

## Supporting Documents

1.3.1

### **Department Wise List of Courses Which Address the Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum**



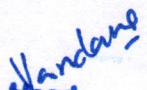
1.3.1

## Department of Chemical Sciences



**Key Indicator – 1.3 Curriculum Enrichment (30)**

Metric No.		Weightage
1.3.1	<p><b><i>1.3.1 Institution integrates cross cutting issues relevant to Gender, Environment and, Human Values and Professional ethics into Curriculum</i></b></p> <p>Description in 500 words was required as per the NAAC Criterion.</p> <p>Department of Chemical science has introduced Environment science in undergraduate course. Another course is Environmental Chemistry in Postgraduate course.</p> <p>The course in Department of Chemical Science aim at developing social responsibility of the students towards their environment. Basic objective of this course is to sensitize, motivate and self-responsible to the environmental issues at local and global level, their problems and mitigating measures so that they can be aware scientifically and can sensitize others.</p> <p>The curriculum of this course is designed in such a way in which students have to study Environment science separately which sensitize them and motivate in creating awareness about global environment issues. Another course on Environment chemistry makes students to understand chemistry behind various Environmental processes. Also, to understand the chemistry of Environment problems of pollution like how they occur and solved using different scientific techniques.</p> <p>Topics like human values, women empowerment, drugs, equality and child labour etc. form the themes are taken and taught them to cover such sensitive issues keeping in mind the professional ethics.</p> <p>Communication and Computer skills have also been incorporated in all Programs and due credits are given for these courses.</p> <p>Research students in department are encouraged to work on Environmental problem of the society.</p> <p><b>Supporting document</b> : Attached Annexure 1.3.1</p> <p>URL: 1. <a href="https://ptu.ac.in/wp-content/uploads/2021/09/M.Sc.-Chemistry-2018-Scheme-and-Syllabus.pdf">https://ptu.ac.in/wp-content/uploads/2021/09/M.Sc.-Chemistry-2018-Scheme-and-Syllabus.pdf</a></p>	

  
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**Department of Applied Sciences**  
**IKG Punjab Technical University**  
**Kapurthala-144603 Punjab (India)**

	<p>2. <a href="https://ptu.ac.in/wp-content/uploads/2021/09/B.Sc-Hons-Chemistry-2019-Scheme-and-Syllabus.pdf">https://ptu.ac.in/wp-content/uploads/2021/09/B.Sc-Hons-Chemistry-2019-Scheme-and-Syllabus.pdf</a></p> <p>Any additional information: <b>NiL</b></p>	
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**Kapurthala-144603 Punjab (India)**

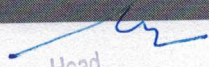
**I.K. Gujral Punjab Technical University, Kapurthala**  
**Department of Chemical Sciences**

**List of courses relevant to Gender, Environment, and Human Values and Professional ethics into Curriculum**

Programme	Course	Course code	Sem.	Relevance	Link
B.Sc. H Chemistry	Environmental Science	BHCL20 5-19	III	Environment	<a href="https://ptu.ac.in/wp-content/uploads/2021/09/B.Sc-Hons-Chemistry-2019-Scheme-and-Syllabus.pdf">https://ptu.ac.in/wp-content/uploads/2021/09/B.Sc-Hons-Chemistry-2019-Scheme-and-Syllabus.pdf</a>
B.Sc. H Chemistry	Industrial Chemicals and Environment	BHCL30 5-19	V	Environment	<a href="https://ptu.ac.in/wp-content/uploads/2021/09/B.Sc-Hons-Chemistry-2019-Scheme-and-Syllabus.pdf">https://ptu.ac.in/wp-content/uploads/2021/09/B.Sc-Hons-Chemistry-2019-Scheme-and-Syllabus.pdf</a>
M.Sc. Chemistry	Environmental Chemistry	CHL405- 18	I	Environment	<a href="https://ptu.ac.in/wp-content/uploads/2021/09/M.Sc-Chemistry-2018-Scheme-and-Syllabus.pdf">https://ptu.ac.in/wp-content/uploads/2021/09/M.Sc-Chemistry-2018-Scheme-and-Syllabus.pdf</a>

  
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
## Department of Physical Sciences



**Criterion I – Curricular Aspects (150)**


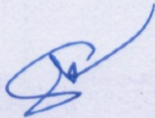
**Key Indicator – 1.3 Curriculum Enrichment (30)**

Metric No.		Weightage																												
1.3.1	<p><b><i>Institution integrates crosscutting issues relevant to professional ethics, gender, human values, environment and sustainability into the curriculum</i></b></p> <p><b><i>Description in maximum 500 words</i></b></p> <p>The subjects relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability are integral part of curriculum. Specifically, at Department of physical Sciences, we offer courses related to environment and sustainability in our M.Sc. Physics and PhD program. The details of these course are as following:</p> <table border="1"> <thead> <tr> <th>Sr. No</th> <th>Subject Name</th> <th>Programme</th> <th>Credits</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Radiation Physics</td> <td>M.Sc. Physics</td> <td>04</td> </tr> <tr> <td>2</td> <td>Science of Renewable Source of Energy</td> <td>M.Sc. Physics</td> <td>04</td> </tr> <tr> <td>3</td> <td>Structures, Spectra and Properties of Biomolecules</td> <td>M.Sc. Physics</td> <td>04</td> </tr> <tr> <td>4</td> <td>Environment Physics</td> <td>M.Sc. Physics</td> <td>04</td> </tr> <tr> <td>5</td> <td>Physics of Nanomaterials</td> <td>M.Sc. Physics</td> <td>04</td> </tr> <tr> <td>6</td> <td>Research and Publication Ethics</td> <td>Ph.D.</td> <td>02</td> </tr> </tbody> </table> <p>All the courses offered to MSc Physics are electives subjects whereas the course on Research and publication ethics for PhD programme is compulsory. Evaluation of courses is done as per the university norms.</p> <p>Any additional information: NIL</p>	Sr. No	Subject Name	Programme	Credits	1	Radiation Physics	M.Sc. Physics	04	2	Science of Renewable Source of Energy	M.Sc. Physics	04	3	Structures, Spectra and Properties of Biomolecules	M.Sc. Physics	04	4	Environment Physics	M.Sc. Physics	04	5	Physics of Nanomaterials	M.Sc. Physics	04	6	Research and Publication Ethics	Ph.D.	02	5
Sr. No	Subject Name	Programme	Credits																											
1	Radiation Physics	M.Sc. Physics	04																											
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	<p>•Upload the list and description of the courses which address the Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum</p> <p>Link</p> <p><a href="https://ptu.ac.in/wp-content/uploads/2020/11/M.Sc_-Physics-2019.pdf">https://ptu.ac.in/wp-content/uploads/2020/11/M.Sc_-Physics-2019.pdf</a></p>	
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I.K.G Punjab Technical University, Kapurthala  
Department of Physical Sciences (Main Campus)

Ref:- IKGPTU/PS/203

Date:- 14/10/2021

Subject: 1.3.1 List of courses relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.

Department offers following course related to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

S. No.	Program	Course Name	Remarks
1.	Ph. D.	Research and Publications Ethics (RPE)	IKGPTU/REG/NF/2172 dated: 27/07/21

Apart from this department is also planning to offer a course on Environment science to the undergraduate students. Board of studies of department is working on this aspect.

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1.3.1

## Department of Civil Engineering



### 1.3.1 Institution integrates cross cutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum


The University integrates Cross-cutting issues of the society like Moral Values, Human Values, Professional Ethics, Ethical Values Gender Equality, Environmental Awareness, which are inseparable part of our curriculum. Moral Values, Human Values & Professional Ethics Twenty one days Induction programme related to values and ethics is an integral part of the curriculum of the first year. The compulsory course “Mentoring and professional development” is there for 2nd year. The course “Training” is professional skill enhancement course of third year. Students will be able to understand the importance of ethics and values in their personal, social & professional life after studying these courses. University’s Civil Engineering Department provides free environment for inculcating values and developing ethical competence among the students based on their subjects related to Concrete design, Structure Engineering, Concrete Technology, Earthquake Engineering and Construction Engineering and management leading to innovation in it. Environment sustainability, Environment Engg, Geo Environment, Sustainable Construction Methods, Environment Impact Assessment (EIA) and LCA plays vital role before and after life in the construction of buildings, dams, expressways & infrastructure projects for the 21st Century. Importance of interdisciplinary approach in Engineering to correlate the human population growth and its trend to the environmental degradation and develop the awareness about his/her role towards environmental protection and prevention It is in response to a long- felt and urgent need to integrate value education with decision making skills in their personal, social and professional life. University celebrates days of National and International importance as Republic day, Women’s day, Independence Day, Teacher’s day, Human Right Day, International Yoga Day etc. These celebrations nurture the moral, ethical and social values in the students.

**Environment & Ecology** The course “Environment Science” related to ecosystem, its balance & sustainability is an integral part of the curriculum of the second year for all branches of Engineering and Sciences courses at UG level. University prescribed this course for creating awareness and developing importance of environment among students. Awareness about Environment is necessary for the protection of the environment and survival of human life. The basic aim of this subject is to make the students aware about the importance of ecosystem to human life. The University has an integrated rain water harvesting System along with Sewage Treatment Plant. The waste water is reused for gardening in the university campus. University celebrates the day of National importance as Earth day, Environment day. The college organizes workshop/ seminars on Environment & Ecology to make students aware about efficient use of natural resources.

**Moral Values, Human Values & Professional Ethics:** Twenty one days Induction programme related to values and ethics is an integral part of the curriculum of the all first year students. Organisational Behaviour, Professional ethics and law has been introduced the students of Civil Engineering necessary for getting, keeping and being successful in a profession. To Develop Project Management aspect and Entrepreneurship Skills they are being offered two full subjects of 3 and 2 credits respectively.

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The compulsory course "Universal Human values & Professional Ethics" for 2nd year & open elective course "Understanding the Human Being Comprehensively-Human Aspirations and Its Fulfilment" for the final year are important part of Curriculum. The common course "Industrial Sociology" and Industrial Psychology are basic part of curriculum of third year. Students will be able to understand the importance of ethics and values in their personal, social & professional life after studying these courses. These subjects provide free environment for inculcating values and developing ethical competence among the students. It is in response to a long- felt and urgent need to integrate value education with decision making skills in their personal, social and professional life. College celebrates days of National and International importance as Republic day, Women's day, Independence Day, Teacher's day, Human Right Day, International Yoga Day etc. These celebrations nurture the moral, ethical and social values in the students.

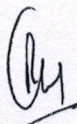
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(MAIN CAMPUS), KAPURTHALA

DEPARTMENT OF CIVIL ENGINEERING

Sub: 1.3.1 Subjects Related To Professional ethics, Environment and Sustainability

Subject Code	Subject Name
EVS-101-18	Environment Science
BTCE-504-18	Environmental Engineering
BTCE-508-18	Environmental Engineering Lab
BTMC-101-18	Constitution of India
BTMC-701-18	Management- I Organisation, Behavior
HSMC-255	Humanities and Social Sciences including Management courses HSMC255
PECE-702A	Environmental law & Policy
HSMC-255	Professional practises Law and Ethics

  
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**Study Scheme and Syllabus of B. Tech Civil Engineering, Batch 2018 onwards**  
**Board of Studies – Civil and Environmental Science, IKGPTU Main & Constituent Campuses**

S. No.	Category	Code	Course Title	Hours per week			Credits
				L	T	P	
6	Mandatory Courses (Non Credit)	EVS-101-18	<b>Environmental Science</b>	2	0	0	0

**\* 40 Hours are kept for various activities under the head of activities. There will be a final theory examination for the students of 50 marks but these marks will not be added to their final result as assessment will be satisfactory or non-satisfactory**

We as human being are not an entity separate from the environment around us rather we are a constituent seamlessly integrated and co-exist with the environment around us. We are not an entity so separate from the environment that we can think of mastering and controlling it rather we must understand that each and every action of ours reflects on the environment and vice versa. Ancient wisdom drawn from Vedas about environment and its sustenance reflects these ethos. There is a direct application of this wisdom even in modern times. Idea of an activity based course on environment protection is to sensitize the students

**Course Outcomes:**

1. Students will enable to understand environmental problems at local and national level through literature and general awareness.
2. The students will gain practical knowledge by visiting wildlife areas, environmental institutes and various personalities who have done practical work on various environmental Issues.
3. The students will apply interdisciplinary approach to understand key environmental issues and critically analyze them to explore the possibilities to mitigate these problems.
4. Reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world.

**Detailed Contents**

Unit- I : Natural Resources :Renewable and non-renewable resources

Natural resources and associated problems. Forest resources : Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people. Water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies. Food resources : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. Energy resources : Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies. Land resources : Land as a resource, land degradation, man induced landslides, soil erosion and desertification., Role of an individual in conservation of natural resources, Equitable use of resoureces for sustainable lifestyles.

Unit-II : Ecosystems : Concept of an ecosystem, Structure and function of an ecosystem, Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of following ecosystems: a. Forest ecosystem b. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit-III : Biodiversity and its conservation : Introduction – Definition : genetic, species and ecosystem diversity, Biodiversity at global, National and local levels, Inida as a mega-diversity nation, Hot-spots of biodiversity, Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts, Endangered and endemic species of India

Unit-IV : Social Issues and the Environment : From Unsustainable to Sustainable development, Resettlement and rahabilitation of people; its problems and concerns., Environmental ethics : Issues and possible solutions, Climate change, global warming, acid rain, ozone layer depletion, Nuclear accidents and holocaust, Case Studies, Public awareness.

**\*ACTIVITIES**

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**Study Scheme and Syllabus of B. Tech Civil Engineering, Batch 2018 onwards**  
**Board of Studies – Civil and Environmental Science, IKGPTU Main & Constituent Campuses**

S. No.	Category	Code	Course Title	Hours per week			Credits
				L	T	P	
5	Professional Core courses	BTCE-405-18	<b>Disaster Preparedness &amp; Planning</b>	3	0	0	3

External Marks: 60, Internal Marks: 40, Total Marks: 100

**Course Outcomes**

After completing this course the student must demonstrate the knowledge and ability to:

1. Identify various types of disasters, their causes, effects & mitigation measures.
2. Demonstrate the understanding of various phases of disaster management cycle and create vulnerability and risk maps.
3. Understand the use of emergency management system to tackle the problems.
4. Discuss the role of media, various agencies and organisations for effective disaster management.
5. Design early warning system and understand the utilization of advanced technologies in disaster management.
6. Compare different models for disaster management and plan & design of infrastructure for effective disaster management.

**Content**

**Unit I: Introduction to Disaster Management:** Define and describe disaster, hazard, vulnerability, risk-severity, frequency and details, capacity, impact, prevention, mitigation.

**Disasters:** Identify and describe the types of natural and manmade disasters, hazard and vulnerability profile of India, mountain and coastal areas, Factors affecting vulnerability such as impact of development projects and environment modifications (including dams, land-use changes, urbanization etc.), Disaster impacts (environmental, physical, social, ecological, economic etc.); health, psycho-social issues; demographic aspects (gender, age, special needs), Lessons and experiences from important disasters with specific reference to civil engineering.

**Unit II :Disaster Mitigation and Preparedness:** Disaster Management Cycle-its phases; prevention, mitigation, preparedness, relief and recovery; structural and non structural measures; Preparedness for natural disasters in urban areas.

**Risk Assessment:** Assessment of capacity, vulnerability and risk, vulnerability and risk mapping, stages in disaster recovery and associated problems; Use of Remote Sensing Systems (RSS) and GIS in disaster Management, early warning systems.

**Unit III : Post disaster response:** Emergency medical and public health services; Environmental post disaster response (water, sanitation, food safety, waste management, disease control, security, communications); reconstruction and rehabilitation; Roles and responsibilities of government, community, local institutions, role of agencies like NDMA, SDMA and other International agencies, organizational structure, role of insurance sector, DM act and NDMA guidelines.

**Unit IV: Integration of public policy:** Planning and design of infrastructure for disaster management, Community based approach in disaster management, methods for effective dissemination of information, ecological and sustainable development models for disaster management.

**Books and References**

1. www.http//ndma.gov.in
2. http://www.ndmindia.nic.in
3. Natural Hazards in the Urban Habitat by Iyengar, C.B.R.I., Tata McGraw Hill, Publisher
4. Natural Disaster management, Jon Ingleton (Ed), Published by Tudor Rose, Leicester 92
5. Singh B.K., 2008, Handbook of disaster management: Techniques & Guidelines, Rajat Publications.
6. Disaster Management, R.B. Singh (Ed), Rawat Publications
7. ESCAP: Asian and the Pacific Report on Natural Hazards and Natural Disaster Reduction

  
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**Study Scheme and Syllabus of B. Tech Civil Engineering, Batch 2018 onwards**  
**Board of Studies – Civil and Environmental Science, IKGPTU Main & Constituent Campuses**

Fifth Semester							
S. No.	Category	Code	Course Title	Hours per week			Credits
				L	T	P	
2	Professional Core courses	BTCE-502-18	<b>Elements of Earthquake Engineering</b>	3	0	0	3

External Marks: 60, Internal Marks: 40, Total Marks: 100

**Course Outcome**

The course will enable the students to:

- i) Understand the phenomenon of occurrence and history of earthquakes and classify their kinds and effects.
- ii) Appreciate the role of earthquake forces in structural design of building.
- iii) Evaluate and analyze Degree of Freedom, Spring action, Damping, Equations of motions, Lateral Force analysis, Floor Diaphragm action, Moment resisting frames and Shear walls.
- iv) Apply various codal provisions related to seismic design of buildings.
- v) Acquire new basic knowledge in earthquake engineering

**Content**

Unit 1: Introduction to Earthquakes, Causes of Earthquakes, Basic Terminology, Magnitude, Intensity, Peak ground motion parameters.

Unit 2: Past Earthquakes and Lessons learnt, Various Types of Damages to Buildings.

Unit 3: Introduction to theory of Vibrations, Sources of Vibrations, Types of Vibrations, Degree of Freedom, Spring action and damping, Equation of motion of S.D.O.F. systems, Undamped, Damped system subjected to transient forces, general solution, green's function.

Unit 4: Lateral Force analysis, Floor Diaphragm action, moment resisting frames, shear walls.

Unit 5: Concepts of seismic design, Lateral Strength, Stiffness, ductility and structural configuration.

Unit 6: Introduction to provisions of IS 1893-2002 Part-I for buildings. Estimation of lateral forces due to earthquake.

Unit 7: Introduction to provisions of IS 4326.

Unit 8: Introduction to provision of IS 13920.

**Text /Reference Books :**

1. Earthquake Resistant Design of Structures, Pankaj Agrawal, Manish Shrikhande, PHI Learning
2. Dynamics of Structures: Theory and Applications to Earthquake Engineering, AK Chopra, Prentice Hall
3. Dynamics of Structures, R. W. Clough and Joseph Penzien, McGraw-Hill Education
4. Structural Dynamics by Mario & Paz, Springer.
5. Earthquake Resistant Design by David J. Dowrick, Wiley India Pvt Ltd
6. Elements of Earthquake Engg by Jai Krishna, A.R. Chandrasekaran, Brijesh Chandra, South Asian Publishers.
7. IS 1893-2016 Indian Standard Criteria for Earthquake Resistant Design of Structures.
8. IS 4326-1993 Indian Standard for Earthquake Resistant Design and Construction of Buildings.
9. IS 13920:2016-Ductile design and detailing of Reinforced Concrete Structures subjected to Seismic Forces- code of practice

  
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**Study Scheme and Syllabus of B. Tech Civil Engineering, Batch 2018 onwards**  
**Board of Studies – Civil and Environmental Science, IKGPTU Main & Constituent Campuses**

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Fifth Semester							
S. No.	Category	Code	Course Title	Hours per week			Credits
				L	T	P	
4	Professional Core courses	BTCE-504-18	<b>Environmental Engineering</b>	4	0	4	Professional Core

External Marks: 60, Internal Marks: 40, Total Marks: 100

**Course Outcome**

The course will enable the students to:

- i. Understand the impact of humans on environment and environment on humans
- ii. Be able to identify and value the effect of the pollutants on the environment: atmosphere, water and soil.
- iii. Be able to plan strategies to control, reduce and monitor pollution.
- iv. Be able to select the most appropriate technique for the treatment of water, wastewater, solid waste and contaminated air.
- v. Be conversant with basic environmental legislation.

**Contents**

**Unit 1: Water:** -Sources of Water and quality issues, water quality requirement for different beneficial uses, Water quality standards, water quality indices, water safety plans, Water Supply systems, Need for planned water supply schemes, Water demand industrial and agricultural water requirements, Components of water supply system; Transmission of water, Distribution system, Various valves used in W/S systems, service reservoirs and design. *Water Treatment:* aeration, sedimentation, coagulation flocculation, filtration, disinfection, advanced treatments like adsorption, ion exchange, membrane processes

**Unit 2: Sewage-** Domestic and Storm water, Quantity of Sewage, Sewage flow variations. Conveyance of sewage- Sewers, shapes design parameters, operation and maintenance of sewers, Sewage pumping; Sewerage, Sewer appurtenances, Design of sewerage systems. Small bore systems, Storm Water- Quantification and design of Storm water; Sewage and Sullage, Pollution due to improper disposal of sewage, Wastewater treatment, aerobic and anaerobic treatment systems, suspended and attached growth systems, recycling of sewage – quality requirements for various purposes.

**Unit 3: Air** - Composition and properties of air, Quantification of air pollutants, Monitoring of air pollutants, Air pollution- Occupational hazards, Urban air pollution automobile pollution, Air quality standards, Control measures for Air pollution

**Unit 4: Noise-** Basic concept, measurement and various control methods.

**Unit 5: Solid waste management-** Municipal solid waste, Composition and various chemical and physical parameters of MSW, MSW management: Collection, transport, treatment and disposal of MSW. Special MSW: waste from commercial establishments and other urban areas, solid waste from construction activities, biomedical wastes, Effects of solid waste on environment: effects on air, soil, water surface and ground health hazards. Disposal of solid waste-segregation, reduction at source, recovery and recycle. Disposal methods- Integrated solid waste management.

**Unit 6: Building Plumbing-** Introduction to various types of home plumbing systems for water supply and waste water disposal, high rise building plumbing, Storage tanks, Building drainage for high rise buildings, various kinds of fixtures and fittings used.

**Text/Reference Books:**

1. Introduction to Environmental Engineering and Science by Gilbert Masters, PrenticeHall, New Jersey.
2. Introduction to Environmental Engineering by P. Aarne Vesilind, Susan M. Morgan, Thompson /Brooks/Cole; Second Edition 2008.
3. Peavy, H.s, Rowe, D.R, Tchobanoglous, G. *Environmental Engineering*, Mc-Graw -Hill International Editions, New York 1985.
4. MetCalf and Eddy. *Wastewater Engineering, Treatment, Disposal and Reuse*, TataMcGraw-Hill, New Delhi.
5. Manual on Water Supply and Treatment. Ministry of Urban Development, New Delhi.
6. Plumbing Engineering. Theory, Design and Practice, S.M. Patil, 1999
7. Integrated Solid Waste Management, Tchobanoglous, Theissen & Vigil. McGraw Hill Publication
8. Manual on Sewerage and Sewage Treatment Systems, Part A, B and C. Central Public Health and Environmental Engineering Organization, Ministry of Urban Development

  
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**Study Scheme and Syllabus of B. Tech Civil Engineering, Batch 2018 onwards**  
**Board of Studies – Civil and Environmental Science, IKGPTU Main & Constituent Campuses**

**Seventh/Eight Semester**

S. No.	Category	Code	Course Title	Hours per			Credits
				L	T	P	
1	Professional Core courses <sup>#</sup>	PECE-702A-18	<b>Environmental Law and Policy</b>	3 <sup>#</sup>	1	0	4

**Unit 1**  
**Basic Concepts in Environmental Law.** An introduction to the legal system; Constitution, Acts, Rules, Regulations; Indian Judiciary, Doctrine of precedents, judicial review, Writ petitions, PIL—liberalization of the rule of locus standi, Judicial activism. Introduction to environmental laws in India; Constitutional provisions, Bhopal gas tragedy; Rio conference. General principles in Environmental law: Precautionary principle; Polluter pays principle; Sustainable development; Public trust doctrine. Overview of legislations and basic concepts.

**Unit 2**  
**Forest, Wildlife and Biodiversity related laws** Evolution and Jurisprudence of Forest and Wildlife laws; Colonial forest policies; Forest policies after independence 2 Statutory frame work on Forests, Wildlife and Biodiversity: IFA, 1927; WLPA, 1972; FCA, 1980; Biological Diversity Act, 2002; Forest Rights Act, 2006. Strategies for conservation—Project Tiger, Elephant, Rhino, Module leopard.

**Unit 3**  
**Air, Water and Marine Laws** National Water Policy and some state policies Laws relating to prevention of pollution, access and management of water and institutional mechanism: Water Act, 1974; Water Cess Act, 1977, EPA, 1986. Pollution Control Boards Ground water and law Judicial remedies and procedures Marine laws of India; Coastal zone regulations. Legal framework on Air pollution: Air Act, 1981; EPA, 1986

**Unit 4**  
**Environment protection laws and large Projects** Legal framework on environment protection—Environment Protection Act as the framework legislation—strength and weaknesses; EIA; National Green tribunal The courts infrastructure projects

**Unit 5**  
**Hazardous Substances and Activities** Legal framework: EPA and rules made thereunder; PLI Act, 199 Principles of strict and absolute liability

**Reference Books:**

1. Birnie P. (2009) et al., International Law and the Environment, 3rd ed., Oxford.
2. Desai A. (2002) Environmental Jurisprudence, 2nd ed., Modern Law House, Allahabad.
3. Gadgil M. and Guha R. (1995) Ecology and Equity, Oxford, New Delhi.
4. Gadgil M. and Guha R. (1997) This Fissured Land, Oxford, New Delhi.
5. Guha R. (2000) Environmentalism: A Global History, Oxford, New Delhi.
6. Kamala S. and Singh U.K. (eds.) (2008) Towards Legal Literacy: An Introduction to Law in India, Oxford, New Delhi.

Seventh/Eight Semester					
S. No.	Category	Code	Course Title	Hours per week	Credits

62

**Study Scheme and Syllabus of B. Tech Civil Engineering, Batch 2018 onwards**  
**Board of Studies – Civil and Environmental Science, IKGPTU Main & Constituent Campuses**

Seventh/Eight Semester							
S. No.	Category	Code	Course Title	Hours per			Credits
				L	T	P	
6	Professional Core courses	HSMC -255	<b>Professional Practice, Law &amp; Ethics</b>	2	0	0	2

Basic elements of civil engineering professional practice are introduced in this course. Roles of all participants in the process-owners, developers, designers, consultants, architects, contractors, and suppliers - are described. Basic concepts in professional practice, business management, public policy, leadership, and professional licensure are introduced. The course covers professional relations, civic responsibilities, and ethical obligations for engineering practice. The course also describes contracts management, and various legal aspects related to engineering. Further, the course familiarizes students with elementary knowledge of laws that would be of utility in their profession, including several new areas of law such as IPR, ADR.

**The course is designed to address the following:**

- To make the students understand the types of roles they are expected to play in the society as practitioners of the civil engineering profession
- To develop some ideas of the legal and practical aspects of their profession

**UNIT 1. Professional Ethics** – Definition of Ethics, Professional Ethics, Business Ethics, Corporate Ethics, Engineering Ethics, Personal Ethics; Code of Ethics as defined in the website of Institution of Engineers (India); Profession, Professionalism, Professional Responsibility, Professional Ethics; Conflict of Interest, Gift Vs Bribery, Environmental breaches, Negligence, Deficiencies in state-of-the-art; Vigil Mechanism, Whistleblowing, protected disclosures.

**UNIT 2: General Principles of Contracts Management: Indian Contract Act, 1972 and amendments** covering General principles of contracting; Contract Formation & Law; Privacy of contract; Various types of contract and their features; Valid & Voidable Contracts; Prime and sub-contracts; Joint Ventures & Consortium; Complex contract terminology; Tenders, Request For Proposals, Bids & Proposals; Bid Evaluation; Contract Conditions & Specifications; Critical /“Red Flag” conditions; Contract award & Notice To Proceed; Variations & Changes in Contracts; Differing site conditions; Cost escalation; Delays, Suspensions & Terminations; Time extensions & Force Majeure; Delay Analysis; Liquidated damages & Penalties; Insurance & Taxation; Performance and Excusable Non-performance; Contract documentation; Contract Notices; Wrong practices in contracting (Bid shopping, Bid fixing, Cartels); Reverse auction; Case Studies; Build-Own-Operate & variations; Public-Private Partnerships; International Commercial Terms;

**UNIT 3 : Arbitration, Conciliation and ADR (Alternative Dispute Resolution) system:** Arbitration – meaning, scope and types – distinction between laws of 1940 and 1996; UNCITRAL model law – Arbitration and expert determination; Extent of judicial intervention; International commercial arbitration; Arbitration agreements – essential and kinds, validity, reference and interim measures by court; Arbitration tribunal – appointment, challenge, jurisdiction of arbitral tribunal, powers, grounds of challenge, procedure and court assistance; Award including Form and content, Grounds for setting aside an award, Enforcement, Appeal and Revision; Enforcement of foreign awards – New York and Geneva Convention Awards; Distinction between conciliation, negotiation, mediation and arbitration, confidentiality, resort to judicial proceedings, costs; Dispute Resolution Boards; Lok Adalats.

1.3.1

## Department of Computer Science Engineering

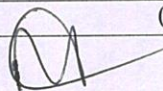


## The Department of Computer Science and Engineering

- The university has been working for the overall development of the students. Various courses, namely, Human values and Professional Ethics, Environmental Studies have been introduced as mandatory courses for all programmes of engineering to address issues as Gender Equality, Sustainability, Human Values and Ethics.
- Courses on Disaster management, Non-Conventional energy resources etc, are offered as open electives. These courses help students gain a worldview of the self, society and profession. It emphasizes on holistic understanding of ethical human conduct, trustful and mutually satisfying human behaviour.
- The university also conducts Blood Donation Camps to promote National Integrity, Human values, Communal Harmony.
- Environment and Sustainability Environmental Studies is an interdisciplinary course. The course is offered as a mandatory course for all the U.G programs. The course includes the study of natural resources with emphasis on renewable energy resources, the importance of conserving the present ecosystem, promoting biodiversity, perils of environmental pollution and raising awareness on environmental and social issues.
- A course on “Non-conventional Energy sources” is offered to explain the generation of electricity from various non-conventional sources of energy such as solar, wind, ocean and geothermal energies.
- Guest lectures on Environment and Human Ethics are organized in the departments to aware students about the Conservation of environment and develop ethical morals in them.
- International Women’s Day is celebrated every year with active student participation. Also, special talks are arranged to encourage women to explore opportunities in science and technology. The student counsellor counsels’ students on gender equality and other related issues.

The subjects relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability are integral part of university curriculum. Details of these subjects is as follows:

Sr. No	Subject Name	Semester	Teaching load per week (Hrs)
1	Mentoring and Professional Development	1 <sup>st</sup>	02
2	Mentoring and Professional Development	2 <sup>nd</sup>	02
3	Foundation Course in Humanities (Development of Societies/Philosophy)	3 <sup>rd</sup>	03
4	Universal Human Values 2	4 <sup>th</sup>	03
5	Environmental Sciences	4 <sup>th</sup>	03

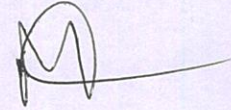
  
HOD  
Department of Computer Science & Engineering  
IKG PTU Main Campus  
Kapurthala

**1.3.1. Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum. Write description in maximum of 500 words**

The subjects relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability are integral part of university curriculum. Details of these subjects is as follows:

Sr. No	Subject Name	Semester	Teaching load per week (Hrs)
1	Mentoring and Professional Development	1 <sup>st</sup>	02
2	Mentoring and Professional Development	2 <sup>nd</sup>	02
3	Foundation Course in Humanities (Development of Societies/Philosophy)	3 <sup>rd</sup>	03
4	Universal Human Values 2	4 <sup>th</sup>	03
5	Environmental Sciences	4 <sup>th</sup>	03

All these subjects are compulsory subjects. Evaluation is done as per the university curriculum.



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KJ Somaiya Institute of Engineering & Information Technology  
Mumbai

1.3.1

## Department of Mechanical Engineering



Metric No.		Weightage																		
1.3.1  QM	<p><b><i>Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum</i></b></p> <ul style="list-style-type: none"> <li>• The university has been working for the overall development of the students. Various courses, namely, Human values and Professional Ethics, Environmental Studies have been introduced as mandatory courses for all programmes of engineering to address issues as Gender Equality, Sustainability, Human Values and Ethics.</li> <li>• Courses on Disaster management, Non-Conventional energy resources etc, are offered as open electives. These courses help students gain a worldview of the self, society and profession. It emphasizes on holistic understanding of ethical human conduct, trustful and mutually satisfying human behavior.</li> <li>• The university also conducts Blood Donation Camps to promote National Integrity, Human values, Communal Harmony.</li> <li>• Environment and Sustainability Environmental Studies is an interdisciplinary course. The course is offered as a mandatory course for all the U.G programs. The course includes the study of natural resources with emphasis on renewable energy resources, the importance of conserving the present ecosystem, promoting biodiversity, perils of environmental pollution and raising awareness on environmental and social issues.</li> <li>• A course on "Non-conventional Energy sources" is offered to explain the generation of electricity from various non-conventional sources of energy such as solar, wind, ocean and geothermal energies.</li> <li>• Guest lectures on Environment and Human Ethics are organized in the departments to aware students about the Conservation of environment and develop ethical morals in them.</li> <li>• International Women's Day is celebrated every year with active student participation. Also, special talks are arranged to encourage women to explore opportunities in science and technology. The student counselor counsels students on gender equality and other related issues.</li> <li>• Following subjects has been introduced in the syllabus for developing the above said morals in the students:</li> </ul> <table border="1" data-bbox="375 1489 1220 1883"> <thead> <tr> <th>Sr. No.</th> <th>Name of Subject</th> <th>Subject Code</th> <th>Course Name</th> <th>Semester</th> <th>Relevant crosscutting issues</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Environmental Science</td> <td>EVS101-18</td> <td>B.Tech</td> <td>4<sup>th</sup></td> <td>Environment and Sustainability</td> </tr> <tr> <td>2.</td> <td>Management &amp; Engineering Economics</td> <td>BTME504-18</td> <td>B.Tech</td> <td>5<sup>th</sup></td> <td>Professional ethics</td> </tr> </tbody> </table>	Sr. No.	Name of Subject	Subject Code	Course Name	Semester	Relevant crosscutting issues	1.	Environmental Science	EVS101-18	B.Tech	4 <sup>th</sup>	Environment and Sustainability	2.	Management & Engineering Economics	BTME504-18	B.Tech	5 <sup>th</sup>	Professional ethics	5
Sr. No.	Name of Subject	Subject Code	Course Name	Semester	Relevant crosscutting issues															
1.	Environmental Science	EVS101-18	B.Tech	4 <sup>th</sup>	Environment and Sustainability															
2.	Management & Engineering Economics	BTME504-18	B.Tech	5 <sup>th</sup>	Professional ethics															

Head  
 Department of Mechanical Engineering  
 LK. Gujral Punjab Technical University  
 (Main Campus) Kapurthala

for Head  
  
 (Main Campus) Kapurthala



3.	Essence of Indian Knowledge Tradition	BTMC102-18	B.Tech	5 <sup>th</sup>	Human Values
4.	4 Weeks Industrial Training	BTME409-18	B.Tech	5 <sup>th</sup>	Professional ethics
5.	Non Conventional Energy Resources	BTME615-18	B.Tech	6 <sup>th</sup>	Environment and Sustainability
6.	6 Months Industrial Training	BTME-801	B.Tech	8 <sup>th</sup>	Professional ethics

Write description in maximum of 500 words

**File Description (Upload)**

- Any additional information : NIL
- Upload the list and description of the courses which address the Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum: Provided as above

*fa An*

Head  
Department of Mechanical Engineering  
U.K. Gujral Punjab Technical University  
(Main Campus) Kapurthala

*[Signature]*

*[Signature]*



1.3.1

## Department of Electrical Engineering



**I.K Gujral Punjab Technical University, Kapurthala**  
**Department of Electrical Engineering**  
**(Main Campus)**

1.3.1 QM	<p>Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability in to the Curriculum</p> <p><b>Write description in maximum of 200 words:</b></p> <ol style="list-style-type: none"><li>1. The students participate in activities of NSS such as tree plantation drive, blood donation, cleanliness drive in villages, World environment day celebrations.</li><li>2. In the UG programme offered by the Department there are courses such as: Human values, environmental science, Education, Technology and Society, Values and Ethics, Introduction to Women's and Gender Studies, Education, Technology and Society, Law and Engineering. In the PG programme there are courses such as: Value Education, Personality Development through Life Enlightenment Skills and Waste to Energy, Research Methodology and IPR</li><li>3. There is provision of girl's hostel in the University, and girl's common room in the department. The women's cell is established. Gender sensitization activities talks are undertaken that cover issues of human rights, women's rights, gender justice, and gender equality.</li></ol>
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Head  
Department of Electrical Engineering  
I.K. Gujral Punjab Technical University  
Kapurthala-144006 

I.K.GUJRAL PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA  
MAIN CAMPUS

Department of Electrical Engineering

Sub: Annexure 1.3.1

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

In the B. Tech Electrical Engineering Programme the mandatory courses are part of approved scheme and syllabus and details are as:

BTMC- XXX-18 Mandatory Course (BTMC-101-18 or BTMC102-18)

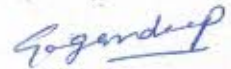
**MANDATORY COURSES (Non-Credit Courses)**

BTMC-101-18 Indian Constitution 3L:0T:0P

BTMC-102-18 Essence of Indian Traditional Knowledge 3L:0T:0P

EVS 101-18 Environmental Studies 2L:0T:0P

The integration of environmental sciences into the engineering under graduate program is to address the issues related to environment may be caused by adverse effects of advanced application of engineering and sciences. Through this course students got the understanding of value of safe environment and moral duty to protect the environment.



Head



Head  
Department of Electrical Engineering  
I.K. Gujral Punjab Technical University  
Kapurthala-144006

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<b>BTMC-101-18</b>	<b>Indian Constitution</b>	<b>3L:0T:0P</b>	<b>0 credits</b>
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Internal Marks: 40 External Marks: 60 Total Marks: 100

The Constitution of India is the supreme law of India. Parliament of India cannot make any law which violates the Fundamental Rights enumerated under the Part III of the Constitution. The Parliament of India has been empowered to amend the Constitution under Article 368, however, it cannot use this power to change the “basic structure” of the constitution, which has been ruled and explained by the Supreme Court of India in its historical judgments. The Constitution of India reflects the idea of “Constitutionalism” – a modern and progressive concept historically developed by the thinkers of “liberalism” – an ideology which has been recognized as one of the most popular political ideology and result of historical struggles against arbitrary use of sovereign power by state. The historic revolutions in France, England, America and particularly European Renaissance and Reformation movement have resulted into progressive legal reforms in the form of “constitutionalism” in many countries. The Constitution of India was made by borrowing models and principles from many countries including United Kingdom and America.

The Constitution of India is not only a legal document but it also reflects social, political and economic perspectives of the Indian Society. It reflects India’s legacy of “diversity”. It has been said that Indian constitution reflects ideals of its freedom movement, however, few critics have argued that it does not truly incorporate our own

ancient legal heritage and cultural values. No law can be “static” and therefore the Constitution of India has also been amended more than one hundred times. These amendments reflect political, social and economic developments since the year 1950. The Indian judiciary and particularly the Supreme Court of India has played an historic role as the guardian of people. It has been protecting not only basic ideals of the Constitution but also strengthened the same through progressive interpretations of the text of the Constitution. The judicial activism of the Supreme Court of India and its historic contributions has been recognized throughout the world and it gradually made it “as one of the strongest court in the world”.

#### Course content

- 1 Meaning of the constitution law and constitutionalism
- 2 Historical perspective of the Constitution of India
- 3 Salient features and characteristics of the Constitution of India
- 4 Scheme of the fundamental rights
- 5 The scheme of the Fundamental Duties and its legal status
- 6 The Directive Principles of State Policy – Its importance and implementation
- 7 Federal structure and distribution of legislative and financial powers between the Union and the States
- 8 Parliamentary Form of Government in India – The constitution powers and status of the President of India
- 9 Amendment of the Constitutional Powers and Procedure
- 10 The historical perspectives of the constitutional amendments in India
- 11 Emergency Provisions : National Emergency, President Rule, Financial Emergency



- 12 Local Self Government – Constitutional Scheme in India
- 13 Scheme of the Fundamental Right to Equality
- 14 Scheme of the Fundamental Right to certain Freedom under Article 19
- 15 Scope of the Right to Life and Personal Liberty under Article 21

**Objectives:** The objective of the course is to provide the basic knowledge about the Political System of the Country. The basic idea is to make the students aware of their duties and rights. Apart from it the course will aim to educate the pupils about the working of different organs of the government, various constitutional bodies and the agencies of the government. In addition to it, students will be given brief knowledge regarding the different challenges of Indian Political System, forms of Government in India and nature & dimensions of Indian Federal System.

**Course Pedagogy:** Since the course is of Practical Importance, it is recommended that during the course students will be taken out for one visit to any place with the potential of imparting practical knowledge to the students about the Indian Political System. Such places can be Indian Parliament, State Legislative Assembly, Youth Parliament Pune. It is expected that students should be given case studies about the Indian Political System and Debates on Constitutional Issues should be organised in the campus.

**Course Outcome:** After the successful completion of the course students will be to understand the different dimensions of Indian Political System. They will be aware about their duties towards the fellow citizens. Students will be able to challenges of the democratic institutions and theoretical aspects of the state and its organs.

**Suggested Reading:**

1. Indian Political System by J C Johri
2. Indian Political System by Mahendra Prasad Singh
3. Fundamentals of Indian Political System by Rajesh K Jha
4. Our Constitution by Subhash C Kashyap
5. Our Political System by Subhash C Kashyap
6. Indian Federalism – An Introduction by Mahendra Prasad Singh
7. Indian Federalism and Autonomy by S Chandrasekhar



<b>BTMC-102-18</b>	<b>Essence of Indian Traditional Knowledge</b>	<b>3L:0T:0P</b>	<b>0 credits</b>
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Internal Marks: 40 External Marks: 60 Total Marks: 100

### **Part-1**

#### **Course objective**

The course aims at imparting basis principals of thought process. Reasoning and inferencing Sustainability is at the core of Indian Traditional Knowledge Systems connecting society and nature. Holistic life style of yogic science and wisdom capsules in Sanskrit Literature are also important in modern society with rapid technological advancements and societal disruptions Part-1 focuses on introduction to Indian Knowledge System. Indian perspective of modern scientific world -view and basis principal of Yoga and holistic health care system.

#### **Course contents**

- Basic Structure of Indian Knowledge system
- Modern Science and Indian Knowledge system
- Yoga and Holistic Health Care
- Case studies

#### **References**

- Fritzo Capra Too of Physics
- Fritzo Capra The Wave of life
- Yoga Sutra of Patanjali. Ramakrishna Mission. Kolkata.
- RN Jha Science of Consciousness Psychotherapy and Yoga Practices. Vidyanidhi Prakashan. Delhi2016
- PB Sharma (English translation) ShodashangHridayam

**Pedagogy:** Problem based learning, group discussion, collaborative mini projects

**Outcome:** Ability to understand connect up and explain basics of Indian traditional Knowledge in Modern scientific perspective.

### **Part-2**

#### **Course objective**

The course aims at imparting basis principals of thought process. Reasoning and inferencing Sustainability is at the core of Indian Traditional Knowledge Systems connecting society and nature. Holistic life style of yogic science and wisdom capsules in Sanskrit Literature are also important in modern society with rapid technological advancements and societal disruptions Part-2 focuses on Indian philosophical traditions. Indian linguistic Tradition, and Indian artistic tradition.

#### **Course contents**

- Philosophical Tradition
- Indian Linguistic Tradition (Phonology, morphology, syntax and semantics)
- Indian Artistic Tradition
- Case studies

#### **References**

- V.Sivaramakrishnan (Ed.), Cultural Heritage of India-Course material, Bhartiya Vaidya Bhawan Mumbai 5<sup>th</sup> Edition 2014
- S.C Chaterjee &D.M .Datta , An introduction to Indian Philosophy ,University of Calcutta 1984



- KS Subrahmanialyer ,Vakyapadiya of Bhattaraihari (Brahma Kanda), Deccan College Pune 1965
- VN Jha, Language Thought and Reality
- Pramod Chandra. India Arts Howard Univ. Press 1983
- Krishna Chaitanya Arts of India. Abhinav Publications. 1987
- R Nagaswamy , Foundations of Indian Art Tamil Arts Academy.2002

**Pedagogy:** Problem based learning, group discussion, collaborative mini projects

**Outcome:** Ability to understand connects up and explain basics of Indian traditional Knowledge in Modern scientific perspective.





<b>EVS-101-18</b>	<b>Environmental Studies</b>	<b>2L:0T:0P (Contact hours 21)</b>	<b>0 credits</b>
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\* 40 Hours are kept for various activities under the head of activities. There will be a final theory examination for the students of 50 marks but these marks will not be added to their final result as assessment will be satisfactory or non-satisfactory.

**Course Outcomes:**

- CO 1** Students will enable to understand environmental problems at local and national level through literature and general awareness.
- CO 2** The students will gain practical knowledge by visiting wildlife areas, environmental institutes and various personalities who have done practical work on various environmental Issues.
- CO 3** The students will apply interdisciplinary approach to understand key environmental issues and critically analyze them to explore the possibilities to mitigate these problems.
- CO 4** Reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world

**Environment Science (Mandatory non-credit course)**

We as human being are not an entity separate from the environment around us rather we are a constituent seamlessly integrated and co-exist with the environment around us. We are not an entity so separate from the environment that we can think of mastering and controlling it rather we must understand that each and every action of ours reflects on the environment and vice versa. Ancient wisdom drawn from Vedas about environment and its sustenance reflects these ethos. There is a direct application of this wisdom even in modern times. Idea of an activity based course on environment protection is to sensitize the students.

Detailed Contents

**Module 1: Natural Resources : Renewable and non-renewable resources**

Natural resources and associated problems.

- Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people.
- Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
- Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
- Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
- Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies.
- Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
  - Role of an individual in conservation of natural resources.
  - Equitable use of resources for sustainable lifestyles.

**Module 2: Ecosystems**

Concept of an ecosystem. Structure and function of an ecosystem.

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Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of following ecosystems:

- a) Forest ecosystem
- b) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

### **Module 3 : Biodiversity and its conservation**

- Introduction – Definition: genetic, species and ecosystem diversity.
- Biodiversity at global, National and local levels.
- India as a mega-diversity nation
- Hot-spots of biodiversity.
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts.
- Endangered and endemic species of India

### **Module 4 : Social Issues and the Environment**

- From Unsustainable to Sustainable development
- Resettlement and rehabilitation of people; its problems and concerns.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion,
- Nuclear accidents and holocaust. Case Studies.
- Public awareness.

### **\*ACTIVITIES**

**Nature club** (bird watching, recognizing plants at institute/at home, recognizing local animals, appreciating biodiversity)

Impart knowledge and inculcate the habit of taking interest and understanding biodiversity in and around the college campus. The students should be encouraged to take interest in bird watching, recognizing local plants, herbs and local animals. The students should be encouraged to appreciate the difference in the local biodiversity in their hometown, in the place of their study and other places they visit for vacation/breaks etc.

Following activities must be included.

Identify a tree fruit flower peculiar to a place or having origin from the place.

Making high resolution big photographs of small creatures (bees, spiders, ants, Mosquitos etc.) especially part of body so that people can recognize (games on recognizing animals/plants).

Videography/ photography/ information collections on specialties/unique features of different types of common creatures.

Search and explore patents and rights related to animals, trees etc. Studying miracles of mechanisms of different body systems.

#### **(A) Awareness Activities:**

- a) Small group meetings about water management, promotion of recycle use, generation of less waste, avoiding electricity waste
- b) Slogan making event
- c) Poster making event
- d) Cycle rally
- e) Lectures from experts
- f) Plantation
- g) Gifting a tree to see its full growth
- h) Cleanliness drive

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- i) To live with some eminent environmentalist for a week or so to understand his work.
- j) To work in kitchen garden for mess
- k) To know about the different varieties of plants
- l) Shutting down the fans and ACs of the campus for an hour or so
- m) Visit to a local area to document environmental assets  
river/forest/grassland/hill/mountain/lake/Estuary/Wetlands
- n) Visit to a local polluted site-Urban/Rural/Industrial/Agricultural
- o) Visit to a Wildlife sanctuary, National Park or Biosphere Reserve

#### **Suggested Readings**

1. Agarwal, K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.
2. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd.,  
Ahmedabad – 380 013, India, Email:mapin@icenet.net (R)
3. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p
4. Clark R.S., Marine Pollution, Clarendon Press Oxford (TB)
5. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental  
Encyclopedia, Jaico Publ. House, Mumbai, 1196p
6. Hawkins R.E., Encyclopedia of Indian Natural History, Bombay Natural History Society,  
Bombay (R)
7. Heywood, V.H & Waston, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ.  
Press 1140p.
8. Mhaskar A.K., Matter Hazardous, Techno-Science Publication (TB)
9. Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB)
10. Odum, E.P. 1971. Fundamentals of Ecology. W.B. Saunders Co. USA, 574p
11. Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science  
(TB)
12. Trivedi R.K., Handbook of Environmental Laws, Rules Guidelines, Compliances and  
Standards, Vol I and II, Enviro Media (R)
13. Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication  
(TB)
14. Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA  
499p

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Board of Studies (Electrical Engineering) Main Campus and Constituent Campuses

21<sup>st</sup> May, 2020

IKG Punjab Technical University

  
Head


Department of Electrical Engineering  
I.K. Gujral Punjab Technical University  
Kapurthala-144006

1.3.1

## Department of Electronics & Communication



<p>1.3.1</p> <p>Q<sub>i</sub>M</p>	<p><b><i>Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum</i></b></p> <p>In the programs of the Department Electronics and Communication Engineering i.e., B.Tech Electronics and Communication Engineering 2019 scheme, B.Tech Electronics and Communication Engineering 2021 scheme, B.tech Artificial Intelligence &amp; Machine Learning, M.tech ECE (Wireless Communication) the mandatory courses are part of approved schemes and syllabus and details are given below:</p> <p><b>Mandatory Courses (Non-Credit Courses)</b></p> <p>BTMC-XXX-18 Mandatory course (BTMC-101-18 or BTMC-102-18)</p> <p>BTMC-101-18 Indian Constitution 3L.0T.0P</p> <p>BTMC-102-18 Essence of Indian Traditional Knowledge 3L.0T.0P</p> <p>EVS-101-18 Environmental studies 2L.0T.0P</p> <p>MTAXXX-Audit Courses - I and II 3L.0T.0P</p> <p>The integration environmental sciences into the engineering under graduate programme is to address the issue related to the environment may be caused by the adverse effect of advanced applications of engineering and sciences. Through these courses student got the understanding of value of the safe environment and moral duty to protect the environment</p>
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 Head  
 Department of Electronics & Communication Engineering  
 J.K. Gujral Punjab Technical University  
 Main Campus, Kapurthala (Punjab)-144603

**List of Courses Which Address Gender, Environment & Sustainability, Human Values & Professional Ethics into the Curriculum:**


**Mandatory Courses (Non-Credit Courses)**

S. No.	Program	Course Name	Course Code	Focus on Relevant Crosscutting Issue (Gender / Environment & Sustainability / Human Values & Professional Ethics)	Course Description
1.	B.Tech ECE 2019 B.Tech ECE 2021 B.Tech AI & ML	Environmental Sciences	EVS-101-18	Environment & Sustainability	Through these courses student gets the understanding of value of the safe environment and moral duty to protect the environment
2.	B.Tech ECE 2019 B.Tech ECE 2021 B.Tech AI & ML	Indian Constitution	BTMC-101-18	Constitutional Professional Ethics	It is a Mandatory course in which the students learn about general know-how about our Constitution and its ethics there in.
3.	B.Tech ECE 2019 B.Tech ECE 2021 B.Tech AI & ML	Essence of Indian Traditional Knowledge	BTMC-102-18	Human Values/Traditions/Ethics	It is a Mandatory course in which the students learn about general knowledge about Indian traditional systems and interests
4.	B.Tech ECE 2019 B.Tech ECE 2021 B.Tech AI & ML	Foundational Course in Humanities (Development of Societies or Philosophy)	HSMC-101-18/HSMC-102-18	Gender, Human Values & Professional Ethics	The course consists of good knowledge of Development of societies and their philosophies

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5.	B.Tech ECE 2019 B.Tech ECE 2021 B.Tech AI & ML	Universal Human Values 2- Understanding Harmony	HSMC- 122-18	Gender, Human Values & Professional Ethics	The course consists of good knowledge of Development of societies and their philosophies
6.	M.Tech ECE (Wireless Communications)	Audit Courses - I, II	MTA- XXX-18	Gender / Environment & Sustainability / Human Values & Professional Ethics	Thses courses of M.Tech program are mandatory and cover all the aspects of Gender / Environment & Sustainability / Human Values & Professional Ethics so that students can have basic knowledge about these concepts.

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1.3.1

## Department of Food Science & Technology





## Annexure DFST Write up 1.3.1

Metric No.		Weightage
1.3.1  QIM	<p><b><i>Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum</i></b></p> <p>Write description in maximum of 500 words</p> <p><b>Department of Food Science &amp; Technology</b></p> <p>The study schemes of all the courses that run in the department have the provision of open elective, Generic elective, etc. In these elective courses the subjects of professional ethics, human values, environmental studies, waste utilization, Indian constitution, etc are incorporated along with options to the students to study on online platforms like SWAYAM, NPTEL and MOOCS in such relevance. Students keenly participate in such subjects so as to become a useful citizen to the society to serve the community in a better way rather than focusing on core subjects of the chosen field.</p> <p>As mentioned above, apart from the present curriculum students have been given opportunity to study courses related to Professional Ethics, Human Values. These values inculcated in the students ensure that they will value fellow citizens, treat them equally regardless of their gender and abide by the constitution of Republic of India.</p> <p><b>File Description (Upload)</b></p> <ul style="list-style-type: none"> <li>• Any additional information</li> <li>• Upload the list and description of the courses which address the Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum</li> </ul>	5

  
 Head  
 Deptt. of Food Science & Technology  
 LK Gujral Punjab Technical University  
 KAPURTHALA  
 20/06/23

**I.K.Gujral Punjab Technical University**  
**Main Campus**  
**Department of Food Science and Technology**

**List of Courses and Description**

Sr. No	Course	Description
<b>Environment and Sustainability</b>		
1	Foundation Course	<ul style="list-style-type: none"> <li>Understand the significance of the environment related issues in the new drug discovery and development</li> </ul>
<b>Professional Ethics</b>		
2	Clinical Research Regulations & Ethics	<ul style="list-style-type: none"> <li>Be familiar with the documents required to be complied for an ethical &amp; regulatory clinical trial application</li> </ul>
3	Research and Publication Ethics	<ul style="list-style-type: none"> <li>Awareness of students about philosophy and ethics about publication</li> <li>Learn the best practices for publication ethics</li> <li>Understand the Ethics with respect to science and research</li> </ul>
<b>Human Values and Gender Sensitivity</b>		
4	Value Education	<ul style="list-style-type: none"> <li>Understand value of education and self-development</li> <li>Imbibe good values in students</li> <li>Let the should know about the importance of character</li> </ul>
5	Constitution of India	<ul style="list-style-type: none"> <li>Understand the premises informing the twin themes of liberty and freedom from a civil rights perspective.</li> <li>To address the growth of modern Indian intellectuals constitutional role and entitlement to civil and economic rights as well as the emergence of nationhood in the early of Indian nationalism.</li> <li>To address the role of socialism in India after the commencement of the Bolshevik Revolution in 1917 and its impact on the initial drafting of the Indian Constitution.</li> </ul>
6	Stress Management by Yoga	<ul style="list-style-type: none"> <li>To achieve overall health of body and mind.</li> <li>To overcome stress</li> </ul>
7	Personality Development through life Enlightenment Skills	<ul style="list-style-type: none"> <li>To learn to achieve the highest goal happily</li> <li>To become a person with stable mind, pleasing personality and determination</li> <li>To awaken wisdom in students</li> </ul>

*Rajneesh Sachdev*  
26/06/23

(Dr. Rajneesh Sachdev)

**Head**  
**Head, DFST**  
**Deptt. of Food Science & Technology**  
**I.K. Gujral Punjab Technical University**  
**KAPURTHALA**

1.3.1

## Department of Journalism & Mass Communication



### Key Indicator-1.3 Curriculum Enrichment

Metric No.	
1.3.1  QM	<p><i>Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum</i></p> <p>The course in Department of Communication and Journalism aim at developing social responsibility of the students. Media as the Fourth Estate has a responsibility on its shoulders to play a role of watchdog in the society. The student of these courses are equipped to work keeping in mind this objective.</p> <p>The curriculum of this course is designed in such a way in which students have to study Environment Journalism separately which actively motivate in creating awareness about all the environment issues and how to cover those issues and create awareness in the society.</p> <p>The Department of Journalism and Mass Communication train its students to use media in spreading social message nearby rural areas.</p> <p>The students of the department are trained by the use of cameras by training the students to produce short movies and documentary on themes of social issues. Topics like human values, women empowerment, drugs, equality and child labour etc. form the themes are taken and taught them to cover such sensitive issues keeping in mind the professional ethics.</p> <p>Communication and Computer skills have also been incorporated in all Programmes and due credits are given for these courses.</p> <p>Research students in department are encouraged to work on social issues and how media play its role in covering all the issues.</p>



Department of Journalism & Mass Communication  
 VIT-AP  
 Vellore

1.3.1

## Department of **Hotel** Management



### **1.3.1. Institution integrates cross cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum**

The University strongly focuses upon the issues of equality and inequality in various community groups, human values, ethical values and environment sustainability. Therefore, to integrate cross cutting issues relevant to Gender, Environment and Sustainability, courses like Human Values, De-addiction and Traffic Rules (HVPE) and Environmental Studies (EVS) have been embedded in the curriculum of BHMCT.

Under HVPE subject, students are acquainted with the concepts of professional and societal ethics, gender equalities and inequalities, feminist relationships and the importance of values like love, loyalty, honesty, trust, friendship, unity, etc. Also, seminars are conducted on Drug Deaddiction and knowledge of Traffic Rules for students to become better citizens and humans. Students are also encouraged to participate in various NGO's in order to contribute in overall growth of society. Apart from this, the university organizes a 7-day workshop on HVPE which is mandatory for all the faculty members to attend so that they can impart better understanding among students about the subject.

Under the EVS course, the students are acquainted with the concepts of sustainability in environment. They are informed about various ecosystems, the rate at which they are being spoiled and what should be done to conserve them. They are also acquainted with the concepts of biodiversity, natural resources, different types of pollution and their level of destruction in society. The subject mainly focuses upon inculcating thinking among students how they are important in ensuring sustainable environmental development in society.

These subjects ensure the holistic development of the students so that they are able to have a positive perception towards life, career and society. It also ensures that students, being the future drivers of this society, live their life happily and also makes other's life happy.

Any additional information-**Nil**

Link for Additional-**Nil**

1.3.1

## Department of Management Studies



### **1.3.1. Institution integrates cross cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum**

The University strongly focuses upon the issues of equality and inequality in various community groups, human values, ethical values and environment sustainability. Therefore, in order to integrate cross cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics (HVPE) into the Curriculum, the Department has embedded Human values and Professional Ethics subject in the curriculum of MBA program as well as PhD program. Environmental Studies (EVS) has been embedded at the UG level i.e. BBA

Under HVPE subject, students are acquainted with the concepts of professional and societal ethics, gender equalities and inequalities, feminist relationships and the importance of values like love, loyalty, honesty, trust, friendship, unity, etc. Students are also encouraged to participate in various NGO's in order to contribute in overall growth of society. Apart from this, the university organizes a 7-day workshop on HVPE which is mandatory for all the faculty members to attend so that they can impart better understanding among students about the subject.

Under the EVS course, the students are acquainted with the concepts of sustainability in environment. They are informed about various ecosystems, the rate at which they are being spoiled and what should be done to conserve them. They are also acquainted with the concepts of biodiversity, natural resources, different types of pollution and their level of destruction in society. The subject mainly focuses upon inculcating thinking among students how they are important in ensuring sustainable environmental development in society.

These subjects ensure the holistic development of the students so that they are able to have a positive perception towards life, career and society. It also ensures that students, being the future drivers of this society, live their life happily and also makes other's life happy.

Any additional information-**Nil**

Link for Additional-**Nil**



**DEPARTMENT OF MANAGEMENT & HOSPITALITY (DOM&H)**  
**I. K. GUJRAL PUNJAB TECHNICAL UNIVERSITY MAIN CAMPUS**

D. No. IKGPTU/DOM&H/7790

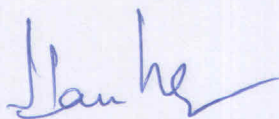
DATED: 23/01/2024

**List of Courses Which Address Gender, Environment & Sustainability, Human Values & Professional Ethics into the Curriculum:**

S. No.	Program	Course Name	Course Code	Focus on Relevant Crosscutting Issue (Gender / Environment & Sustainability / Human Values & Professional Ethics)	Course Description
1.	BBA	Human Values, Deaddiction and Traffic Rules	HVPE101-18 Ability Enhancement Compulsory Course (AECC)	Human Values & Professional Ethics	This course is intended to provide a much needed orientational input in Value Education to the young enquiring minds and facilitate the development of a Holistic perspective among students towards life, profession and happiness based on ethical conduct
2.	BBA	Human Values, Deaddiction and Traffic Rules (Lab/ Seminar)	HVPE102-18 Ability Enhancement Compulsory Course (AECC)	Human Values & Professional Ethics	Two seminars one each on Drug De-addiction and Traffic Rules are organised. Eminent scholar and experts of the subject are called for the Seminar at least once during the semester.
3.	BBA	Environmental Studies	EVS102-18 Ability Enhancement Compulsory Course (AECC) - III	Environment & Sustainability	This course will enable students to understand environmental problems at local and national level through literature and general awareness.
4.	MBA	Business Ethics and CSR	MBA 106-18 Core Theory	Human Values & Professional Ethics	This Paper introduces students to the relationship between business and ethics and tries them to understand how ethical principles could influence management decisions. It also signifies the concept of CSR and its implications on business.

*WZ*

5.	MBA	Human Values, De-addiction, and Traffic Rules	HVPE101-18 Ability Enhancement Compulsory Course (AECC)	Human Values & Professional Ethics	This course is intended to provide a much needed orientational input in Value Education to the young enquiring minds and facilitate the development of a Holistic perspective among students towards life, profession and happiness based on ethical conduct.
6.	MBA	Human Values, De-addiction, and Traffic Rules (Lab/ Seminar)	HVPE 102-18 Ability Enhancement Compulsory Course (AECC)	Human Values & Professional Ethics	Two seminars one each on Drug De-addiction and Traffic Rules are organised. Eminent scholar and experts of the subject are called for the Seminar atleast once during the semester. It
7.	MBA	Workshop on Indian Ethos	MBA 403-18 Core Theory	Human Values & Professional Ethics	The course is an attempt for the students to learn about how to apply the concepts and theories of ancient Indian management, ethos and values in business.
8.	PhD Coursework	Human Values and Professional Ethics	PHD 906	Human Values & Professional Ethics	To help the students to discriminate between valuable and superficial in the life. Also to help students develop sensitivity and awareness; leading to commitment and courage to act on their own belief
9.	PhD Coursework	Research and Publication Ethics (RPE)	RPE	Human Values & Professional Ethics	This course aims at developing an attitude of conducting original, quality research among scholars with research integrity and ethics.



**(Dr. Harmeen Soch)**  
**Head of Department**



1.3.1

## Department of **Humanities Languages and Cultural Studies**



### Key Indicator – 1.3 Curriculum Enrichment (30)

Metric No.		Weightage
1.3.1	<p><i>Institution integrates crosscutting issues relevant to professional ethics, gender, human values, environment and sustainability into the curriculum</i></p> <p><b>List of Courses:</b></p> <ul style="list-style-type: none"> <li>• Universal Human Values &amp; Professional Ethics</li> <li>• Development of societies/Philosophy</li> <li>• Essence of Indian Knowledge Tradition</li> <li>• Indian Constitution</li> </ul> <p><b>Description of Courses:</b></p> <p><b>1. Universal Human Values &amp; Professional Ethics</b>            The Department of Humanities, Languages and Cultural Studies is running the mandatory courses in B.Tech. programmes as per the guidelines of AICTE model course curriculum pertaining to the Universal Human Values &amp; Professional Ethics, Environment and Sustainability in terms of technological development. A rich set of courses and projects would help in making students into holistic human beings. Through these, the student would become aware of oneself and one's surroundings. One would gain a larger understanding of family, society, nation, and the world.</p> <p><b>2. Development of societies/Philosophy</b>            The course regarding Development of Societies has been started to inculcate the values of society among the students. The course primarily deals with the Development of Societies through ages. The historical development of societies is also being considered to chalk out the development in terms of civilization. Philosophy is an integral part of human society. The course on Philosophy has been adopted on the AICTE guidelines to have the thorough knowledge of key issues of philosophy.</p>	5

	<p><b>3. Essence of Indian Knowledge Tradition</b></p> <p>The main objective of the course is to have the knowledge of Indian Traditional wisdom to the budding engineers. The course also motivates the young students for the documentation of Indian Knowledge Tradition systems.</p> <p><b>4. Indian Constitution</b></p> <p>The course has been designed to have the thorough knowledge of Indian Constitution. The student will learn the essence of Indian Constitution. The will able to learn the Preamble, Fundamental Rights and Duties in details.</p> <p>5. There search scholars are also conducting research on issues related to the environmental sustainability.</p>	
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1.3.1

## IKGPTU, Amritsar Campus



List and description of the courses which address the Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum

### Department of Mechanical Engineering

Sr. No.	Name of Subject	Subject Code	Course Name	Semester
1.	Environmental Science	EVS101-18	B.Tech.	4 <sup>th</sup>
2.	Management & Engineering Economics	BTME504-18	B.Tech.	5 <sup>th</sup>
3.	Essence of Indian Knowledge Tradition	BTMC102-18	B.Tech.	5 <sup>th</sup>
4.	4 Weeks Industrial Training	BTME409-18	B.Tech.	5 <sup>th</sup>
5.	Non-Conventional Energy Resources	BTME615-18	B.Tech.	6 <sup>th</sup>
6.	6 Months Industrial Training	BTME-801	B.Tech.	8 <sup>th</sup>

### Department of Computer Science & Engineering

Sr. No	Subject Name	Semester	Teaching load per week (Hrs)
1	Mentoring and Professional Development	1 <sup>st</sup>	02
2	Mentoring and Professional Development	2 <sup>nd</sup>	02
3	Foundation Course in Humanities (Development of Societies/Philosophy)	3 <sup>rd</sup>	03
4	Universal Human Values 2	4 <sup>th</sup>	03
5	Environmental Sciences	4 <sup>th</sup>	03



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Near GNDU, G. T. Road, P.O. Chheharta,  
Amritsar-143105 Punjab.  
Ph:- 0183-2450034, 7087364656

**I. K. Gujral Punjab Technical University**  
**Bachelor of Computer Applications (BCA)**

**Recommended Readings:**

1. *Fluency in English - Part II*, Oxford University Press, 2006.
2. *Business English*, Pearson, 2008.
3. *Practical English Usage*. Michael Swan. OUP. 1995.
4. *Communication Skills*. Sanjay Kumar and Pushp Lata. Oxford University Press. 2011.
5. *Exercises in Spoken English*. Parts. I-III. CIEFL, Hyderabad. Oxford University Press

**Course Code: HVPE101-18**

**Course Name: Human Values, De-addiction and Traffic Rules**

<b>Program:</b> BCA	<b>L:</b> 3 <b>T:</b> 0 <b>P:</b> 0
<b>Branch:</b> Computer Applications	<b>Credits:</b> 3
<b>Semester:</b> 1 <sup>st</sup>	<b>Contact hours:</b> 33 hours
<b>Internal max. marks:</b> 40	<b>Theory/Practical:</b> Theory
<b>External max. marks:</b> 60	<b>Duration of end semester exam (ESE):</b> 3hrs
<b>Total marks:</b> 100	<b>Elective status:</b> Ability Enhancement

**Prerequisite:** -NA-

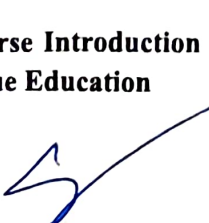
**Co requisite:** -NA-

**Additional material required in ESE:** -NA-

**Course Outcomes:**

CO#	Course outcomes
CO1	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.
CO2	To facilitate the development of a Holistic perspective among students towards life, profession and happiness, based on a correct understanding of the Human reality and the rest of Existence. Such a holistic perspective forms the basis of Value based living in a natural way.
CO3	To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behavior and mutually enriching interaction with Nature.

Note: This course is intended to provide a much needed orientational input in Value Education to the young enquiring minds.

Unit-I	Detailed Contents	Contact hours
Course Introduction - Need, Basic Guidelines, Content and Process for Value Education	 <p style="text-align: center;">I. K. Gujral Punjab Technical                      University Amritsar Campus,                      Indira Gandhi Technical College,                      Near Chheharta, Amritsar-141 001, Punjab, India.                      Ph:- 0183-2450300, 7087364656</p>	8



**I. K. Gujral Punjab Technical University  
Bachelor of Computer Applications (BCA)**

<ol style="list-style-type: none"> <li>1. Understanding the need, basic guidelines, content and process for Value Education</li> <li>2. Self-Exploration—what is it? - its content and process; ‘Natural Acceptance’ and Experiential Validation- as the mechanism for self-exploration</li> <li>3. Continuous Happiness and Prosperity- A look at basic Human Aspirations</li> <li>4. Right understanding, Relationship and Physical Facilities- the basic requirements for fulfillment of aspirations of every human being with their correct priority</li> <li>5. Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario</li> <li>6. Method to fulfill the above human aspirations: understanding and living in harmony at various levels</li> </ol>	
<p><b>Unit-II</b></p> <p><b>Understanding Harmony in the Human Being - Harmony in Myself!</b></p> <ol style="list-style-type: none"> <li>1. Understanding human being as a co-existence of the sentient ‘I’ and the material ‘Body’</li> <li>2. Understanding the needs of Self (‘I’) and ‘Body’ - <i>Sukh</i> and <i>Suvidha</i></li> <li>3. Understanding the Body as an instrument of ‘I’ (I being the doer, seer and enjoyer)</li> <li>4. Understanding the characteristics and activities of ‘I’ and harmony in ‘I’</li> <li>5. Understanding the harmony of I with the Body: <i>Sanyam</i> and <i>Swasthya</i>; correct appraisal of Physical needs, meaning of Prosperity in detail</li> <li>6. Programs to ensure <i>Sanyam</i> and <i>Swasthya</i> - Practice Exercises and Case Studies will be taken up in Practice Sessions.</li> </ol>	8
<p><b>Unit-III</b></p> <p><b>Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship</b></p> <ol style="list-style-type: none"> <li>1. Understanding harmony in the Family- the basic unit of human interaction</li> <li>2. Understanding values in human-human relationship; meaning of <i>Nyaya</i> and program for its fulfillment to ensure <i>Ubhay-tripti</i>; Trust (<i>Vishwas</i>) and Respect (<i>Samman</i>) as the foundational values of relationship</li> <li>3. Understanding the meaning of <i>Vishwas</i>; Difference between intention and competence</li> <li>4. Understanding the meaning of <i>Samman</i>, Difference between respect and differentiation</li> </ol>	6



**I. K. Gujral Punjab Technical University  
Bachelor of Computer Applications (BCA)**

<p>5. Understanding the harmony in the society (society being an extension of family): <i>Samadhan, Samridhi, Abhay, Sah-astitva</i> as comprehensive Human Goals</p> <p>6. Visualizing a universal harmonious order in society- Undivided Society (<i>Akhand Samaj</i>), Universal Order (<i>Sarvabhaum Vyawastha</i>)- from family to world family! - Practice Exercises and Case Studies will be taken up in Practice Sessions.</p>	
<p><b>Unit-IV</b></p> <p><b>Understanding Harmony in the Nature and Existence - Whole existence as Co-existence</b></p> <ol style="list-style-type: none"> <li>1. Understanding the harmony in the Nature</li> <li>2. Interconnectedness and mutual fulfillment among the four orders of nature- recyclability and self-regulation in nature</li> <li>3. Understanding Existence as Co-existence (<i>Sah-astitva</i>) of mutually interacting units in all-pervasive space</li> <li>4. Holistic perception of harmony at all levels of existence - Practice Exercises and Case Studies will be taken up in Practice Sessions.</li> </ol>	5
<p><b>Unit-V</b></p> <p><b>Implications of the above Holistic Understanding of Harmony on Professional Ethics</b></p> <ol style="list-style-type: none"> <li>1. Natural acceptance of human values</li> <li>2. Definitiveness of Ethical Human Conduct</li> <li>3. Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order</li> <li>4. Competence in professional ethics:             <ol style="list-style-type: none"> <li>a) Ability to utilize the professional competence for augmenting universal human order,</li> <li>b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems,</li> <li>c) Ability to identify and develop appropriate technologies and management patterns for above production systems.</li> </ol> </li> <li>5. Case studies of typical holistic technologies, management models and production systems</li> <li>6. Strategy for transition from the present state to Universal Human Order:             <ol style="list-style-type: none"> <li>a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers</li> <li>b) At the level of society: as mutually enriching institutions and organizations.</li> </ol> </li> </ol>	6



**I. K. Gujral Punjab Technical University**  
**Bachelor of Computer Applications (BCA)**

**Text Book**

1. R R Gaur, R Sangal, G P Bagaria, 2009, *A Foundation Course in Value Education*.

**Reference Books**

1. Ivan Illich, 1974, *Energy & Equity*, The Trinity Press, Worcester, and Harper Collins, USA.
2. E.F. Schumacher, 1973, *Small is Beautiful: a study of economics as if people mattered*, Blond & Briggs, Britain.
3. A Nagraj, 1998, *Jeevan Vidya ek Parichay*, Divya Path Sansthan, Amarkantak.
4. Sussan George, 1976, *How the Other Half Dies*, Penguin Press. Reprinted 1986, 1991.
5. PL Dhar, RR Gaur, 1990, *Science and Humanism*, Common wealth Publishers.
6. A.N. Tripathy, 2003, *Human Values*, New Age International Publishers.
7. Subhas Palekar, 2000, *How to practice Natural Farming*, Pracheen (Vaidik) Krishi Tantra Shodh, Amravati.
8. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, *Limits to Growth – Club of Rome's report*, Universe Books.
9. E G Seebauer & Robert L. Berry, 2000, *Fundamentals of Ethics for Scientists & Engineers*, Oxford University Press
10. M Govindrajan, S Natrajan & V.S. Senthil Kumar, *Engineering Ethics (including Human Values)*, Eastern Economy Edition, Prentice Hall of India Ltd.
11. B P Banerjee, 2005, *Foundations of Ethics and Management*, Excel Books.
12. B L Bajpai, 2004, *Indian Ethos and Modern Management*, New Royal Book Co., Lucknow. Reprinted 2008.

**Relevant CDs, Movies, Documentaries & Other Literature:**

1. Value Education website, <http://uhv.ac.in>
2. Story of Stuff, <http://www.storyofstuff.com>
3. Al Gore, *An Inconvenient Truth*, Paramount Classics, USA
4. Charlie Chaplin, *Modern Times*, United Artists, USA
5. IIT Delhi, *Modern Technology – the Untold Story*

**Course Code: HVPE102-18**

**Course Name: Human Values, De-addiction and Traffic Rules (Lab/ Seminar)**

<b>Program:</b> BCA	<b>L: 0 T: 0 P: 1</b>
<b>Branch:</b> Computer Applications	<b>Credits: 1</b>
<b>Semester:</b> 1 <sup>st</sup>	<b>Contact hours:</b> 1 hour per week
<b>Internal max. marks:</b> 25	<b>Theory/Practical:</b> Practical
<b>External max. marks:</b> 0	<b>Duration of end semester exam (ESE):</b> 3hrs
<b>Total marks:</b> 25	<b>Elective status:</b> Ability Enhancement



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1.3.1

## IKGPTU, Mohali Campus-I



Metric No.		Weightage
1.3.1 Q <sub>i</sub> M	<p data-bbox="384 248 1262 353"><i>Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum 2023-24</i></p> <p data-bbox="384 376 975 409">Write description in maximum of 500 words:</p> <p data-bbox="384 450 1278 813"><b>Human Values and Professional Ethics:</b> Five days Human Values workshop has been organised for the students. This workshop is comprised of class room discussions with real life situations. It also focuses on ethical concerns common to human service situations. It is in response to a long- felt and urgent need to integrate value education with decision making skills in their professions. The workshop concludes by proposing several salient steps to undertake the journey towards holistic and value-based living. Apart from above, students study following courses as compulsory part of their curriculum:</p> <ul data-bbox="432 824 1278 1059" style="list-style-type: none"> <li>• Foundation Course in Humanities (Development of Societies/Philosophy)</li> <li>• Universal Human Values 2</li> <li>• Constitution of India/ Essence of Indian Traditional Knowledge</li> <li>• Mentoring and Professional Development</li> </ul> <p data-bbox="384 1081 1278 1294"><b>Environment and sustainability:</b> University prescribed compulsory course “Environmental Science”, as part of their curriculum. Moreover, three Open Electives subjects are introduced, and students can opt and study following subjects in open electives leading towards coverage of Environment sustainability:</p> <ul data-bbox="432 1305 927 1417" style="list-style-type: none"> <li>• Disaster Preparedness &amp; Planning</li> <li>• Environmental Impact Assessment</li> <li>• Renewable Energy Sources</li> </ul> <p data-bbox="384 1451 1278 1552">Institution encourages and supports students to go with plans of protecting environment like planting saplings and plastic free campus.</p> <p data-bbox="384 1597 671 1630"><b>File Description (Upload)</b></p> <ul data-bbox="432 1630 1278 1776" style="list-style-type: none"> <li>• Any additional information = Nil</li> <li>• Upload the list and description of the courses which address the Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum = Yes (Copy of Syllabus Attached)</li> </ul>	5

Cop. 1.3.

I.K. Gujral Punjab Technical University  
Bachelor of Technology (B. Tech. 1<sup>st</sup> Year)

Bachelors of Technology 1<sup>st</sup> and 2<sup>nd</sup> semester  
It is an Under Graduate (UG) Programme of 4 years duration (8 semesters)  
Eligibility for Admission: As per AICTE norms.

**First Semester**

**Group-A**

Contact Hrs. : 24

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTPHXX-18	Basic Science Course	Physics	3	1	0	40	60	100	4
BTPHXX-18	Basic Science Course	Physics (Lab)	0	0	3	30	20	50	1.5
BTAMXX-18	Basic Science Course	Maths-I	3*	1	0	40	60	100	4
BTEE101-18	Engineering Science Course	Basic Electrical Engineering	3	1	0	40	60	100	4
BTEE102-18	Engineering Science Course	Basic Electrical Engineering (Lab)	0	0	2	30	20	50	1
BTME101-18	Engineering Science Courses	Engineering Graphics & Design	1	0	4	60	40	100	3
BMPD101-18		Mentoring and Professional Development	0	0	2	Satisfactory / Un-Satisfactory			Non-Credit
<b>TOTAL</b>			<b>10</b>	<b>3</b>	<b>11</b>	<b>220</b>	<b>280</b>	<b>500</b>	<b>17.5</b>

\*These are the minimum contact hrs. allocated. The contact hrs. may be increased by institute as per the need based on the content of subject.

**First Semester**

**Group-B**

Contact Hrs. : 29

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCH101-18	Basic Science Course	Chemistry-I	3	1	0	40	60	100	4
BTCH102-18	Basic Science Course	Chemistry-I (Lab)	0	0	3	30	20	50	1.5
BTAMXX-18	Basic Science Course	Maths-I	3*	1	0	40	60	100	4
BTPS101-18	Engineering Science Course	Programming for Problem Solving	3	0	0	40	60	100	3
BTPS102-18	Engineering Science Course	Programming for Problem Solving (Lab)	0	0	4	30	20	50	2
BTMP101-18	Engineering Science Courses	Workshop / Manufacturing Practices	1	0	4	60	40	100	3
BTHU101-18	Humanities and Social Sciences including Management courses	English	2	0	0	40	60	100	2
BTHU102-18	Humanities and Social Sciences including Management courses	English (Lab)	0	0	2	30	20	50	1
BMPD101-18		Mentoring and Professional Development	0	0	2	Satisfactory / Un-Satisfactory			Non-Credit
<b>TOTAL</b>			<b>12</b>	<b>2</b>	<b>15</b>	<b>290</b>	<b>360</b>	<b>650</b>	<b>20.5</b>

\*These are the minimum contact hrs. allocated. The contact hrs. may be increased by institute as per the need based on the content of subject.

IK Gujral Punjab Technical University  
Bachelor of Technology (B. Tech. 1<sup>st</sup> Year)

**Second Semester**

**Group-A**

**Contact Hrs. : 29**

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCH101-18	Basic Science Course	Chemistry-I	3	1	0	40	60	100	4
BTCH102-18	Basic Science Course	Chemistry-I (Lab)	0	0	3	30	20	50	1.5
BTAMXX-18	Basic Science Course	Maths-II	3*	1	0	40	60	100	4
BTPS101-18	Engineering Science Course	Programming for Problem Solving	3	0	0	40	60	100	3
BTPS102-18	Engineering Science Course	Programming for Problem Solving (Lab)	0	0	4	30	20	50	2
BTMPI01-18	Engineering Science Courses	Workshop / Manufacturing Practices	1	0	4	60	40	100	3
BTHU101-18	Humanities and Social Sciences including Management courses	English	2	0	0	40	60	100	2
BTHU102-18	Humanities and Social Sciences including Management courses	English (Lab)	0	0	2	30	20	50	1
BMPD201-18		Mentoring and Professional Development	0	0	2	Satisfactory / Un-Satisfactory			Non-Credit
<b>TOTAL</b>			<b>12</b>	<b>2</b>	<b>15</b>	<b>290</b>	<b>360</b>	<b>650</b>	<b>20.5</b>

\*These are the minimum contact hrs. allocated. The contact hrs. may be increased by institute as per the need based on the content of subject.

**Second Semester**

**Group-B**

**Contact Hrs.: 24**

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTPHXX-18	Basic Science Course	Physics	3	1	0	40	60	100	4
BTPHXX-18	Basic Science Course	Physics (Lab)	0	0	3	30	20	50	1.5
BTAMXX-18	Basic Science Course	Maths-II	3*	1	0	40	60	100	4
BTEE101-18	Engineering Science Course	Basic Electrical Engineering	3	1	0	40	60	100	4
BTEE102-18	Engineering Science Course	Basic Electrical Engineering (Lab)	0	0	2	30	20	50	1
BTME101-18	Engineering Science Courses	Engineering Graphics & Design	1	0	4	60	40	100	3
BMPD201-18		Mentoring and Professional Development	0	0	2	Satisfactory / Un-Satisfactory			Non-Credit
<b>TOTAL</b>			<b>10</b>	<b>3</b>	<b>11</b>	<b>220</b>	<b>280</b>	<b>500</b>	<b>17.5</b>

\*These are the minimum contact hrs. allocated. The contact hrs. may be increased by institute as per the need based on the content of subject.

- Note : 1. Mentoring and Professional Development will be offered as mandatory Non-Credit course. Mentoring and Professional Development course will have internal evaluation only.
2. This study scheme & syllabus is not applicable for B. Tech Chemical Engineering and B. Tech Petrochem & Petroleum Refinery Engineering. The study scheme and syllabus of B. Tech Chemical Engineering and B. Tech Petrochem & Petroleum Refinery Engineering is separately uploaded on University website.

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Director

I.K.Gujral-Punjab Technical University :  
Mohali Campus-1

197/264

I.K. Gujral Punjab Technical University, Kapurthala  
B. Tech, Computer Science & Engg.

Bachelor of Technology in Computer Science & Engineering

It is a Graduate (UG) Programme of 4 years duration (8 semesters)

Courses & Examination

Scheme: **Third Semester**

Course Code	Type of Course	Course Title	Hours per Week			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTES 301-18	Engineering Science Course	Digital Electronics	3	0	0	40	60	100	3
BTCS 301-18	Professional Core Courses	Data structure & Algorithms	3	0	0	40	60	100	3
BTCS 302-18	Professional Core Courses	Object Oriented Programming	3	0	0	40	60	100	3
BTAM 304-18	Basic Science Course	Mathematics-III	3	0	0	40	60	100	3
HSMC 101/102- 18	Humanities & Social Sciences Including Management Courses	Foundation Course in Humanities (Development of Societies/Philosophy)	2	1	0	40	60	100	3
BTES 302-18	Engineering Science Course	Digital Electronics Lab	0	0	2	30	20	50	1
BTCS 303-18	Professional Core Courses	Data structure & Algorithms Lab	0	0	4	30	20	50	2
BTCS 304-18	Professional Core Courses	Object Oriented Programming lab.	0	0	4	30	20	50	2
BTCS 305-18	Professional Core Courses	IT Workshop*	0	0	2	30	20	50	1
		Summer Institutional Training	0	0	0	0	0	0	Satisfactory/Un satisfactory
<b>Total</b>			<b>14</b>	<b>1</b>	<b>12</b>	<b>320</b>	<b>380</b>	<b>700</b>	<b>21</b>

\*Syllabus to be decided by respective institute internally. It may include latest technologies.

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Kapurthala

**Fourth Semester**

Course Code	Type of Course	Course Title	Hours per Week			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCS 401-18	Professional Core Courses	Discrete Mathematics	3	1	0	40	60	100	4
BTES 401-18	Engineering Science Course	Computer Organization & Architecture	3	0	0	40	60	100	3
BTCS 402-18	Professional Core Courses	Operating Systems	3	0	0	40	60	100	3
BTCS 403-18	Professional Core Courses	Design & Analysis of Algorithms	3	0	0	40	60	100	3
HSMC 122-18	Humanities & Social Sciences including Management Courses	Universal Human Values 2	2	1	0	40	60	100	3
EVS101-18	Mandatory Courses	Environmental Sciences	3	-	-	100	-	100	S/US
BTES 402-18	Engineering Science Course	Computer Organization & Architecture Lab	0	0	2	30	20	50	1
BTCS 404-18	Professional Core Courses	Operating Systems Lab	0	0	4	30	20	50	2
BTCS 405-18	Professional Core Courses	Design & Analysis of Algorithms Lab	0	0	4	30	20	50	2
<b>Total</b>			<b>15</b>	<b>2</b>	<b>10</b>	<b>290</b>	<b>360</b>	<b>650</b>	<b>24</b>

Students will take up summer internship of 4-6 weeks at industry or organizations of repute after 4<sup>th</sup> sem. that will be accredited in 5<sup>th</sup> semester.

  
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**Fifth Semester**

Course Code	Type of Course	Course Title	Hours per Week			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTES 501-18	Engineering Science	Enterprise Resource Planning	3	0	0	40	60	100	3
BTCS 501-18	Professional Core Courses	Database Management Systems	3	0	0	40	60	100	3
BTCS 502-18	Professional Core Courses	Formal Language & Automata Theory	3	0	0	40	60	100	3
BTCS 503-18	Professional Core Courses	Software Engineering	3	0	0	40	60	100	3
BTCS 504-18	Professional Core Courses	Computer Networks	3	0	0	40	60	100	3
BTCS XXX-18	Professional Elective	Elective-I	3	0	0	40	60	100	3
MC	Mandatory Courses	Constitution of India Essence of Indian Traditional Knowledge	2	-	-	100	-	100	S/US
BTCS 505-18	Professional Core Courses	Database Management Systems Lab	0	0	4	30	20	50	2
BTCS 506-18	Professional Core Courses	Software Engineering Lab	0	0	2	30	20	50	1
BTCS 507-18	Professional Core Courses	Computer Networks Lab	0	0	2	30	20	50	1
BTCS XXX-18	Professional Elective	Elective-I Lab	0	0	2	30	20	50	1
	Professional Training	Industrial *Training	-	-	-	60	40	100	S/US
<b>Total</b>			<b>20</b>	<b>0</b>	<b>10</b>	<b>460</b>	<b>440</b>	<b>900</b>	<b>23</b>

\* 4-6 weeks industrial training undertaken after 4<sup>th</sup> semester in summer vacations.

  
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Sixth Semester

Course Code	Type of Course	Course Title	Hours per Week			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCS 601-18	Professional Core Courses	Compiler Design	3	0	0	40	60	100	3
BTCS 602-18	Professional Core Courses	Artificial Intelligence	3	0	0	40	60	100	3
BTCS UUU-18	Professional Elective Courses	Elective-II	3	0	0	40	60	100	3
BTCS YYY-18	Professional Elective Courses	Elective-III	3	0	0	40	60	100	3
BTOE ***	Open Elective Courses	Open Elective-I	3	0	0	40	60	100	3
BTCS 603-18	Project	Project-I	0	0	6	60	40	100	3
BTCS 604-18	Professional Core Courses	Compiler Design Lab	0	0	2	30	20	50	1
BTCS 605-18	Professional Core Courses	Artificial Intelligence Lab	0	0	2	30	20	50	1
BTCS UUU-18	Professional Elective Courses	Elective-II lab	0	0	2	30	20	50	1
BTCS YYY-18	Professional Elective Courses	Elective-III lab	0	0	2	30	20	50	1
<b>Total</b>			<b>15</b>	<b>0</b>	<b>14</b>	<b>380</b>	<b>420</b>	<b>800</b>	<b>22</b>

  
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Seventh Semester / Eighth Semester

Course Code	Type of Course	Course Title	Hours per Week			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTCS 701-18	Professional Core Courses	Network Security and Cryptography	3	0	0	40	60	100	3
BTCS 702-18	Professional Core Courses	Data Mining and Data Warehousing	3	0	0	40	60	100	3
BTOE ***	Open Elective Courses	Open Elective-II	3	0	0	40	60	100	3
BTCS ZZZ-18	Professional Elective	Elective- IV	3	0	0	40	60	100	3
BTCS TTT-18	Professional Elective Courses	Elective-V	3	0	0	40	60	100	3
BTCS 703-18	Project	Project-II	0	0	12	120	80	200	6
BTCS ZZZ-18	Professional Elective	Elective- IV lab	0	0	2	30	20	50	1
BTCS TTT-18	Professional Elective	Elective- V lab	0	0	2	30	20	50	1
<b>Total</b>			<b>15</b>	<b>0</b>	<b>14</b>	<b>380</b>	<b>420</b>	<b>800</b>	<b>23</b>

Seventh Semester / Eighth Semester

Course Code	Course Title	Marks Distribution		Total Marks	Credits
		Internal	External		
BTCS 801-18	Semester Training	300	200	500	16

  
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LIST OF ELECTIVES

BTCS XXX-18: Elective-I

BTCS 510-18	Programming in Python
BTCS 513-18	Programming in Python Lab
BTCS 515-18	Computer Graphics
BTCS 518-18	Computer Graphics lab
BTCS 520-18	Web Technologies
BTCS 522-18	Web Technologies lab
BTCS 521-18	Computational Biology
BTCS 523-18	Computational Biology lab

BTCS UUU-18: Elective-II

BTCS 606-18	Simulation and Modelling
BTCS 607-18	Simulation and Modelling Lab
BTCS 608-18	Internet of Things
BTCS 609-18	Internet of Things lab
BTCS 610-18	Digital Image processing
BTCS 611-18	Digital Image processing lab
BTCS 612-18	Cloud computing
BTCS 613-18	Cloud computing lab

BTCS YYY-18: Elective-III

BTCS 614-18	Software Project Management
BTCS 615-18	Software Project Management Lab
BTCS 616-18	Data Science
BTCS 617-18	Data Science lab
BTCS 618-18	Machine Learning
BTCS 619-18	Machine Learning lab
BTCS 620-18	Mobile Application Development
BTCS 621-18	Mobile Application Development lab

BTCS ZZZ-18: Elective-IV

BTCS 704-18	Deep Learning
BTCS 705-18	Deep Learning Lab
BTCS 706-18	Distributed databases
BTCS 707-18	Distributed databases lab
BTCS 708-18	Computer Vision
BTCS 709-18	Computer Vision lab
BTCS 710-18	Agile Software Development
BTCS 711-18	Agile Software Development lab

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BTCS TTT-18: Elective-V

- BTCS 712-18 Blockchain Technologies
- BTCS 713-18 Blockchain Technologies Lab
- BTCS 714-18 Parallel Computing
- BTCS 715-18 Parallel Computing lab
- BTCS 716-18 Adhoc and Wireless sensor networks
- BTCS 717-18 Adhoc and Wireless sensor networks lab
- BTCS 718-18 Quantum Computing
- BTCS 719-18 Quantum Computing lab

Open electives offered by the department:

- BTCS301-18 Data Structures & Algorithms
- BTCS302-18 Object Oriented Programming
- BTES401-18 Computer organisation & Architecture
- BTCS402-18 Operating system
- BTCS501-18 Database Management System
- BTCS504-18 Computer Networks



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Mohali Campus-1

2024/264

1.3.1

## IKGPTU, Mohali Campus-II





# PTU

# I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY

## MOHALI CAMPUS II

ਆਈ. ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ

Metric No.		Weightage
1.3.1 Q <sub>1</sub> M	<p><i>Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum</i></p> <p>1.3.1 Institution integrates cross-cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum</p> <p>IKG PTU Mohali Campus - II strongly believes in the inculcation of human and social values, gender equality, professional ethics, promotion of environmental conservation, and sustainable development among the students and research scholars through teaching, research, and extra-curricular activities, NSS, and cultural events organized regularly in the campus. Campus programs have courses such as Environment Science, Sustainable Development, Human Values, constitutional law, and Professional Development and mentoring. Such courses are offered even under Ability Enhancement courses for students across the university to create awareness and impart basic ability to conceptualize the importance of environmental concerns; they are also sensitized about the ecology through extra-curricular activities like street plays, cultural events, etc. Constitutional law offers in Family/Labour Law, Women &amp; Children, Family Patriarchy/Gender Justice, Social Transformation, Human Rights, and Humanitarian Law. International Humanitarian Law, Peace-Building. Human Values course offers Human Behaviour, Ethics and CSR, Business Ethics and Corporate Governance. These are courses dealing with not just gender but other societal issues, including caste, class and race, human values, ethics, environmental issues as well as cultural aspects. A pool of teachers is available with expertise in critical areas related to Urban Environmental Management, Remote Sensing &amp; GIS, Town Planning, Social Sciences and Environment, Geography &amp; Environmental Studies.</p>	5

*Mukta Sharma*

Incharge  
I.K.Gujral-Punjab Technical University  
Mohali Campus-2

"Propelling Punjab to a prosperous knowledge Society"

**IK Gujral Punjab Technical University Mohali Campus-II**

Vill- Khunimajra, Sector-115, Mohali.Adjoining Govt. Polytechnic College Kharar- Landran Road

Phone no- 9478098123, Mobile no- 8360453299

E-mail- pitkhunnimajra@gmail.com Website:www.ptu.ac.in



1.3.1

## I.K. Gujral Punjab Technical University Jalandhar, Kapurthala

### Bachelor's of Architecture (B. Arch): Teaching Scheme 2019 (For Constituent Campus Only)

#### FIRST SEMESTER

Course Type	S. no	Course Code	Course Title	Load Allocations					Marks %		Credits	Duration of Uni. Exam (in hrs) /Viva- Voce
				L	Sem/Tut	P/FW	Stu	Total	Int	Ext		
PC	1	UC/BARCH-101/19	Architectural Design & Theory-I	1	-	-	5	06	60:40	6	06 + External Viva Voce	
	2	UC/BARCH-102/19	Architectural Drawing-I	1	-	-	3	04	60:40	4	03	
	3	UC/BARCH-103/19	Architectural Graphics-I	1	-	-	2	03	60:40	3	03	
	4	UC/BARCH-104/19	History of Architecture - I	2	-	-	-	02	40:60	2	03	
BS & AE	5	UC/BARCH-105/19	Building Construction & Materials-I	1	-	-	4	05	60:40	5	03	
	6	UC/BARCH-106/19	Structure Systems-I	1	1	-	-	02	100	2	No Exam only Internal Viva-Voce	
SEC	7	UC/BARCH-107/19	Workshop-I	-	-	2	-	02	100	1	No Exam only Internal Viva-Voce	
	8	UC/BTHU-101/18	Communicative English	2	-	-	-	02	40:60	2	03	
	9	UC/BTHU-102/18	Communicative Skill Laboratory	-	-	2	-	02	100	1	No Exam only External Viva Voce	
	10	UC/HSMC-122/18	Human Values and Professional Ethics	1	2	-	-	03	40:60	2	03	
<b>Total</b>				10	3	4	14	31		28		

Abbreviation Used in the teaching scheme			
PC	Professional Core	L	Lecture
BS & AE	Building Science & Applied Engineering	Sem/Tut	Seminar/ Tutorial
PE	Professional Electives	P/FW	Practical/ Field Work
OE	Open Elective	Stu	Studio
PAECC	Professional Ability Enhancement Compulsory	Int	Internal
SEC	Skill Enhancement Courses	Ext	External

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 I.K.G.P.T.U  
 Mohali Campus-II

# I.K. Gujral Punjab Technical University Jalandhar, Kapurthala

## Bachelor's of Architecture (B. Arch): Teaching Scheme 2019 (For Constituent Campus Only)

### SECOND SEMESTER

Course Type	S. no	Course Code	Course Title	Load Allocations					Marks	Credits	Duration of Univ. Exam(in hrs) / Viva-Voce
				L	Sem/Tut	P/FW	Stu	Total	Int : Ext		
PC	1	UC/BARCH-201/19	Architectural Design -II	1	-	-	5	06	60:40	6	06 + External Viva-Voce
	2	UC/BARCH-202/19	Architectural Drawing-II	1	-	-	3	04	60:40	4	03
	3	UC/BARCH-203/19	Architectural Graphics-II	1	-	-	2	03	60:40	3	03
	4	UC/BARCH-204/19	History of Architecture-II	2	-	-	-	02	40:60	2	03
BS & AE	5	UC/BARCH-205/19	Building Construction & Materials-II	1	-	-	4	05	60:40	5	03
	6	UC/BARCH-206/19	Theory of Structure	2	1	-	-	03	40:60	3	03
PAECC	7	UC/BARCH-207/19	Theory of Design- I	2	-	-	-	02	40:60	2	03
SEC	8	UC/BARCH-208/19	Workshop-II	-	-	2	-	02	100	1	No Exam only Internal Viva-Voce
	9	UC/EVSC- 101/19	Environmental Science	2	-	-	-	02	40:60	2	03
	10	UC/BARCH-210/19	Mentoring & Professional Development- I	-	-	2	-	02	100	Non Credit	No Exam
	<b>Total</b>				12	1	4	14	31		28

Note:-

**\*Educational Tour-I/ Summer Training-I / Vacation Assignment-I**

- Educational Tour of 1-2 week duration (during or after) the First year of studies must be undertaken.
- Summer Training/ Vacation assignment to be given based on UC/BARCH-210/19. The marking of the same will be done in the Third semester course code UC/BARCH-308/19.

Director  
I.K.G.P.T.U  
Mohali Campus-II

*(Signature)*

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## Bachelor's of Architecture (B. Arch): Teaching Scheme 2019 (For Constituent Campus Only)

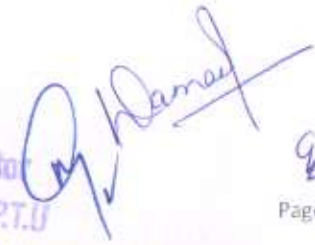
### THIRD SEMESTER

Course Type	S. no	Course Code	Course Title	Load Allocations					Marks	Credits	Duration of Univ. Exam(in hrs) / Viva-Voce
				L	Sem/Tut	P/FW	Stu	Total	Int : Ext		
PC	1	UC/BARCH-301/19	Architectural Design -III	1	-	-	5	06	60:40	6	06 + External Viva-Voce
BS &AE	2	UC/BARCH-302/19	Building Construction & Materials-III	1	-	-	3	04	60:40	4	04
	3	UC/BARCH-303/19	Structure Systems-II	1	-	-	1	02	100	2	No Exam only External Viva Voce
	4	UC/BARCH-304/19	Structure Design-I	2	2	-	-	04	40:60	3	03
	5	UC/BARCH-305/19	Surveying & Leveling	2	-	2	-	04	40:60	3	03
PAECC	6	UC/BARCH-306/19	Climate & Architecture - I	2	2	-	-	04	40:60	3	03
SEC	7	UC/BARCH-307/19	Computer Application- I	1	-	2	-	03	100	2	No Exam only External Viva Voce
	8	UC/BARCH-308/19	*Educational Tour -I/ Summer Training-I/ Vacation Assignment-I	-	-	-	-	-	100	1	Internal Assessment /Viva-Voce
<b>Total</b>				10	4	4	9	27		24	

Note:-

\*Educational Tour-I/ Summer Training-I / Vacation Assignment-I

- Third semester course code UC/BARCH-308/19 is carried out in the intervening period of Second and Third Semester.
- The Summer Training-I/ Vacation Assignments-I to be evaluated on the basis of work submitted in the starting of Third semester only.

  
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# I.K. Gujral Punjab Technical University Jalandhar Kapurthala

## Bachelor's of Architecture (B. Arch): Teaching Scheme 2019 (For Constituent Campus Only)

### FOURTH SEMESTER

Course Type	Sr. no	Course Code	Course Title	Load Allocations					Marks		Credits	Duration of Univ. Exam(in hrs) / Viva-Voce
				L	Sem/Tut	P/FW	Stu	Total	Int : Ext			
PC	1	UC/BARCH-401/19	Architectural Design -IV	1	-	-	5	06	60:40	6	06 + External Viva Voce	
	2	UC/BARCH-402/19	History of Architecture-III	2	-	-	-	02	40:60	2		
BS & AE	3	UC/BARCH-403/19	Building Construction & Materials-IV	1	-	-	3	04	60:40	4	03	
	4	UC/BARCH-404/19	Structure Design-II	2	2	-	-	04	40:60	4	03	
	5	UC/BARCH-405/19	Building Services-I	2	1	-	-	03	40:60	3	03	
PAECC	6	UC/BARCH-406/19	Climate & Architecture-II	2	1	-	-	03	40:60	3	03	
SEC	7	UC/BARCH-407/19	Computer Application-II	1	-	2	-	03	100	2	No Exam only External Viva Voce	
	8	UC/BARCH-408/19	Mentoring and Professional Development-II	-	-	2	-	02	100	Non-Credit	No Exam	
	9	UC/BARCH-409/19	Constitutional Law	2	-	-	-	02	40:60	2	03	
			<b>Total</b>	13	4	4	8	29		26		

Note:-

\*Educational Tour-II/ Summer Training-II / Vacation Assignment-II

- Educational Tour/Documentation project of 1-2 week duration (during or after) the Second year of studies must be undertaken.
- Summer Training/ Vacation assignment to be given based on UC/BARCH-408/19. The marking of the same will be done in the Fifth semester course code UC/BARCH-514/19.

  
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## Bachelor's of Architecture (B. Arch): Teaching Scheme 2019 (For Constituent Campus Only)

### FIFTH SEMESTER

Course Type	Sr. no	Course Code	Course Title	Load Allocations					Marks Int : Ext	Credits	Duration of Univ. Exam(in hrs) / Viva-Voce
				L	Sem/ Tut	P/FW	Stu	Total			
PC	1	UC/BARCH-501/19	Architectural Design -V	1	-	-	5	06	60:40	6	12 (in 2 days) + External Viva Voce
BS &AE	2	UC/BARCH-502/19	Building Construction & Materials-V	1	-	-	3	04	60:40	4	03
	3	UC/BARCH-503/19	Structure Systems-III	1	1	-	-	02	100	2	No Exam only External Viva Voce
	4	UC/BARCH-504/19	Structure Design-III	2	2	-	-	04	40:60	4	03
	5	UC/BARCH-505/19	Building Services-II	2	1	-	-	03	40:60	3	03
PAECC	6	UC/BARCH-506/19	Theory of Design-II	2	1	-	-	03	40:60	3	03
	7	UC/BARCH-507/19	Landscape Architecture	2	1	-	-	03	40:60	3	03
PE	8	UC/BARCH-508 - 510/19	Elective- I	2	1	-	-	03	40:60	3	03
OE	9	UC/BARCH- 511 - 513/19	Open Elective- I /Mooc /Swayam	2	-	-	-	02	40:60	2	03
SEC	10	UC/BARCH-514/19	*Educational Tour II/ Summer Training-II/ Vacation Assignment-II	-	-	-	-	-	100	1	Internal Assessment /Viva-Voce
			<b>Total</b>	15	7		8	30		31	

Note:-

**\*Educational Tour-II/ Summer Training-II / Vacation Assignment-II**

- Fifth semester course code UC/BARCH-514/19 is carried out in the intervening period of Fourth and Fifth Semester.
- The Summer Training-I/ Vacation Assignments-I to be evaluated on the basis of work submitted in the starting of Fifth semester only.

PE /Elective- I (Choose any one from the given choices)	
UC/BARCH-508/19	Green Buildings & Rating System
UC/BARCH-509/19	Hill Architecture
UC/BARCH-510/19	Architecture Acoustics

Open Elective-I (Choose any one from the given choices)	
UC/BARCH-511/19	Sociology for Architects
UC/BARCH-512/19	Health Education- I
UC/BARCH-513/19	Creative Writing

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# I.K. Gujral Punjab Technical University Jalandhar Kapurthala

## Bachelor's of Architecture (B. Arch): Teaching Scheme 2019 (For Constituent Campus Only)

### SIXTH SEMESTER

Course Type	Sr.no	Course Code	Course Title	Load Allocations					Marks Int : Ext	Credits	Duration of Univ. Exam(in hrs) / Viva-Voce
				L	Sem/ Tut	P/FW	Stu	Total			
PC	1	UC/BARCH-601/19	Architectural Design -VI	1	-	-	5	06	60:40	6	12 (in 2 days) + External Viva Voce
	2	UC/BARCH-602/19	History of Architecture-IV	2	-	-	-	02	40:60	2	03
	3	UC/BARCH-603/19	Estimating Costing & Specifications	2	1	-	-	03	40:60	3	03
	4	UC/BARCH-604/19	Architecture Legislation	2	-	-	-	02	40:60	2	03
BS & AE	5	UC/BARCH-605/19	Building Construction & Materials-VI	1	-	-	3	04	60:40	4	03
	6	UC/BARCH-606/19	Structure Design -IV (Project)	2	2	-	-	04	40:60	4	No Exam only External Viva
	7	UC/BARCH-607/19	Building Services-III	2	-	-	-	02	40:60	2	03
PAECC	8	UC/BARCH-608/19	Climate & Architecture-III (Sustainable Design)	2	-	-	-	02	40:60	2	03
PE	9	UC/BARCH-609-611/19	Elective- II	2	1	-	-	03	40:60	3	03
OE		UC/BARCH-612-614/19	Open Elective- II/Mooc Swayam	2	-	-	-	02	40:60	2	03
SEC	10	UC/BARCH-615/19	Mentoring and Professional Development-III	2	-	-	-	02	100	Non- Credit	No Exam
<b>Total</b>				20	4		8	32		30	

Note:-

- Educational Tour of 2 week duration (during or after) the Third year of studies must be undertaken in the Intervening period of Sixth and Seventh Semester.
- The MOOC coordinator appointed by the department will display the list of MOOC in every semester as per major domain of MOOC courses mentioned in the preamble. The students are required to submit the certificate from concerned imparting agency after successful completing of the course.

PE /Elective- II (Choose any one from the given choices)	
UC/BARCH-609/19	Sustainable Cities and Communities
UC/BARCH-610/19	Low-Cost effective Building Design
UC/BARCH-611/19	Interior Design

OE /Elective- II (Choose any one from the given choices)	
UC/BARCH-612/19	Psychology for Architects
UC/BARCH-613/19	Health Education-II
UC/BARCH-614/19	Lighting Design

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SEVENTHSEMESTER

Course Type	Sr. no	Course Code	Course Title	Duration	Marks	Credits	Duration of Univ. Exam(in hrs) / Viva-Voce
					Int : Ext		
PAECC	1	UC/BARCH- 701/19	Practical Training Programme	One Full Semester	350:150	18	No Exam only External Viva-Voce
Total						18	

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**Bachelor's of Architecture (B. Arch): Teaching Scheme 2019 (For Constituent Campus Only)**

**EIGHTH SEMESTER**

Course Type	Sr. no	Course Code	Course Title	Load Allocations					Marks	Credits	Duration of Univ. Exam(in hrs) / Viva-Voce
				L	Sem/Tut	P/FW	Stu	Total	Int : Ext		
PC	1	UC/BARCH-801/19	Architectural Design -VII	2	-	-	10	12	60:40	12	No University Exam only External Viva Voce based upon the Studio Assignments
BS & AE	2	UC/BARCH-802/19	Building Construction & Materials - VII	2	-	-	4	6	60:40	6	
	3	UC/BARCH-803/19	Urban Design	2	-	-	3	5	40:60	5	03
PAECC	4	UC/BARCH-804/19	Housing	2	1	-	-	3	40:60	3	03
	5	UC/BARCH-805/19	High Rise Building	2	1	-	-	3	40:60	3	03
PE	6	UC/BARCH-806-808/19	Elective-III	2	1	-	-	3	40:60	3	03
<b>Total</b>				12	3	-	17	32		32	

PE /Elective- III (Choose any one from the given choices)	
UC/BARCH-806/19	Architectural Conservation
UC/BARCH-807/19	Sustainable Architecture
UC/BARCH-808/19	Building Maintenance

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### Bachelor's of Architecture (B. Arch): Teaching Scheme 2019 (For Constituent Campus Only)

#### NINTH SEMESTER

Course Type	S. no	Course Code	Course Title	Load Allocations					Marks	Credits	Duration of Univ. Exam(in hrs) / Viva-Voce
				L	Sem/Tut	P/FW	Stu	Total	Int : Ext		
PC	1	UC/BARCH- 901/19	Architectural Design -VIII	2	-	-	10	12	60:40	12	No University Exam only External Viva Voce based upon the Studio Assignments
PAECC	2	UC/BARCH -902/19	Building Construction & Materials-VIII	2	-	-	4	6	60:40	6	
		3	UC/BARCH- 903/19	Town Planning	2	1	-	-	3	40:60	3
BS & AE	4	UC/BARCH-904/19	Building Economics	2	1	-	-	3	40:60	3	03
PE	5	UC/BARCH- 905-907/19	Elective-IV	2	1	-	-	3	40:60	3	03
	6	UC/BARCH- 908-910/19	Elective-V	2	1	-	-	3	40:60	3	03
<b>Total</b>				12	4	-	14	30		30	

PE /Elective- IV (Choose any one from the given choices)	
UC/BARCH-905/19	Vernacular Architecture
UC/BARCH-906/19	Principles of Human Settlement
UC/BARCH-907/19	Recent Heritage

PE /Elective- IV (Choose any one from the given choices)	
UC/BARCH-908/19	Traffic and Transportation
UC/BARCH-909/19	Geomatics Techniques for Architects
UC/BARCH-910/19	Research Methodology

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## Bachelor's of Architecture (B. Arch): Teaching Scheme 2019 (For Constituent Campus Only)



### TENTH SEMESTER

Course Type	Sr. no	Course Code	Course Title	Load Allocations					Marks	Credits	Duration of Univ. Exam(in hrs) / Viva-Voce
				L	Sem/Tut	P/FW	Stu	Total	Int : Ext		
PC	1	UC/BARCH-1001/19	Architectural Design (Thesis Project) -IX	-	-	-	24	24	300:250	24	No University Exam The External marks Shall be Awarded through External jury Viva Voce
PAECC	2	UC/BARCH-1002/19	Construction Management	2	1	-	-	3	40:60	3	03
	3	UC/BARCH-1003/19	Professional Practice	2	1	-	-	3	40:60	3	03
	4	UC/BARCH-1004/19	Disaster Management	2	1	-	-	3	40:60	3	03
<b>Total</b>				6	3	-	20	33		33	

Note:-

- Students must score qualifying marks in the Course Code UC/BARCH-1001/19 for being eligible to obtain a degree in B. Architecture.

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**Course**

Architecture

**Branch**

B.Architecture

**Semester**

1

**Scheme**

B.Architecture, Semester-1, 2021

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Sch. ID	Sub.Code /MCode	Subject	Type	Int	Ext	T/P	Credits
3758	BARCH-101/21 (91468)	Architectural Design & Theory-I	Compulsory	60	40	P	5.00
3758	BARCH-102/21 (91469)	Architectural Drawing-I	Compulsory	60	40	T	4.00
3758	BARCH-103/21 (91470)	Architectural Graphics-I	Compulsory	60	40	T	3.00
3758	BARCH-104/21 (91471)	Workshop-I	Compulsory	100	0	P	1.00
3758	BARCH-105/21 (91472)	Building Construction & Materials-I	Compulsory	60	40	T	4.00
3758	BARCH-106/21 (91473)	Theory of Structure- I	Compulsory	40	60	T	3.00
3758	BARCH-107/21 (91477)	Life skills-I	Compulsory	1	0	P	0.00
3758	BTHU-101/18 (91474)	Communicative English	Compulsory	40	60	T	2.00
3758	BTHU-102/18 (91475)	Communicative Skill Laboratory	Compulsory	60	40	P	1.00
3758	HSMC-122/18 (91476)	Human Values and Professional Ethics	Compulsory	40	60	T	3.00

**Minimum and Maximum subjects**

Type of Subjects	Min. Subjects	Max. Subjects
Compulsory	10	10

**List of Branch(s) in which applicable also**

Branch	Start Sem.	End Sem.
2 / B Architecture	1	10

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**Course**

Architecture

**Branch**

B.Architecture

**Semester**

2

**Scheme**

B.Architecture,Semester-2,2021

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**List of Subjects**

Sch. ID	Sub.Code /MCode	Subject	Type	Int	Ext	T/P	Credits
3801	BARCH-201/21 (91588)	Architectural Design-II	Compulsory	60	40	P	5.00
3801	BARCH-202/21 (91589)	Architectural Drawing-II	Compulsory	60	40	T	4.00
3801	BARCH-203/21 (91590)	Architectural Graphics-II	Compulsory	60	40	T	3.00
3801	BARCH-204/21 (91591)	History of Architecture-I	Compulsory	40	60	T	3.00
3801	BARCH-205/21 (91592)	Workshop-II	Compulsory	100	0	P	1.00
3801	BARCH-206/21 (91593)	Building Construction and Materials-II	Compulsory	60	40	T	4.00
3801	BARCH-207/21 (91594)	Theory of Design-I	Compulsory	40	60	T	2.00
3801	BARCH-208/21 (91596)	Computer Application-I	Compulsory	60	40	P	2.00
3801	BARCH-209/21 (91597)	Mentoring and Professional Development-I	Compulsory	1	0	P	0.00

**Minimum and Maximum subjects**

Type of Subjects	Min. Subjects	Max. Subjects
Compulsory	9	9

**List of Branch(s) in which applicable also**

Branch	Start Sem.	End Sem.
2 / B.Architecture	1	10



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*DK*

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**Course**

Architecture

**Branch**

B.Architecture

**Semester**

3

**Scheme**

B.Architecture, Semester-3, 2021

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Sch. ID	Sub.Code /MCode	Subject	Type	Int	Ext	T/P	Credits
4156	BARCH301-21 (92428)	Architecture Design-III	Compulsory	60	40	P	5.00
4156	BARCH302-21 (92429)	Architectural Presentation-I	Compulsory	100	0	P	2.00
4156	BARCH303-21 (92430)	History of Architecture-II	Compulsory	40	60	T	3.00
4156	BARCH304-21 (92431)	Building Construction-III	Compulsory	60	40	T	4.00
4156	BARCH305-21 (92432)	Structure Design-I	Compulsory	40	60	T	3.00
4156	BARCH306-21 (92433)	Structure System-I	Compulsory	100	0	P	2.00
4156	BARCH307-21 (92434)	Theory of Design-II	Compulsory	40	60	T	3.00
4156	BARCH308-21 (92435)	Climate and Architecture-I	Compulsory	40	60	T	2.00
4156	BARCH309-21 (92436)	Computer Application-II	Compulsory	60	40	P	2.00
4156	BARCH310-21 (92437)	4 Week Summer Training	Compulsory	50	0	P	0.00

**Minimum and Maximum subjects**

Type of Subjects	Min. Subjects	Max. Subjects
Compulsory	10	10

**List of Branch(s) in which applicable also**

Branch	Start Sem.	End Sem.
2 / B.Architecture	1	10

  
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Course

Architecture

Branch

B.Architecture

Semester

4

Scheme

B.Architecture,Semester-4,2021

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List of Subjects

Sch. ID	Sub.Code /MCode	Subject	Type	Int	Ext	T/P	Credits
4302	BARCH401-21 (93368)	Architectural Design-IV	Compulsory	60	40	T	6.00
4302	BARCH402-21 (93369)	Building Construction-IV	Compulsory	60	40	T	4.00
4302	BARCH403-21 (93370)	History of Architecture-III	Compulsory	40	60	T	3.00
4302	BARCH404-21 (93371)	Structure System-III	Compulsory	100	0	P	2.00
4302	BARCH405-21 (93372)	Structure Design-II	Compulsory	40	60	T	3.00
4302	BARCH406-21 (93373)	Building Services-I	Compulsory	40	60	T	2.00
4302	BARCH407-21 (93374)	Climate and Architecture-II	Compulsory	40	60	T	2.00
4302	BARCH408-21 (93375)	Building Materials-I	Compulsory	40	60	T	2.00
4302	BARCH409-21 (93376)	Mentoring and Professional Development-II	Compulsory	50	0	P	0.00

Minimum and Maximum subjects

Type of Subjects	Min. Subjects	Max. Subjects
Compulsory	9	9

List of Branch(s) in which applicable also

Branch	Start Sem.	End Sem.
2 / B.Architecture	1	10

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1.3.1

## IKGPTU, Hoshiarpur Campus



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

#### IKG-PTU Campus, Hoshiarpur

#### The Department of Mechanical Engineering

- The university has been working for the overall development of the students. Various courses, namely, Human values and Professional Ethics, Environmental Studies have been introduced as mandatory courses for all programmes of engineering to address issues as Gender Equality, Sustainability, Human Values and Ethics.
- Courses on Disaster management, Non-Conventional energy resources etc, are offered as open electives. These courses help students gain a worldview of the self, society and profession. It emphasizes on holistic understanding of ethical human conduct, trustful and mutually satisfying human behaviour.
- The university also conducts Blood Donation Camps to promote National Integrity, Human values, Communal Harmony.
- Environment and Sustainability Environmental Studies is an interdisciplinary course. The course is offered as a mandatory course for all the U.G programs. The course includes the study of natural resources with emphasis on renewable energy resources, the importance of conserving the present ecosystem, promoting biodiversity, perils of environmental pollution and raising awareness on environmental and social issues.
- A course on “Non-conventional Energy sources” is offered to explain the generation of electricity from various non-conventional sources of energy such as solar, wind, ocean and geothermal energies.
- International Women’s Day is celebrated with active student participation. Also, special talks are arranged to encourage women to explore opportunities in science and technology. The student counsellor counsels’ students on gender equality and other related issues.
- Following subjects has been introduced in the syllabus for developing the above said morals in the students:

Sr. No.	Name of Subject	Subject Code	Course Name	Semester
1.	Environmental Science	EVS101-18	B.Tech.	4 <sup>th</sup>
2.	Management & Engineering	BTME504-18	B.Tech.	5 <sup>th</sup>

  
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	Economics			
3.	Essence of Indian Knowledge Tradition	BTMC102-18	B.Tech.	5 <sup>th</sup>
4.	4 Weeks Industrial Training	BTME409-18	B.Tech.	5 <sup>th</sup>
5.	Non-Conventional Energy Resources	BTME615-18	B.Tech.	6 <sup>th</sup>
6.	6 Months Industrial Training	BTME-801	B.Tech.	8 <sup>th</sup>

### The Department of Computer Science & Engineering

The subjects relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability are integral part of university curriculum. Details of these subjects is as follows:

Sr. No	Subject Name	Semester	Teaching load per week (Hrs)
1	Mentoring and Professional Development	1 <sup>st</sup>	02
2	Mentoring and Professional Development	2 <sup>nd</sup>	02
3	Foundation Course in Humanities (Development of Societies/Philosophy)	3 <sup>rd</sup>	03
4	Universal Human Values 2	4 <sup>th</sup>	03
5	Environmental Sciences	4 <sup>th</sup>	03

### Department of Civil Engg

Moral Values, Human Values & Professional Ethics: Twenty one days Induction programme related to values and ethics is an integral part of the curriculum of the first year. The compulsory course “Universal Human values & Professional Ethics” for 2nd year & open elective course “Understanding the Human Being Comprehensively-Human Aspirations and Its Fulfilment” for the final year are important part of Curriculum. The common course “Industrial Sociology” and Industrial Psychology are basic part of curriculum of third year. Students will be able to understand the importance of ethics and values in their personal, social & professional life after studying these courses. These subjects provide free


  
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environment for inculcating values and developing ethical competence among the students. It is in response to a long- felt and urgent need to integrate value education with decision making skills in their personal, social and professional life. College celebrates days of National and International importance as Republic day, Women’s day, Independence Day, Teacher`s day, Human Right Day, International Yoga Day etc. These celebrations nurture the moral, ethical and social values in the students.

S.No	Description of critical issue	Title of course wherein the issue is addressed	Remarks
1	Environment sustainability	EVS, Environment Engg, Geo Environment, Sustainable Construction Methods, EIA and LCA	Role of Engineers in the construction of buildings, dams, expressways & infrastructure projects in the 21st Century. Importance of interdisciplinary approach in Engineering To correlate the human population growth and its trend to the environmental degradation and develop the awareness about his/her role towards environmental protection and prevention
2	Professional ethics	Soft Skills, Management 1: Organisational Behaviour, Professional ethics and law	To introduce the students to skills necessary for getting, keeping and being successful in a profession. To Develop Project Management aspect and Entrepreneurship Skills
3	Human values	Human Values	To create awareness on professional ethics and Human Values.


  
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**I. K. Gujral Punjab Technical University  
Bachelor of Computer Applications (BCA)**

**Recommended Readings:**

1. *Fluency in English* - Part II, Oxford University Press, 2006.
  2. *Business English*, Pearson, 2008.
  3. *Practical English Usage*. Michael Swan. OUP. 1995.
  4. *Communication Skills*. Sanjay Kumar and Pushp Lata. Oxford University Press. 2011.
  5. *Exercises in Spoken English*. Parts. I-III. CIEFL, Hyderabad. Oxford University Press
- 

**Course Code: HVPE101-18**

**Course Name: Human Values, De-addiction and Traffic Rules**

<b>Program:</b> BCA	<b>L: 3 T: 0 P: 0</b>
<b>Branch:</b> Computer Applications	<b>Credits: 3</b>
<b>Semester:</b> 1 <sup>st</sup>	<b>Contact hours:</b> 33 hours
<b>Internal max. marks:</b> 40	<b>Theory/Practical:</b> Theory
<b>External max. marks:</b> 60	<b>Duration of end semester exam (ESE):</b> 3hrs
<b>Total marks:</b> 100	<b>Elective status:</b> Ability Enhancement

**Prerequisite: -NA-**

**Co requisite: -NA-**

**Additional material required in ESE: -NA-**

**Course Outcomes:**

<b>CO#</b>	<b>Course outcomes</b>
CO1	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.
CO2	To facilitate the development of a Holistic perspective among students towards life, profession and happiness, based on a correct understanding of the Human reality and the rest of Existence. Such a holistic perspective forms the basis of Value based living in a natural way.
CO3	To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behavior and mutually enriching interaction with Nature.

Note: This course is intended to provide a much needed orientational input in Value Education to the young enquiring minds.

<b>Detailed Contents</b>	<b>Contact hours</b>
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<b>Unit-I</b>	
<b>Course Introduction - Need, Basic Guidelines, Content and Process for Value Education</b>	8

  
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<ol style="list-style-type: none"><li>1. Understanding the need, basic guidelines, content and process for Value Education</li><li>2. Self-Exploration–what is it? - its content and process; ‘Natural Acceptance’ and Experiential Validation- as the mechanism for self-exploration</li><li>3. Continuous Happiness and Prosperity- A look at basic Human Aspirations</li><li>4. Right understanding, Relationship and Physical Facilities- the basic requirements for fulfillment of aspirations of every human being with their correct priority</li><li>5. Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario</li><li>6. Method to fulfill the above human aspirations: understanding and living in harmony at various levels</li></ol>	
<p><b>Unit-II</b></p> <p><b>Understanding Harmony in the Human Being - Harmony in Myself!</b></p> <ol style="list-style-type: none"><li>1. Understanding human being as a co-existence of the sentient ‘I’ and the material ‘Body’</li><li>2. Understanding the needs of Self (‘I’) and ‘Body’ - <i>Sukh</i> and <i>Suvidha</i></li><li>3. Understanding the Body as an instrument of ‘I’ (I being the doer, seer and enjoyer)</li><li>4. Understanding the characteristics and activities of ‘I’ and harmony in ‘I’</li><li>5. Understanding the harmony of I with the Body: <i>Sanyam</i> and <i>Swasthya</i>; correct appraisal of Physical needs, meaning of Prosperity in detail</li><li>6. Programs to ensure <i>Sanyam</i> and <i>Swasthya</i> - Practice Exercises and Case Studies will be taken up in Practice Sessions.</li></ol>	8

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<p><b>Unit-III</b></p> <p><b>Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship</b></p> <ol style="list-style-type: none"><li>1. Understanding harmony in the Family- the basic unit of human interaction</li><li>2. Understanding values in human-human relationship; meaning of <i>Nyaya</i> and program for its fulfillment to ensure <i>Ubhay-tripti</i>; Trust (<i>Vishwas</i>) and Respect (<i>Samman</i>) as the foundational values of relationship</li><li>3. Understanding the meaning of <i>Vishwas</i>; Difference between intention and competence</li><li>4. Understanding the meaning of <i>Samman</i>, Difference between respect and differentiation; the other salient values in relationship</li></ol>	6
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<p>5. Understanding the harmony in the society (society being an extension of family): <i>Samadhan, Samridhi, Abhay, Sah-astitva</i> as comprehensive Human Goals</p> <p>6. Visualizing a universal harmonious order in society- Undivided Society (<i>Akhand Samaj</i>), Universal Order (<i>Sarvabhaum Vyawastha</i>)- from family to world family! - Practice Exercises and Case Studies will be taken up in Practice Sessions.</p>	
<p><b>Unit-IV</b></p> <p><b>Understanding Harmony in the Nature and Existence - Whole existence as Co-existence</b></p> <p>1. Understanding the harmony in the Nature</p> <p>2. Interconnectedness and mutual fulfillment among the four orders of nature- recyclability and self-regulation in nature</p> <p>3. Understanding Existence as Co-existence (<i>Sah-astitva</i>) of mutually interacting units in all-pervasive space</p> <p>4. Holistic perception of harmony at all levels of existence - Practice Exercises and Case Studies will be taken up in Practice Sessions.</p>	5
<p><b>Unit-V</b></p> <p><b>Implications of the above Holistic Understanding of Harmony on Professional Ethics</b></p> <p>1. Natural acceptance of human values</p> <p>2. Definitiveness of Ethical Human Conduct</p> <p>3. Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order</p> <p>4. Competence in professional ethics:</p> <p style="margin-left: 40px;">a) Ability to utilize the professional competence for augmenting universal human order,</p> <p style="margin-left: 40px;">b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems,</p> <p style="margin-left: 40px;">c) Ability to identify and develop appropriate technologies and management patterns for above production systems.</p> <p>5. Case studies of typical holistic technologies, management models and production systems</p> <p>6. Strategy for transition from the present state to Universal Human Order:</p> <p style="margin-left: 40px;">a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers</p> <p style="margin-left: 40px;">b) At the level of society: as mutually enriching institutions and organizations.</p>	6

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**Text Book**

1. R R Gaur, R Sangal, G P Bagaria, 2009, *A Foundation Course in Value Education*.

**Reference Books**

1. Ivan Illich, 1974, *Energy & Equity*, The Trinity Press, Worcester, and Harper Collins, USA.
2. E.F. Schumacher, 1973, *Small is Beautiful: a study of economics as if people mattered*, Blond & Briggs, Britain.
3. A Nagraj, 1998, *Jeevan Vidya ek Parichay*, Divya Path Sansthan, Amarkantak.
4. Sussan George, 1976, *How the Other Half Dies*, Penguin Press. Reprinted 1986, 1991.
5. PL Dhar, RR Gaur, 1990, *Science and Humanism*, Common wealth Publishers.
6. A.N. Tripathy, 2003, *Human Values*, New Age International Publishers.
7. Subhas Palekar, 2000, *How to practice Natural Farming*, Pracheen (Vaidik) Krishi Tantra Shodh, Amravati.
8. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, *Limits to Growth – Club of Rome’s report*, Universe Books.
9. E G Seebauer & Robert L. Berry, 2000, *Fundamentals of Ethics for Scientists & Engineers*, Oxford University Press
10. M Govindrajran, S Natrajan & V.S. Senthil Kumar, *Engineering Ethics (including Human Values)*, Eastern Economy Edition, Prentice Hall of India Ltd.
11. B P Banerjee, 2005, *Foundations of Ethics and Management*, Excel Books.
12. B L Bajpai, 2004, *Indian Ethos and Modern Management*, New Royal Book Co., Lucknow. Reprinted 2008.

**Relevant CDs, Movies, Documentaries & Other Literature:**

1. Value Education website, <http://uhv.ac.in>
2. Story of Stuff, <http://www.storyofstuff.com>
3. Al Gore, An Inconvenient Truth, Paramount Classics, USA
4. Charlie Chaplin, Modern Times, United Artists, USA
5. IIT Delhi, Modern Technology – the Untold Story

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**Course Code: HVPE102-18**

**Course Name: Human Values, De-addiction and Traffic Rules (Lab/ Seminar)**

<b>Program:</b> BCA	<b>L: 0 T: 0 P: 1</b>
<b>Branch:</b> Computer Applications	<b>Credits:</b> 1
<b>Semester:</b> 1 <sup>st</sup>	<b>Contact hours:</b> 1 hour per week
<b>Internal max. marks:</b> 25	<b>Theory/Practical:</b> Practical
<b>External max. marks:</b> 0	<b>Duration of end semester exam (ESE):</b> 3hrs





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**Total marks: 25**

**Elective status: Ability Enhancement**

  
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