module – 6 Transactional Analysis **9 hours**

Ego states, types of transactions and time structuring. Life position, scripts and games; T-group sensitivity training, encounter groups, appreciative enquiry and group relations conference (students may go through three days personal growth lab for experiential learning)

Course Outcomes:

1. Have in-depth understanding the various personality traits which promotes personal growth.
2. Analyze the concepts of human personality, behaviour and functioning of mind
3. Learn and apply the psychometrics tests in understanding the personality traits.
4. Develop the greater insight of self, and others through various theories and prepare the developmental plan for interpersonal effectiveness.

Practical Components:

- Students are expected to conduct an in-depth study about various personality traits & TA and submit a detailed report.
- Students must undergo psychometric test like MBTI, FIRO-B, Big Five etc, conduct SWOT analysis and prepare a personal growth plan based on the results
- Ask the individual students to seek multisource feedback about their interpersonal effectiveness from peers, teachers, and parents; understand and reflect the feedback and prepare a development plan for interpersonal

CHILDREN'S EDUCATION SOCIETY(Regd.)
THE OXFORD COLLEGE OF ENGINEERING
(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.
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Master of Computer Applications

Choice Based Credit System(CBCS)
Semester: III
CIE Marks:40
Course Code:20MCA354
SEE Marks:60
Contact Periods (L:T:P):3-0-0
Exam Hours:03

Software Project Management

Course Out Comes:
CO1:Apply thepracticesandmethodsforsuccessfulsoftwareprojectmanagement
CO2:Identifytechniquesforrequirements,policiesanddecisionmakingforeffectiveresource management
CO3:Illustratetheevaluationtechniquesforestimatingcost,benefits,scheduleandrisk
CO4:Deviseaframeworkforsoftwareprojectmanagementplanforactivities,risk,monitoring andcontrol
CO5:Designaframeworktomanagepeople

Module-1 INTRODUCTIONTOSOFTWAREPROJECTMANAGEMENT
Introduction,WhyisSoftwareProjectManagementimportant?Whatisa Project?, ContractManagement,ActivitiesCoveredbySoftwareProjectManagement, Plans, MethodsandMethodologies,Someways of categorizingsoftwareprojects, Stakeholders,SettingObjectives,BusinessCase,ProjectSuccessandFailure,Whatis Management? Management Control, Traditional versus Modern Project ManagementPractices

Module-2 PROJECTEVALUATION&FINANCE Evaluationof IndividualProjects,CostBenefitEvaluationTechniques,RiskEvaluation, ProgrammeManagement,Managingallocationof ResourceswithinProgrammes, FinancialAccounting– Anoverview– Accountingconcepts,Principles&Standards, Ledgerposting,Trialbalance,ProfitandLossaccountBalancesheet

Module-3 ACTIVITYPLANNING ObjectivesofActivityPlanning,Whento Plan,ProjectSchedules,Sequencingand SchedulingActivities,NetworkPlanningModels,ForwardPass– BackwardPass, Identifyingcriticalpath,ActivityFloat,ShorteningProjectDuration,Activityon Arrow Networks RiskManagement,NatureofRisk,CategoriesofRisk,Aframeworkfordealingwith Risk, Risk Identification, Risk analysis and prioritization, risk planning and risk monitoring

Module-4 MONITORINGANDCONTROL
CreatingtheFramework,CollectingtheData,Review,ProjectTerminationReview, VisualizingProgress,CostMonitoring,EarnedValueAnalysis,PrioritizingMonitoring, GettingProjectBackToTarget,ChangeControl,SoftwareConfiguration Management

Module-5 MANAGINGPEOPLEANDWORKINGINTEAMS
Introduction,UnderstandingBehavior,OrganizationalBehavior:A Background, SelectingtheRightPersonfortheJob,InstructionintheBestMethods,Motivation, TheOldham–

HackmanJobCharacteristicsModel,Stress–HealthandSafety WorkingInTeams,BecomingaTeam,DecisionMaking,Leadership. Textbooks 1.BobHughes, MikeCotterell, RajibMall, "Software Project Management", Fifth Edition,TataMcGrawHill,2011. 2."AccountingforManagement"JawaharLal,5 thEdition,WheelerPublications,Delhi. References 1.JackMarchewka," Information Technology-Project Management", Wiley Student Version,4 thEdition,2013. 2.JamesPLewis,"ProjectPlanning,Scheduling&Control",McGrawHill,5 thEdition, 2011. 3.Pankaj Jalote," Software Project Management in Practise", Pearson Education, 2002

Choice Based Credit System
Semester: II
CIE Marks:50
Course code:22MCA254
SEE Marks:50
Contact Hours (L:T:P): 3:0:0
Exam Hours:3

User Interface Design

Course Outcomes: At the end of the course, students will be able to
CO1:Analyse the new technologies that provide interactive devices and interfaces.
CO2: Apply the guidelines to develop the UID and evaluate for the given problem.
CO3: Apply the development methodologies with an analysis of the social impact and legal issuesUnderstand Direct Manipulation and Virtual Environment
CO4: Discuss the command, natural languages and issues in design for maintaining QoS
CO5: Demonstrate techniques for information search and visualization for the given problem.

Module-1 Introduction Usability of Interactive Systems: Introduction, Usability Goals and Measures, Usability Motivation, Universal Usability, Goals for our profession. Guideline, principles, and theories: Introduction, Guidelines, principles, Theories.

Module-2 Development Processes Managing Design Processes: Introduction, Organizational Design to support Usability, The Four Pillars of Design, Development methodologies: Ethnographic Observation, Participatory Design, Scenario Development, Social Impact statement for Early Design Review, Legal Issues. Evaluating Interface Design Introduction, Expert Reviews, Usability Testing and Laboratories, Survey Instruments, Acceptance tests, Evaluation during Active Use, Controlled Psychologically Oriented Experiments

Module-3 Direct Manipulation and Virtual Environments: Introduction, Examples of Direct Manipulation, Discussion of direct manipulation, 3D Interfaces, Tele-operation, Virtual and Augmented Reality Menu Selection, Form Filling and Dialog Boxes: Introduction, Task-Related Menu Organization, Single Menus, Combination of Multiple Menus, Content Organization, Fast Movement Through Menus, Data Entry With Menus, Form Filling, Dialog Boxes and Alternatives, Audio Menus and Menus for Small Displays

Module-4 Command and Natural Languages Introduction, Command-organization functionality strategies and structure, Naming and Abbreviations, Natural Language in computing. Interaction Devices: Introduction, Keyboards and Keypads, Pointing Devices, Speech and Auditory interfaces, Displays-Small and Large Design Issues Quality of Service: Introduction, Models of Response-Time Impacts, Expectations and Attitudes, User Productivity, Variability in Response time, Frustrating Experiences Balancing Function and Fashion: Introduction, Error Messages, Nonanthropomorphic Design, Display design, web page design, Window Design, Color

Module-5 User Documentation and Online Help : Introduction, Online versus paper documentation, Reading from paper versus Displays, Shaping the content of the Manuals, Accessing the Documentation, Online Tutorials and animated demonstrations, Online Communities for User Assistance, The Development Process. Information Search and Visualization Introduction, Search in Textual Documents and Database Querying, Multimedia document searches, Advanced filtering and Search Interfaces, Information Visualization: Introduction, Data type by task taxonomy, Challenges for information visualization.

Textbooks 1.BenShneiderman, Plaisant, Cohen, Jacobs: Designing the User Interface, 5th Edition, Pearson ,Education, 2010. References 1 Alan Dix, Janet Finalay, Gregory D AbiwdmRusselBealel: Human-Computer Interaction, III Edition, Pearson , Education, 2008.
2 Eberts: User Interface Design, Prentice Hall, 1994 3 Wilber O Galitz: The Essential Guide to User Interface Design- An Introduction to GUI Design, Principles and Techniques, Wiley-Dreamtech India Pvt Ltd, 2011
Optimization Technique

Environment and Sustainability

Department of Biotechnology

BIO-BUSINESS AND ENTREPRENEURSHIP			
Course Code	18BT51	CIE Marks	40
Teaching Hours/Week (L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives:

- To learn about the project management,
- To explore entrepreneurship
- To understand IPR and its implications

Module-1

BIO ENTERPREUNERSHIP:

Introduction to bio-business, from the Indian context, SWOT analysis of bio-business. Ownership, Development of Entrepreneurship; Stages in entrepreneurial process; Role of entrepreneurs in Economic Development; Entrepreneurship in India; Entrepreneurship - its barriers. Small scale industries: Definition; Characteristics; Need and rationale; Objectives; Scope; Market Feasibility Study; Technical Feasibility Study; Financial Feasibility Study & Social Feasibility Study. Global bio business and industry future trends.

Module-2

ENTREPRENEURSHIP OPPORTUNITY IN AGRI BIOTECHNOLOGY:

Business opportunity, Essential requirement, marketing, strategies, schemes, challenges and scope-with case study on Plant cell and tissue culture technique, polyhouse culture. Herbal bulk drug production, Nutraceuticals, value added herbal products. Bioethanol production using Agri waste, Algal source. Integration of system biology for agricultural applications. Biosensor development in Agri management

Module-3

ENTREPRENEURSHIP OPPORTUNITY IN INDUSTRIAL BIOTECHNOLOGY: Business opportunity, Essential requirement, marketing strategies, schemes, challenges and scope-with case study- Pollution monitoring and Bioremediation for Industrial pollutants, Pesticides, Herbicides etc. Integrated compost production- microbe enriched compost.Bio pesticide/insecticide production. Fermented products-probiotic and prebiotics. Stem cell production, stem cell bank, contract research. Production of monoclonal/polyclonal antibodies, Single cell protein and secondary metabolite production.Contact research in microbial genomics.

Module-4

PROJECT MANAGEMENT, INTELLECTUAL PROPERTY, TECHNOLOGY MANAGEMENT AND STARTUP SCHEMES:

Building Biotech business challenges in Indian context-biotech partners (BICEPS, BIRAC, DBT, Incubation centers. Etc.,), operational biotech parks in India. Indian Company act for Bio business-schemes and subsidies. Meaning of Project; Project Identification; Project Selection; Project Report; Need and Significance of Report; Contents; Formulation; Guidelines by Planning Commission for Project report; Network Analysis; Errors of Project Report; Project Appraisal. Identification of business opportunities: Market Feasibility Study; Technical Feasibility Study; Financial Feasibility Study & Social Feasibility Study. Patent expiry and Entrepreneurship opportunity, Principles of Technology leasing, licensing and transfer, Startup schemes in Indian government, Business incubation support schemes, Successful start-ups-case study.

Module-5

REGULATORY AFFAIRS, BIOETHICS & BIO-SAFETY:

Regulatory affairs in Bio business-regulatory bodies and their regulations (ex.FDA, EU, DSIR, AYUSH,

Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
SEMESTER – V

ENVIRONMENTAL STUDIES

Course Code	18CIV59	CIE Marks	40
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60
Credits	01	Exam Hours	02

Module - 1

Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake.
Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.

Module - 2

Advances in Energy Systems (Merits, Demerits, Global Status and Applications): Hydrogen, Solar, OTEC, Tidal and Wind.
Natural Resource Management (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud Seeding, and Carbon Trading.

Module - 3

Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies): Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.
Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes; Industrial and Municipal Sludge.

Module - 4

Global Environmental Concerns(Concept, policies and case-studies):Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.

Module - 5

Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. & Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001; Environmental Stewardship- NGOs.
Field work: Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.

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

- CO1: Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,
- CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
- CO3: Demonstrate ecology knowledge of a complex relationship between biotic and a biotic components.
- CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.

Question paper pattern:

- The Question paper will have 100 objective questions.
- Each question will be for 01 marks
- Student will have to answer all the questions in an OMR Sheet.
- The Duration of Exam will be 2 hours.

		Name of the		Edition and

MICROBIOLOGY			
Course Code	21BT34	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	2:2:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03

Course objectives:

- To understand the details of classification, structural features and functional aspects of prokaryotic and eukaryotic microorganisms.
- To learn different techniques of microscopy and be able to describe microbial techniques for growth, cultivation and characterization of microorganisms.
- To explain microbial metabolism, growth and control of microorganisms.
- To describe and relate the occurrence of microbes caused diseases.
- To analyse various industrial applications of microbiology.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

- ✓ Explanation via real life problem, situation modelling, and deliberation of solutions, hands-on sessions, reflective and questioning /inquiry based teaching.
- ✓ Instructions with interactions in classroom lectures (physical/hybrid).
- ✓ Use of ICT tools, including YouTube videos, related MOOCs, AR/VR/MR tools.
- ✓ Flipped classroom sessions (~10% of the classes).
- ✓ Industrial visits, Guests talks and competitions for learning beyond the syllabus.
- ✓ Students' participation through audio-video based content creation for the syllabus (as assignments).
- ✓ Use of gamification tools (in both physical/hybrid classes) for creative learning outcomes.
- ✓ Students' seminars (in solo or group) /oral presentations.

Module-1 (8 hours)

OVERVIEW OF MICROBIOLOGY AND MICROORGANISMS:

Scope and History of Microbiology (Major milestones). Prokaryotes, Archaea and Eukaryotes. Microbial diversity and Taxonomy. Classification, characteristics and reproduction of Bacteria, Viruses, Fungi, Protozoa, Algae. General features of true bacteria (Rickettsia, Mycoplasma and Chlamydia), Prions, Spirochetes, Actinomycetes. Case studies.

Module-2 (8 hours)

METHODS AND TECHNIQUES IN MICROBIOLOGY:

Basic principles of Microscopy, Bright-Field, Dark-Field, Phase-Contrast, Acoustic, Fluorescence, Electron Microscopy: SEM, TEM. Micrometry. Media: types and preparation. Pure culture Techniques (streak-plate, spread plate, pour plate). Staining techniques (Simple and differential). Case studies.

Module-3 (8 hours)

MICROBIAL GROWTH, METABOLISM AND CONTROL:

Microbial growth: Phases, Factors affecting growth, growth measurement and enumeration. Microbial Genetics (Brief introduction to Transformation, Transduction and Conjugation). Metabolism; Primary and Secondary metabolites with examples, metabolic pathways important in microorganisms- Respiration and Fermentation (EMP, HMP, ED, Phospho ketolase, Mixed acid, TCA).Quorum sensing. Control of growth (Sterilization and disinfection techniques).Case studies.

Module-4 (8 hours)

MICROBIOLOGY AND DISEASES:

Common diseases caused by microbes: viruses (Polio, H1N1, SARS, Covid-19, HIV, Hepatis), bacteria (TB, Cholera, Typhoid, Pneumonia, Plague, Diphtheria, *Ecoli* infections), Protoznans (Malaria, Leishmaniasis and Amebiasis).Common types of fungal infections (ringworm, yeast infection). Case studies.

Module-5 (8 hours)

ENVIRONMENT AND INDUSTRIAL MICROBIOLOGY:

Aerobiology, Air sampling techniques. Microbiology of potable water and wastewater treatment. Microbiology of soil, Beneficial Microbes, Biofertilizers, VAM, Rhizobium. Microbes in Bioremediation. Case studies. Industrially important microbes: Enzymes, SCP production, Penicillin, vitamin B12 and Glutamate production.

Course outcomes (Course Skill Set)

At the end of the course the student will be able to:

- Correlate the structure, function and metabolic pathways of microorganisms.
- Apply the principles of microbial culture for identifying the appropriate technique used in culture and characterization of microorganisms under aseptic conditions.
- Analyze the role of microorganisms in environmental protection, industrial applications and infectious diseases.

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50)in the semester-end examination(SEE), and a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together

Continuous Internal Evaluation:

Three Unit Tests each of **20 Marks (duration 01 hour)**

- First test at the end of 5th week of the semester
- Second test at the end of the 10th week of the semester
- Third test at the end of the 15th week of the semester

Two assignments each of **10 Marks**

- First assignment at the end of 4th week of the semester
- Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for **20 Marks (duration 01 hours)**

- At the end of the 13th week of the semester

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be **scaled down to 50 marks**

(to have less stressed CIE, the portion of the syllabus should not be common /repeated for any of the methods of the CIE. Each method of CIE should have a different syllabus portion of the course).

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester End Examination:

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject **(duration 03 hours)**

- The question paper will have ten questions. Each question is set for 20 marks. Marks scored shall be proportionally scaled down to 50 marks

Professional Elective 1			
ENERGY AND ENVIRONMENT			
Course Code	18ME751	CIE Marks	40
Teaching Hours / Week (L:T:P)	3:0:0	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives:

- To understand the fundamentals of energy sources, energy use, energy efficiency, and resulting environmental implications of various energy supplies.
- To introduce various aspects of environmental pollution and its control.
- To understand the causes and remedies related to social issues like global warming, ozone layer depletion, climate change etc.
- To introduce various acts related to prevention and control of pollution of water and air, forest protection act, wild life protection act etc.

Module-1

Basic Introduction to Energy: Energy and power, forms of energy, primary energy sources, energy flows, world energy production and consumption, Key energy trends in India: Demand, Electricity, Access to modern energy, Energy production and trade, Factors affecting India's energy development: Economy and demographics Policy and institutional framework, Energy prices and affordability, Social and environmental aspects, Investment.

Module-2

Energy storage systems: Thermal energy storage methods, Energy saving, Thermal energy storage systems
Energy Management: Principles of Energy Management, Energy demand estimation, Energy pricing
Energy Audit: Purpose, Methodology with respect to process industries, Characteristic method employed in Certain Energy Intensive Industries

Module-3

Environment: Introduction, Multidisciplinary nature of environmental studies- Definition, scope and importance, Need for public awareness.
Ecosystem: Concept, Energy flow, Structure and function of an ecosystem. Food chains, food webs and ecological pyramids, Forest ecosystem, Grassland ecosystem, Desert ecosystem and Aquatic ecosystems, Ecological succession.

Module-4

Environmental Pollution: Definition, Cause, effects and control measures of - Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution and Nuclear hazards, Solid waste Management, Disaster management Role of an individual in prevention of pollution, Pollution case studies.

Module-5

Social Issues and the Environment: Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies. Wasteland reclamation, Consumerism and waste products, Environment Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation.

Department of Information Science & Engineering

B. E. COMMON TO ALL PROGRAMMES
Choice Based Credit System (CBCS) and Outcome Based Education (OBE)
SEMESTER – V

ENVIRONMENTAL STUDIES

Course Code	**18CIV59**	CIE Marks	40
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60
Credits	01	Exam Hours	02

Module – 1

Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake.
Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.

Module – 2

Advances in Energy Systems (Merits, Demerits, Global Status and Applications)**:** Hydrogen, Solar, OTEC,Tidal and Wind.
Natural Resource Management (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud
Seeding, and Carbon Trading.

Module – 3

Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant EnvironmentalActs, Case-studies)**:** Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.
Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes;
Industrial and Municipal Sludge.

Module – 4

Global Environmental Concerns (Concept, policies and case-studies):Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.

Module – 5

Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. &
Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001;
Environmental Stewardship- NGOs.
Field work: Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or
Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.

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

- CO1: Understand the principles of ecology and environmental issues that apply to air, land, and waterissues on a global scale,
- CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problemor question related to the environment.
- CO3: Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components.
- CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities thatmanagers face when dealing with complex issues.

Question paper pattern:

- The Question paper will have 100 objective questions.
- Each question will be for 01 marks
- Student will have to answer all the questions in an OMR Sheet.
- The Duration of Exam will be 2 hours.

Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition andYear
Textbook/s				

Department of Mechanical Engineering

Updated on 16.04.2020/28092020

B. E. MECHANICAL ENGINEEING Choice Based Credit System (CBCS) and Outcome Based Education (OBE) SEMESTER – V			
ENVIRONMENTAL STUDIES			
Course Code	18CIV59	CIE Marks	40
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60
Credits	01	Exam Hours	02
Module - 1			
Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake. 02 Hrs **Biodiversity:** Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.			
Module - 2			
Advances in Energy Systems (Merits, Demerits, Global Status and Applications): Hydrogen, Solar, OTEC, Tidal and Wind. 02 Hrs **Natural Resource Management** (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud Seeding, and Carbon Trading.			
Module - 3			
Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies): Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.02 Hrs **Waste Management & Public Health Aspects:** Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes; Industrial and Municipal Sludge.			
Module - 4			
Global Environmental Concerns (Concept, policies and case-studies): Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.			
Module - 5			
Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. & Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001; Environmental Stewardship- NGOs. 03 Hrs **Field work:** Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.			
Course Outcomes: At the end of the course, students will be able to: • CO1: Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale, • CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment. • CO3: Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components. • CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.			

NON CONVENTIONAL ENERGY SOURCES			
Course Code	**18ME651**	CIE Marks	40
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives:

- To introduce the concepts of solar energy, its radiation, collection, storage and application.
- To introduce the concepts and applications of Wind energy, Biomass energy, Geothermal energy and Ocean energy as alternative energy sources.
- To explore society's present needs and future energy demands.
- To examine energy sources and systems, including fossil fuels and nuclear energy, and then focus on alternate, renewable energy sources such as solar, biomass (conversions), wind power, geothermal, etc.
- To get exposed to energy conservation methods.

Module-1

Introduction: Energy source, India's production and reserves of commercial energy sources, need for non-conventional energy sources, energy alternatives, solar, thermal, photovoltaic. Water power, wind biomass, ocean temperature difference, tidal and waves, geothermal, tar sands and oil shale, nuclear (Brief descriptions); advantages and disadvantages, comparison (Qualitative and Quantitative).

Solar Radiation: Extra-Terrestrial radiation, spectral distribution of extra terrestrial radiation, solar constant, solar radiation at the earth's surface, beam, diffuse and global radiation, solar radiation data.

Measurement of Solar Radiation: Pyrometer, shading ring pyrheliometer, sunshine recorder, schematic diagrams and principle of working.

Module-2

Solar Radiation Geometry: Flux on a plane surface, latitude, declination angle, surface azimuth angle, hour angle, zenith angle, solar altitude angle expression for the angle between the incident beam and the normal to a plane surface (No derivation) local apparent time. Apparent motion of sum, day length, numerical examples.

Radiation Flux on a Tilted Surface: Beam, diffuse and reflected radiation, expression for flux on a tilted surface (no derivations) numerical examples.

Solar Thermal Conversion: Collection and storage, thermal collection devices, liquid flat plate collectors, solar air heaters concentrating collectors (cylindrical, parabolic, paraboloid) (Quantitative analysis); sensible heat storage, latent heat storage, application of solar energy water heating. Space heating and cooling, active and passive systems, power generation, refrigeration, Distillation (Qualitative analysis) solar pond, principle of

Module-3

Performance Analysis of Liquid Flat Plate Collectors: General description, collector geometry, selective surface (qualitative discussion) basic energy-balance equation, stagnation temperature, transmissivity of the cover system, transmissivity – absorptivity product, numerical examples. The overall loss coefficient, correlation for the top loss coefficient, bottom and side loss coefficient, problems (all correlations to be provided). Temperature distribution between the collector tubes, collector heat removal factor, collector efficiency factor and collector flow factor, mean plate temperature, instantaneous efficiency (all expressions to be provided). Effect of various parameters on the collector performance; collector orientation, selective surface, fluid inlet temperature, number covers, dust.

Photovoltaic Conversion: Description, principle of working and characteristics, application.

Module-4

Wind Energy : Properties of wind, availability of wind energy in India, wind velocity and power from wind; major problems associated with wind power, wind machines; Types of wind machines and their characteristics, horizontal and vertical axis wind mills, elementary design principles; coefficient of performance of a wind mill rotor, aerodynamic considerations of wind mill design, numerical examples.

Tidal Power: Tides and waves as energy suppliers and their mechanics; fundamental characteristics of tidal power, harnessing tidal energy, limitations.
Ocean Thermal Energy Conversion: Principle of working, Rankine cycle, OTEC power stations in the world, problems associated with OTEC.

Module-5

Geothermal Energy Conversion: Principle of working, types of geothermal station with schematic diagram, geothermal plants in the world, problems associated with geothermal conversion, scope of geothermal energy.
Energy from Bio Mass: Photosynthesis, photosynthetic oxygen production, energy plantation, bio gas production from organic wastes by anaerobic fermentation, description of bio-gas plants, transportation of bio-gas, problems involved with bio-gas production, application of bio-gas, application of bio-gas in engines, advantages.
Hydrogen Energy: Properties of Hydrogen with respected to its utilization as a renewable form of energy, sources of hydrogen, production of hydrogen, electrolysis of water, thermal decomposition of water, thermo chemical production bio-chemical production.

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

CO1: Describe the environmental aspects of non-conventional energy resources. In Comparison with various conventional energy systems, their prospects and limitations.
CO2: Know the need of renewable energy resources, historical and latest developments.
CO3: Describe the use of solar energy and the various components used in the energy production with respect to applications like-heating, cooling, desalination, power generation, drying, cooking etc.
CO4: Appreciate the need of Wind Energy and the various components used in energy generation and know the classifications.
CO5: Understand the concept of Biomass energy resources and their classification, types of biogas Plants-applications
CO6: Compare Solar, Wind and bio energy systems, their prospects, Advantages and limitations.
CO7: Acquire the knowledge of fuel cells, wave power, tidal power and geothermal principles and applications.

Question paper pattern:

- The question paper will have ten full questions carrying equal marks.
- Each full question will be for 20 marks.
- There will be two full questions (with a maximum of four sub- questions) from each module.
- Each full question will have sub- question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module.

CHILDREN'S EDUCATION SOCIETY(Regd.)
THE OXFORD COLLEGE OF ENGINEERING
(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.
Accreditated NAAC 'A' Grade, Approved by A.I.C.T.E. New Delhi. Recognised by UGC Under Section 2(f))
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Department of Computer Science & Engineering

B. E. COMMON TO ALL PROGRAMMES
Choice Based Credit System (CBCS) and Outcome Based Education (OBE)
SEMESTER – V

ENVIRONMENTAL STUDIES

Course Code	**18CIV59**	CIE Marks	40
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60
Credits	01	Exam Hours	02

Module – 1

Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake.
Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.

Module – 2

Advances in Energy Systems (Merits, Demerits, Global Status and Applications)**:** Hydrogen, Solar, OTEC,Tidal and Wind.
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Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant EnvironmentalActs, Case-studies)**:** Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.
Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes;
Industrial and Municipal Sludge.

Module – 4

Global Environmental Concerns (Concept, policies and case-studies):Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.

Module – 5

Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. &
Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001;
Environmental Stewardship- NGOs.
Field work: Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or
Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.

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

- CO1: Understand the principles of ecology and environmental issues that apply to air, land, and waterissues on a global scale,
- CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problemor question related to the environment.
- CO3: Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components.
- CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities thatmanagers face when dealing with complex issues.

Question paper pattern:

- The Question paper will have 100 objective questions.
- Each question will be for 01 marks
- Student will have to answer all the questions in an OMR Sheet.
- The Duration of Exam will be 2 hours.

Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition andYear
Textbook/s				

Department of Electrical and Communication Engineering

B. E. COMMON TO ALL PROGRAMMES
Choice Based Credit System (CBCS) and Outcome Based Education (OBE)
SEMESTER – V

ENVIRONMENTAL STUDIES

Course Code	**18CIV59**	CIE Marks	40
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60
Credits	01	Exam Hours	02

Module – 1

Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake.
Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.

Module – 2

Advances in Energy Systems (Merits, Demerits, Global Status and Applications)**:** Hydrogen, Solar, OTEC,Tidal and Wind.
Natural Resource Management (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud
Seeding, and Carbon Trading.

Module – 3

Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant EnvironmentalActs, Case-studies)**:** Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.
Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes; E-

wastes;
Industrial and Municipal Sludge.

Module – 4

Global Environmental Concerns (Concept, policies and case-studies):Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.

Module – 5

Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. &
Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001;
Environmental Stewardship- NGOs.
Field work: Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or
Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.

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

- CO1: Understand the principles of ecology and environmental issues that apply to air, land, and waterissues on a global scale,
- CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problemor question related to the environment.
- CO3: Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components.
- CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities thatmanagers face when dealing with complex issues.

Question paper pattern:

- The Question paper will have 100 objective questions.
- Each question will be for 01 marks
- Student will have to answer all the questions in an OMR Sheet.
- The Duration of Exam will be 2 hours.

Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition andYear
Textbook/s				

Department of Mechatronics

Updated on 16.04.2020/28092020

B. E. MECHANICAL ENGINEEING Choice Based Credit System (CBCS) and Outcome Based Education (OBE) SEMESTER – V			
ENVIRONMENTAL STUDIES			
Course Code	18CIV59	CIE Marks	40
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60
Credits	01	Exam Hours	02
Module - 1			
Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake. 02 Hrs **Biodiversity:** Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.			
Module - 2			
Advances in Energy Systems (Merits, Demerits, Global Status and Applications): Hydrogen, Solar, OTEC, Tidal and Wind. 02 Hrs **Natural Resource Management** (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud Seeding, and Carbon Trading.			
Module - 3			
Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies): Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.02 Hrs **Waste Management & Public Health Aspects:** Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes; Industrial and Municipal Sludge.			
Module - 4			
Global Environmental Concerns (Concept, policies and case-studies): Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.			
Module - 5			
Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. & Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001; Environmental Stewardship- NGOs. 03 Hrs **Field work:** Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.			
Course Outcomes: At the end of the course, students will be able to: • CO1: Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale, • CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment. • CO3: Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components. • CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.			

Department of Civil Engineering

B.E IN CIVIL ENGINEERING(CV-2018-19)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
SEMESTER – V

ENVIRONMENTAL STUDIES

Course Code	18CIV59	CIE Marks	40
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60
Credits	01	Exam Hours	02

Module - 1

Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake.
Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.

Module - 2

Advances in Energy Systems (Merits, Demerits, Global Status and Applications): Hydrogen, Solar, OTEC, Tidal and Wind.
Natural Resource Management (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud Seeding, and Carbon Trading.

Module - 3

Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies): Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.
Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes; Industrial and Municipal Sludge.

Module - 4

Global Environmental Concerns (Concept, policies and case-studies): Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.

Module - 5

Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. & Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001; Environmental Stewardship- NGOs.
Field work: Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.

Course outcomes: At the end of the course, students will be able to:

- CO1: Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,
- CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
- CO3: Demonstrate ecology knowledge of a complex relationship between biotic and a biotic components.
- CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.

Question paper pattern:

- The Question paper will have 100 objective questions.
- Each question will be for 01 marks
- Student will have to answer all the questions in an OMR Sheet.
- The Duration of Exam will be 2 hours.

Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbook/s				
1	Environmental Studies	Benny Joseph	Tata Mc Graw – Hill.	2nd Edition, 2012

B. E. CIVIL ENGINEERING
Choice Based Credit System (CBCS) and Outcome Based Education (OBE)
SEMESTER - VI

ENVIRONMENTAL ENGINEERING LABORATORY

Course Code	**18CVL67**	CIE Marks	40
Teaching Hours/Week(L:T:P)	(0:2:2)	SEE Marks	60
Credits	02	Exam Hours	03

Course Learning Objectives: This course will enable students,

1. To learn different methods of water & waste water quality
2. To conduct experiments to determine the concentrations of water and waste water
3. To determine the degree and type of treatment
4. To understand the environmental significance and application in environmental engineering practice

1. Preparation chemical solutions required for analysis and sampling methodologies
2. Determination of pH, Conductivity, TDS and Turbidity.
3. Determination of Acidity and Alkalinity
4. Determination of Calcium, Magnesium and Total Hardness.
5. Determination of Dissolved Oxygen
6. Determination of BOD.
7. Determination of Chlorides
8. Determination of percentage of % of available chlorine in bleaching powder sample, Determination of Residual Chlorine and chlorine demand.
9. Determination of Solids in Sewage: i) Total Solids, ii) Suspended Solids, iii) Dissolved Solids, iv) Volatile Solids, Fixed Solids v) Settleable Solids.
10. Determination of optimum coagulant dosage using Jar test apparatus.
11. Determination Nitrates and Iron by spectrophotometer
12. Determination of COD(Demonstration)
13. Air Quality Monitoring (Demonstration)
14. Determination of Sound by Sound level meter at different locations (Demonstration)

Course Outcomes: After studying this course, students will be able to:

1. Acquire capability to conduct experiments and estimate the concentration of different parameters.
2. Compare the result with standards and discuss based on the purpose of analysis.
3. Determine type of treatment, degree of treatment for water and waste water.
4. Identify the parameter to be analyzed for the student project work in environmental stream.

Question paper pattern:

Air Pollution and Control syllabus

18CV732

Module-1

Introduction:

Definition, Sources, classification and characterization of air pollutants. Effects of air pollution on health, vegetation & materials. Types of inversion, photochemical smog.

Module-2

Meteorology:

Temperature lapse rate & stability, wind velocity & turbulence, plume behavior, measurement of meteorological variables, wind rose diagrams, Plume Rise, estimation of effective stack height and mixing depths.

Module-3

Sampling:

Sampling of particulate and gaseous pollutants (Stack, Ambient & indoor air pollution), Monitoring and analysis of air pollutants (PM2.5, PM10, SOX, NOX, CO, NH3). Development of air quality models-Gaussian dispersion model-Including Numerical problems.

Module-4

Control Techniques:

Particulate matter and gaseous pollutants- settling chambers, cyclone separators, scrubbers, filters & ESP - Including Numerical problems. Site selection for industrial plant location.

Module-5

Air pollution due to automobiles

Air pollution due to automobiles, standards and control methods. Noise pollution- causes, effects and control, noise standards. Environmental issues, global episodes. Environmental laws and acts.

Course outcomes:

After studying this course, students will be able to:

1. Identify the major sources of air pollution and understand their effects on health and environment.

2. Evaluate the dispersion of air pollutants in the atmosphere and to develop air quality models.

3. Ascertain and evaluate sampling techniques for atmospheric and stack pollutants.

4. Choose and design control techniques for particulate and gaseous emissions.

Ground Water Hydraulics

18CV734

Module-1

Introduction:

Importance, vertical distribution of subsurface water, occurrence in different types of rocks and soils, definitions-aquifers, aquifuge, aquitard, aquiclude, confined and Unconfined aquifers.

Module-2

Fundamentals of Ground Water Flow:

Aquifer parameters, specific yield and specific retention, porosity, storage coefficient, derivation of the expression, Darcy's law, hydraulic conductivity, coefficient of permeability and intrinsic permeability, transmissibility, permeability in isotropic, anisotropic layered soils.

Module-3

Well Hydraulics:

Steady Flow, Radial flow in confined and unconfined aquifers, pumping test Unsteady Flow, General equation, derivation; thesis method, Cooper and Jacob method, Chow's method, solution of unsteady flow equations, leakyaquifers (only introduction), interference of well, image well theory.

Module-4

Ground Water Exploration:

Seismic method, electrical resistively method, Geo-physical techniques, electrical logging, radioactive logging, induction logging, sonic and fluid logging.

Module-5

Ground Water Development:

Types of wells, methods of construction, tube well design, dug wells, pumps for lifting water, working principles, power requirement, Conjunctive use, necessity, techniques and economics.

Ground Water Recharge:

Artificial recharge, Rainwater harvesting for ground water recharge.

Course outcomes:

After studying this course, students will be able to:

1. Find the characteristics of aquifers.

2. Estimate the quantity of ground water by various methods.

3. Locate the zones of ground water resources.

4. Select particular type of well and augment the ground water storage.

ENVIRONMENTAL STUDIES			
Course Code	18CIV59	CIE Marks	40
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60
Credits	01	Exam Hours	02

Module - 1

Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake.
Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.

Module - 2

Advances in Energy Systems (Merits, Demerits, Global Status and Applications): Hydrogen, Solar, OTEC, Tidal and Wind.
Natural Resource Management (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud Seeding, and Carbon Trading.

Module - 3

Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies): Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.
Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes; Industrial and Municipal Sludge.

Module - 4

Global Environmental Concerns (Concept, policies and case-studies):Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.

Module - 5

Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. & Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001; Environmental Stewardship- NGOs.
Field work: Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.

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

- CO1: Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,
- CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
- CO3: Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components.
- CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.

INTRODUCTION TO ELECTRIC VEHICLES			
Course Code	18AU754	CIE Marks	40
TeachingHours/Week (L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives: To

- Explain the need, past, present & future of EVs, recent development
- Describe basic terms of electrical and EV parameters
- Explain major components of battery operated EVs
- Describe the energy storage technologies and fuel cells

Module-1

Engineering philosophy of EV development

Introduction, need of electric drive, Past, present and future of EVs, Past 30 years development, Present major issues, Historical development, Recent development, Development trends, Engineering philosophy of EVs, EV concept, Key EV technologies

Module-2

Basic terms of Electrical and EV parameters

Electrical terms – current, AC & DC, voltage, power, conductors, insulators, resisters, relays, capacitors, solenoids, AC & DC motors & generators. EV parameters, Weight and size parameters, Force parameters, Energy parameters, Performance parameters.

Module-3

The Basics of a Battery-Operated Electric Vehicle (BOEV)

Advantages and disadvantages, major components of BOEV, comparison with IC engine vehicles, flywheel energy storage, major parts, controller, inverter/converter, Regenerative Braking, Driving an EV – Starting, Driving and Braking. Basic Diagnosis &Precautions, Self-Diagnostics.

Module-4

Energy Storage Technology:

Battery basics, different types of batteries (lead-acid battery, Lithium / Alkaline, Lithium ion, Nickel metal hydride), High discharge capacitors, battery ratings, battery parameters, Battery discharging & charging characteristics, Battery chargers, Battery indicating methods and devices

Module-5

Fuel Cells

Fuel cell characteristics, fuel cell types - alkaline fuel cell, proton exchange membrane, direct methanol fuel cell, phosphoric acid fuel cell, molten carbonate fuel cell, solid oxide fuel cell, hydrogen storage systems, reformers, fuel cell EV.

Course Outcomes:

At the end of the course the student will be able to:

- Explain need, past, present & future of EVs, recent development
- Describe basic terms of electrical and EV parameters
- Explain major components of battery operated EVs
- Describe the energy storage technologies and fuel cells

Department of Business Administration

Research Methodology and IPR

Course Code	**22MBA23**	CIE Marks	**50**
Teaching Hours/Week (L:P:SDA)	**4:0:0**	SEE Marks	**50**
Total Hours of Pedagogy	**50**	Total Marks	**100**
Credits	**04**	Exam Hours	**03**

Course Learning objectives:

- To understand the basic components of research design
- To Gain an insight into the applications of research methods
- To equip students with various research analytical tools used in business research
- To provide the insights of IPR and IPR system in India

Module-1 (7 Hours)

Introduction to Business Research: Meaning, types, process of research- management problem, defining the research problem, formulating the research Hypothesis, developing the research proposals, research design formulation, sampling design, planning and collecting the data for research, data analysis and interpretation. Research Application in business decisions, Ethical issues in business research. Features of a good research study.

Module-2 (9 Hours)

Business Research Design: Meaning, types and significance of research design, errors affecting research design.
Exploratory Research: Meaning, purpose, methods, Literature search, experience survey, focus groups and comprehensive case methods.
Conclusive Research Design: Descriptive Research, Meaning, Types, Cross sectional studies and longitudinal studies.
Experimental Research Design: Meaning and classification of experimental designs, formal and informal, Pre experimental design, True experimental design, Quasi-experimental design, Statistical experimental design.

Module-3 (7 Hours)

Sampling: Concepts, Types of Sampling, **Probability Sampling:** simple random sampling, systematic sampling, stratified random sampling, cluster sampling,
Non Probability Sampling: convenience sampling- judgmental sampling, snowball sampling, quota sampling, Errors in sampling.

Module-4 (9 Hours)

Data Collection: Meaning, types, **Data collection methods:** Observations, survey and interview techniques, **Questionnaire design:** Meaning, process of designing questionnaire. Qualitative Techniques of data collection Secondary data Sources: advantages and disadvantages.
Measurement and Scaling Techniques: Basic measurement scales-Nominal scale, Ordinal scale, Interval scale, Ratio scale. Attitude measurement scale - Likert Scale, Semantic Differential Scale, Thurston scale, **Multi-Dimensional Scaling:** Non comparative scaling techniques

Module-5 (9 Hours)

Data Analysis and Report Writing: Editing, Coding, Classification, Tabulation, Validation. Analysis and Interpretation, Report writing and presentation of results, Importance of report writing, types of research reports, Report structure, Guidelines for effective documentation.

Module-6 (9 Hours)

Intellectual Property Rights: Meaning and Concepts of Intellectual Property, Nature and Characteristics of Intellectual Property, Origin and Development of Intellectual Property, Kinds of Intellectual Property, Intellectual Property System in India, IPRs- Invention and Creativity- Intellectual Property-Importance and Protection of Intellectual Property Rights (IPRs)- **A brief summary of**: Patents, Copyrights, Trademarks, TRIPS and TRIMS , Industrial Designs- Integrated Circuits-Geographical Indications-Establishment of WIPO-Application and Procedures.

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing marks for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements (passed) and earned the credits allotted to each course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

There shall be a maximum of 50 CIE Marks. A candidate shall obtain not less than 50% of the maximum marks prescribed for the CIE.

CIE Marks shall be based on:

a) Tests (for 25 Marks) and

b) Assignments, presentations, Quiz, Simulation, Experimentation, Mini project, oral examination, field work and class participation etc., (for 25 Marks) conducted in the respective course. Course instructors are given autonomy in choosing a few of the above based on the subject relevance and should maintain necessary supporting documents for same.

Semester End Examination:

The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.

- The question paper will have 8 full questions carrying equal marks.
- Each full question is for 20 marks with 3 sub questions.
- Each full question will have sub question covering all the topics.
- The students will have to answer five full questions; selecting four full question from question number one to seven in the pattern of 3, 7 & 10 Marks and question number eight is compulsory.
- 100 Percent theory.