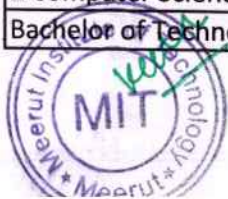


1.3.1 List of Courses integrating Cross Cutting issues

Program	Program Code	Name of Course	Course Code
B.Sc Agriculture	AG	Human Values Ethics	AG-210
B.Sc Agriculture	AG	Agriculture Heritage	AG-109
Bachelor of Commerce	C	Food Nutrition & Hygiene	Z010101T
Bachelor of Commerce	C	First Aid & Health	Z020201
Bachelor of Commerce	C	Human Values and Environmental Studies	Z030301
Bachelor of Commerce	C	Physical Education & Yoga	Z040401
Bachelor of Business Administration	NA	Environmental Studies	OO8
B.Sc Hons.(Chemistry)	CUBH58	Environmental Studies	BCH-204
Bachelor of Technology (CIVIL ENGINEERING)	00	Universal Human Values	BVE401
Bechlor of Technology (Electronics & Communication Engineering)	31	Universal Human Value and Professional Ethics	BVE-301
Bechlor of Technology (Electronics & Communication Engineering)	31	Constitution of India, Law and Engineering	KNC-501
Bechlor of Technology (Electronics & Communication Engineering)	31	Indian Tradition, Culture and Society	KNC-602
Bechlor of Technology (Electronics & Communication Engineering)	31	Rural Development: Administration and Planning	KHU-701
Bechlor of Technology (Electronics & Communication Engineering)	31	Project Management and Entrepreneurship	KHU-802
Bechlor of Technology (Electronics & Communication Engineering)	31	Entrepreneurship Development	KOE-083
Bachelor of Technology (MECHANICAL ENGINEERING)	40	Universal Human Values & Professional Ethics	BVE301
Bachelor of Technology (MECHANICAL ENGINEERING)	40	Sports and Yoga - II	BVE451
Bachelor of Technology (MECHANICAL ENGINEERING)	40	Constitution of India, Law and Engineering	KNC501
Bachelor of Technology (MECHANICAL ENGINEERING)	40	Indian Tradition, Culture and Society	KNC602
Bachelor of Pharmacy	50	Environmental Sciences	BP206T
Bachelor of Pharmacy	50	Universal Human Values & Professional Ethics	KVE301
Bachelor of Pharmacy	50	Pharmaceutical Jurisprudence	BP505T
Diploma in Pharmacy	214	Pharmacy Law & Ethics	ER 20-26T
Bachelor of Computer Applications	-	Environmental Studies	Code-008
Bachelor of Technology (First Year)	-	Environment & Ecology	BAS 104/BAS 204
Bachelor of Technology (Computer Science & Engineering)	10	Universal Human Value and Professional Ethics	BVE301 / BVE401/ BVE301H / BVE401H
Bachelor of Technology (Computer Science and Engineering - (Data Science))	154	Universal Human Value and Professional Ethics	BVE301 / BVE401/ BVE301H / BVE401H
Computer Science and Engineering (Artificial Intelligence & Machine Learning)	153	Universal Human Value and Professional Ethics	BVE301 / BVE401/ BVE301H / BVE401H
Bachelor of Technology (Computer Science & Engineering)	10	Constitution of India. Law and Engineering	KNC501/ KNC601



Bachelor of Technology (Computer Science & Engineering)	10	Indian Tradition, Culture and Society	KNC502/ KNC602
Bachelor of Technology (Computer Science and Engineering - (Data Science))	154	Constitution of India. Law and Engineering	KNC501/ KNC601
Bachelor of Technology (Computer Science and Engineering - (Data Science))	154	Indian Tradition, Culture and Society	KNC502/ KNC602
Computer Science and Engineering (Artificial Intelligence & Machine Learning)	153	Constitution of India. Law and Engineering	KNC501/ KNC601
Computer Science and Engineering (Artificial Intelligence & Machine Learning)	153	Indian Tradition, Culture and Society	KNC502/ KNC602
Bachelor of Technology (Computer Science & Engineering)	10	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	KHU701/ KHU801
Bachelor of Technology (Computer Science and Engineering - (Data Science))	154	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	KHU701/ KHU801
Bachelor of Technology (Computer Science and Engineering -Artificial Intelligence & Machine Learning)	153	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	KHU701/ KHU801



HUMAN VALUES ETHICS AG-210 SYLLABUS

2. Human Values & Ethics

1 (1+0)

AG-210

Theory

Values and Ethics- An Introduction, Goal and Mission of Life, Vision of Life, Principles and Philosophy, Self Exploration, Self Awareness, Self Satisfaction, Decision Making, Motivation, Sensitivity, Success, Selfie as Service, Case Study of Ethical Lives, Positive Spirit, Body, Mind and Soul, Attachment and Detachment, Spirituality Quotient, Examination.



***Remedial Courses**

Syllabus

1. Agricultural Heritage Theory

1(1+0)

AG-109

Introduction of Indian agricultural heritage; Ancient agricultural practices. Relevance of heritage to present day agriculture; Past and present status of agriculture and farmers in society; Journey of Indian agriculture and its development from past to modern era; Plant production and protection through indigenous traditional knowledge; Crop voyage in India and world; Agriculture scope; Importance of agriculture and agricultural resources available in India; Crop significance and classifications; National agriculture setup in India; Current scenario of Indian agriculture; Indian agricultural concerns and future prospects.





Department of Higher Education
U.P. Government, Lucknow

National Education Policy-2020
Common Minimum Syllabus for all U.P. State Universities

Co-curricular course: Semester-1
Course Title: Food, Nutrition and Hygiene

Name	Designation	Affiliation
Steering Committee		
Mrs. Monika S. Garg, (I.A.S.), Chairperson Steering Committee	Additional Chief Secretary	Dept. of Higher Education U.P., Lucknow
Prof. Poonam Tandan	Professor, Dept. of Physics	Lucknow University, U.P.
Prof. Hare Krishna	Professor, Dept. of Statistics	CCS University Meerut, U.P.
Dr. Dinesh C. Sharma	Associate Professor	K.M. Govt. Girls P.G. College Badalpur, G.B. Nagar, U.P.

Syllabus Developed by:

S. No.	Name	Designation	Department	College/ University
1	Dr. Nitu Singh Subject Expert	Associate Professor	Home Science	H.N.B.G.P.G.College, Naini, Prayagraj
2	Dr. Shivani Verma Subject Expert	Associate Professor	Home Science	K.M.G.G.P.G.College, Badalpur, G.B.Nagar

Programme /Class: Certificate	Year: First	Semester: First
Co-Curricular Course		
Course Code: Z010101T	Course Title: Food, Nutrition and Hygiene	
Course outcomes: <ul style="list-style-type: none">To learn the basic concept of the Food and NutritionTo study the nutritive requirement during special conditions like pregnancy and lactationTo learn meal planningTo learn 100 days Nutrition ConceptTo study common health issues in the societyTo learn the special requirement of food during common illness		
Credits: 2		Compulsory
Max. Marks: 25+75		Min. Passing Marks:
Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-0		
Unit	Topics	No. of Lectures Total=30
I	Concept of Food and Nutrition (a) Definition of Food, Nutrients, Nutrition, Health, balanced Diet (b) Types of Nutrition- Optimum Nutrition, under Nutrition, Over Nutrition (c) Meal planning- Concept and factors affecting Meal Planning (d) Food groups and functions of food	8
II	Nutrients: Macro and Micro RDA, Sources, Functions, Deficiency and excess of (a) Carbohydrate (b) Fats	7



	(c) Protein (d) Minerals Major: Calcium, Phosphorus, Sodium, Potassium Trace: Iron, Iodine, Fluorine, Zinc (e) Vitamins Water soluble vitamins: Vitamin B, C Fat soluble vitamins: Vitamin A, D, E, K (f) Water (g) Dietary Fibre	
III	1000 days Nutrition (a) Concept, Requirement, Factors affecting growth of child (b) Prenatal Nutrition (0 - 280 days): Additional Nutrients' Requirement and risk factors during pregnancy (c) Breast / Formula Feeding (Birth – 6 months of age) Complementary and Early Diet (6 months – 2 years of age)	8
IV	Community Health Concept (a) Causes of common diseases prevalent in the society and Nutrition requirement in the following: Diabetes Hypertension (High Blood Pressure) Obesity Constipation Diarrhea Typhoid (b) National and International Program and Policies for improving Dietary Nutrition (c) Immunity Boosting Food	7
Suggested Readings: 1. Singh, Anita, "Food and Nutrition", Star Publication, Agra, India, 2018. 2. 1000Days-Nutrition_Brief_Brain-Think_Babies_FINAL.pdf 3. https://pediatrics.aappublications.org/content/141/2/e20173716 4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5750909/ 5. वृंदा सिंह "आहार" 2015, तेहरवां 6. Sheel Sharma, Nutrition and Diet Therapy, Peepee Publishers Delhi, 2014, First Edition.		
Suggested Continuous Evaluation Methods: MCQs, Practical Diet/ Meal Planning, assignments Presentations, group Discussion, Case study, Survey		
Suggested equivalent online courses: https://www.udemy.com/course/internationally-accredited-diploma-certificate-in-nutrition Diploma in Human Nutrition-Revised Offered by Alison		





Department of Higher Education

U.P. Government, Lucknow

National Education Policy-2020

Common Minimum Syllabus for all U.P. State Universities

Co-curricular course: Semester-2

Course Title: First Aid and Health

Name	Designation	Affiliation
Steering Committee		
Mrs. Monika S. Garg, (I.A.S.), Chairperson Steering Committee	Additional Chief Secretary	Dept. of Higher Education U.P., Lucknow
Prof. Poonam Tandan	Professor, Dept. of Physics	Lucknow University, U.P.
Prof. Hare Krishna	Professor, Dept. of Statistics	CCS University Meerut, U.P.
Dr. Dinesh C. Sharma	Associate Professor	K.M. Govt. Girls P.G. College Badalpur, G.B. Nagar, U.P.

Syllabus Developed by:

S. No.	Name	Designation	Department	College/ University
1	Dr. Monisha Banerjee	Professor & Dean, Research	Zoology	University of Lucknow, Lucknow
2	Dr. Dinesh C. Sharma	Associate Professor	Zoology	K.M. Govt. Girls P.G. College Badalpur, G.B. Nagar, U.P.

Co-curricular course

Programme/Class: Certificate		Year: First	Semester: Second
Co-Curricular Course			
Course Code: Z020201		Course Title: First Aid and First Aid and Health	
Course outcomes:			
<ul style="list-style-type: none">Learn the skill needed to assess the ill or injured person.Learn the skills to provide CPR to infants, children and adults.Learn the skills to handle emergency child birthLearn the Basic sex education help young people navigate thorny questions responsibly and with confidence.Learn the Basic sex education help youth to understand Sex is normal. It's a deep, powerful instinct at the core of our survival as a species. Sexual desire is a healthy drive.Help to understand natural changes of adolescenceLearn the skill to identify Mental Health status and Psychological First Aid			
Credits: 2 (1Theory+1 Practical)		Compulsory	
Max. Marks: 25+75		Min. Passing Marks:	
Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-0			
Unit	Topics		No. of Lectures Total= 15 Theory+ 30 Practical
I	<p>A. Basic First Aid</p> <ul style="list-style-type: none">Aims of first aid & First aid and the law.Dealing with an emergency, Resuscitation (basic CPR).Recovery position, Initial top to toe assessment.Hand washing and HygieneTypes and Content of a First aid Kit <p>B. First AID Technique</p> <ul style="list-style-type: none">Dressings and Bandages.Fast evacuation techniques (single rescuer).Transport techniques. <p>C. First aid related with respiratory system</p> <ul style="list-style-type: none">Basics of Respiration.		2 (Theory) 10 (Practical)



	<ul style="list-style-type: none"> No breathing or difficult breathing, Drowning, Choking, Strangulation and hanging, Swelling within the throat, Suffocation by smoke or gases and Asthma. <p>D. First aid related with Heart, Blood and Circulation</p> <ul style="list-style-type: none"> Basics of The heart and the blood circulation. Chest discomfort, bleeding. <p>D. First aid related with Wounds and Injuries</p> <ul style="list-style-type: none"> Type of wounds, Small cuts and abrasions Head, Chest, Abdominal injuries Amputation, Crush injuries, Shock <p>E. First aid related with Bones, Joints Muscle related injuries</p> <ul style="list-style-type: none"> Basics of The skeleton, Joints and Muscles. Fractures (injuries to bones). 	
II	<p>F. First aid related with Nervous system and Unconsciousness</p> <ul style="list-style-type: none"> Basics of the nervous system. Unconsciousness, Stroke, Fits – convulsions – seizures, Epilepsy. <p>G. First aid related with Gastrointestinal Tract</p> <ul style="list-style-type: none"> Basics of The gastrointestinal system. Diarrhea, Food poisoning. <p>H. First aid related with Skin, Burns</p> <ul style="list-style-type: none"> Basics of The skin. Burn wounds, Dry burns and scalds (burns from fire, heat and steam). Electrical and Chemical burns, Sun burns, heat exhaustion and heatstroke. Frost bites (cold burns), Prevention of burns, Fever and Hypothermia. <p>I. First aid related with Poisoning</p> <ul style="list-style-type: none"> Poisoning by swallowing, Gases, Injection, Skin <p>J. First aid related with Bites and Stings</p> <ul style="list-style-type: none"> Animal bites, Snake bites, Insect stings and bites <p>K. First aid related with Sense organs</p> <ul style="list-style-type: none"> Basic of Sense organ. Foreign objects in the eye, ear, nose or skin. Swallowed foreign objects. <p>L. Specific emergency situation and disaster management</p> <ul style="list-style-type: none"> Emergencies at educational institutes and work Road and traffic accidents. Emergencies in rural areas. Disasters and multiple casualty accidents. Triage. <p>M. Emergency Child birth</p>	2 (Theory) 10 (Practical)
III	<p>Basic Sex Education</p> <ul style="list-style-type: none"> Overview, ground rules, and a pre-test Basics of Urinary system and Reproductive system. Male puberty — physical and emotional changes Female puberty — physical and emotional changes Male-female similarities and differences Sexual intercourse, pregnancy, and childbirth Facts, attitudes, and myths about LGBTQ+ issues and identities Birth control and abortion Sex without love — harassment, sexual abuse, and rape Prevention of sexually transmitted diseases. 	9 (Theory)
IV	<p>Mental Health and Psychological First Aid</p> <ul style="list-style-type: none"> What is Mental Health First Aid? Mental Health Problems in the India The Mental Health First Aid Action Plan Understanding Depression and Anxiety Disorders Crisis First Aid for Suicidal Behavior & Depressive symptoms What is Non-Suicidal Self-Injury? Non-crisis First Aid for Depression and Anxiety Crisis First Aid for Panic Attacks, Traumatic events Understanding Disorders in Which Psychosis may Occur Crisis First Aid for Acute Psychosis 	2 (Theory) 10 (Practical)



	<ul style="list-style-type: none"> • Understanding Substance Use Disorder • Crisis First Aid for Overdose, Withdrawal • Using Mental Health First Aid 	
Suggested Readings: <ul style="list-style-type: none"> • Indian First Aid Manual-https://www.indianredcross.org/publications/FA-manual.pdf • Red Cross First Aid/CPR/AED Instructor Manual • https://mhfa.com.au/courses/public/types/youthedition4 • Finkelhor, D. (2009). The prevention of childhood sexual abuse. Durham, NH: Crimes Against Children Research Center. www.unh.edu/ccrc/pdf/CV192.pdf • Kantor L. & Levitz N. (2017). Parents' views on sex education in schools: How much do Democrats and Republicans agree? PLoS ONE, 12 (7): e0180250. • Orenstein, P. (2016). Girls and sex: Navigating the complicated new landscape. New York, NY: Harper. • Schwiegershausen, E. (2015, May 28). The Cut. www.thecut.com/2015/05/most-women-are-catcalled-before-they-turn-17.html • Wiggins, G. & McTighe, J. (2008). Understanding by design. Alexandria, VA: ASCD. • https://marshallmemo.com/marshall-publications.php#8 		
Suggested Continuous Evaluation Methods: Assignments, Presentation, Group Discussion, and MCQ		
Suggested equivalent online courses: <ul style="list-style-type: none"> • https://www.redcross.org/take-a-class/first-aid/first-aid-training/first-aid-online • https://www.firstaidforfree.com/ • https://www.coursera.org/learn/psychological-first-aid • https://www.coursera.org/learn/mental-health 		
Further Suggestions:		





Department of Higher Education U.P. Government, Lucknow

National Education Policy-2020
Common Minimum Syllabus for all U.P. State Universities

Co-curricular course: Semester-3

Course Title: Human Values and Environment studies

Name	Designation	Affiliation
Steering Committee		
Mrs. Monika S. Garg, (I.A.S.), Chairperson Steering Committee	Additional Chief Secretary	Dept. of Higher Education U.P., Lucknow
Prof. Poonam Tandan	Professor, Dept. of Physics	Lucknow University, U.P.
Prof. Hare Krishna	Professor, Dept. of Statistics	CCS University Meerut, U.P.
Dr. Dinesh C. Sharma	Associate Professor	K.M. Govt. Girls P.G. College Badalpur, G.B. Nagar, U.P.

Syllabus Developed by:

S.No.	Name	Designation	Department	College University
1.	Dr. Ajai Prakash	Astt. Professor	Business Administration	University of Lucknow
2.	Dr. Manuka Khanna	Professor	Political Science	University of Lucknow
3.	Dr. Amita Kannaujia	Professor	Zoology	University of Lucknow
4.	Dr. Rashmi Kesh	Sr. Astt. Professor	HRD, FMS	VBS Purvanchal University, Jaunpur
5.	Dr. Jyoti Prakash	Sr. Astt. Professor	Amity Institute of Biotechnology	Amity University, Lucknow

Syllabus: Human Values and Environment studies

Synopsis: Human values and Environment studies		
Programme/Class: Certificate	Year: Second	Semester: Third
Co-Curricular Course		
Course Code: Z030301	Course Title: Human Values and Environment studies	
Course outcomes: The mission of the course on Human Values and Environmental Studies is to create morally articulate solutions to be truthful and just and to become responsible towards humanity. The course seeks to establish a continuous interest in the learners to improve their thought process with intent to develop a new generation of responsible citizens capable of addressing complex challenges faced by the society due to disruptions in human interactions effecting human values. This course works towards		
<ul style="list-style-type: none">• Building fundamental knowledge of the interplay of markets, ethics, and law,• Look at various challenges faced by individual to counter unethical issues• Look at core concepts for business ethics• Look at core concepts of anti-corruption• Look at core concepts for a morally articulate solution evolver to management issues in general,• Issues of sustainable development for a better environment.• To know how environmental degradation has taken place.• Be aware of negotiations and international efforts to save environment.• How to develop sustainably?• Efforts taken up by UN in Sustainable Development.		



- Efforts taken by India in Sustainable Development.
- The course intends to create a sense of how to be more responsible towards the environment.

Upon finishing of the course students will be able to come up with using ethical reasoning for decision making and frame ethical issues as well as operationalise ethical choices. The course integrates various facets of human values and environment.

Credits: 2

Max. Marks: 100

Min. Passing Marks:40

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-0

As the course requires two areas of Human Values and Environment Studies institutions can even opt for a parallel delivery

Unit	Topics	No. of Lectures Total=30
I	Human Values- Introduction- Values, Characteristics, Types ,Developing Value system in Indian Organisation , Values in Business Management , value based Organisation , Trans –cultural Human values in Management. Swami Vivekananda's philosophy of Character Building, Gandhi's concept of Seven Sins, APJ Abdul Kalam view on role of parents and Teachers.	02
	Human Values and Present Practices – Issues : Corruption and Bribe , Privacy Policy in Web and Social Media, Cyber threats ,Online Shopping etc. Remedies UK Bribery Act, Introduction to sustainable policies and practices in Indian Economy.	02
	Principles of Ethics	03
	Secular and Spiritual Values in Management- Introduction- Secular and Spiritual values, features , Levels of value Implementation. Features of spiritual Values , Corporate Social Responsibility- Nature, Levels ,Phases and Models of CSR, Corporate Governance. CSR and Modern Business Tycoons Ratan Tata, Azim Premji and Bill Gates.	
II	Holistic Approach in Decision making- Decision making, the decision making process , The Bhagavad Gita: Techniques in Management , Dharma and Holistic Management.	03
	Discussion through Dilemmas –	03
	Dilemmas in Marketing and Pharma Organisations, moving from Public to Private – monopoly context , Dilemma of privatisation, Dilemma on liberalization, Dilemma on social media and cyber security , Dilemma on Organic food , Dilemma on standardization ,Dilemma on Quality standards.	02
III	Case Studies	
	Ecosystem: Concept, structure & functions of ecosystem : producer, consumer, decomposer, foodweb, food chain, energy flow, Ecological pyramids Conservation of Biodiversity- In-situ & Ex- situ conservation of biodiversity Role of individual in Pollution control Human Population & Environment Sustainable Development India and UN Sustainable Development Goals Concept of circular economy and entrepreneurship	7
IV	Environmental Laws? International Advancements in Environmental Conservation Role of National Green Tribunal Air Quality Index	8



<p>Importance of Indian Traditional knowledge on environment Bio assessment of Environmental Quality Environmental Management System Environmental Impact Assessment and Environmental Audit</p>	
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. A foundation course in Human Values and Professional Ethics by RR. Gaur, R. Sangal et.al 2. JUSTICE: What's the Right Thing to Do? Michael J. Sandel. 3. Human Values by A. N. Tripathi New Age International 4. Environmental Management by N.K. Uberoi 5. https://www.un.org/sustainabledevelopment/sustainable-development-goals/ 6. https://www.india.gov.in/my-government/schemes 7. https://www.legislation.gov.uk/ukpga/2010/23/contents 8. Daniel Kahneman, Thinking, Fast and Slow; Allen Lane Nov 2011 ISBN: 9780141918921 <p>Suggested Continuous Evaluation Methods:</p> <p>In addition to the theoretical inputs the course will be delivered through case studies and dilemmas. Assignments, Presentation, Group Discussions. This will instill in student a sense of decision making and practical learning. The course participants can be evaluated on the following structure.</p> <ul style="list-style-type: none"> > Assignments (10) > Presentation (10) > Attendance (5) > Final exam (75) 	





Department of Higher Education U.P. Government, Lucknow

National Education Policy-2020
Common Minimum Syllabus for all U.P. State Universities

Co-curricular course: Semester-4 Course Title: Physical Education and Yoga

Name	Designation	Affiliation
Steering Committee		
Mrs. Monika S. Garg, (I.A.S.), Chairperson Steering Committee	Additional Chief Secretary	Dept. of Higher Education U.P., Lucknow
Prof. Poonam Tandan	Professor, Dept. of Physics	Lucknow University, U.P.
Prof. Hare Krishna	Professor, Dept. of Statistics	CCS University Meerut, U.P.
Dr. Dinesh C. Sharma	Associate Professor	K.M. Govt. Girls P.G. College Badalpur, G.B. Nagar, U.P.

Syllabus Developed by:

Name	Designation	Department	College/ University
Dr. Sheel Dhar Dubey	Assistant Professor	Physical education	DDU Govt. PG Collage, Lucknow
Dr. Gunjan Shahi	Assistant Professor	Physical education	MBP Govt. PG Collage, Lucknow

Syllabus: Physical Education and Yoga

Programme: Certificate		Year: First	Semester: Forth
Co-Curricular Course			
Course Code: Z040401		Course Title: Physical Education and Yoga	
Course outcomes: Students will learn the introduction of Physical Education, Concept of fitness and wellness, Weight management and lifestyle of an individual. The student will also learn about the relation of Yoga with mental health and value Education. In this course student will also learn about the aspects of the Traditional games of India.			
Credits: 2		Compulsory	
Max. Marks: 25+75		Min. Passing Marks:	
Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-0			
Unit	Topics		No. of Lectures Total=30
I	Physical Education: <ul style="list-style-type: none">• Meaning, Definition, Aim and Objective.• Misconception About Physical Education.• Need, Importance and Scope of Physical Education in the Modern Society.• Physical Education Relationship with General Education.• Physical Education in India before Independence.• Physical Education in India after Independence.		6 Theory



II	<p>Concept of Fitness and Wellness:</p> <ul style="list-style-type: none"> • Meaning, Definition and Importance of Fitness and Wellness. • Components of Fitness. • Factor Affecting Fitness and Wellness. <p>Weight Management:</p> <ul style="list-style-type: none"> • Meaning and Definition of Obesity. • Causes of Obesity. • Management of Obesity. • Health problems due to Obesity. <p>Lifestyle:</p> <ul style="list-style-type: none"> • Meaning, Definition, Importance of Lifestyle. • Factor affecting Lifestyle. • Role of Physical activity in the maintains of Healthy Lifestyle. 	5 Theory 3 Practical
III	<p>Yoga and Meditation:</p> <ul style="list-style-type: none"> • Historical aspect of yoga. • Definition, types scopes & importance of yoga. • Yoga relation with mental health and value education. • Yoga relation with Physical Education and sports. • Definition of Asana, differences between asana and physical exercise. • Definition and classification of pranayama. • Difference between pranayama and deep breathing. • Practical: Asana, Suraya-Namaskar, Bhujang Asana, Naukasana, Halasana, Vajrasana, Padmasana, Shavasana, Makrasana, Dhanurasana, Tad Asana. Pranayam: Anulom, Vilom. 	2 Theory 6 Practical
IV	<p>Traditional Games of India:</p> <ul style="list-style-type: none"> • Meaning. • Types of Traditional Games- <ul style="list-style-type: none"> ✦ Gilli- Danda ✦ Kanche ✦ Stapu ✦ Gutte, etc. • Importance/ Benefits of Traditional Games. • How to Design Traditional Games. <p>Recreation in Physical Education:</p> <ul style="list-style-type: none"> • Meaning, Definition of Recreation. • Scope and Importance of Recreation. • General Principles of Recreation. • Types of Recreational Activities. • Aerobics and Zumba.(Fir India Movement) 	2 Theory 6 Practical
<p>Suggested Readings:</p> <ul style="list-style-type: none"> ✦ Singh, Ajmer, Physical Education and Olympic Abhiyan, "Kalayani Publishers", New Delhi, Revised Addition, 2006 ✦ Patel, Shri krishna, Physical Education, "Agrawal Publishers", Agra, 2014-15 ✦ Panday, Preeti, Sharirik Shiksha Sankalan, " Khel Sanskriti Prakashan, Kanpur 		



<ul style="list-style-type: none"> ✦ Kamlesh M.L., “Physical Education, Facts and foundations”, Faridabad P.B. Publications. ✦ B.K.S. Yengar, &quot;Light and Yog. Yoga Deepika&quot;, George Allen of Unwin Ltd., London, 1981. ✦ Braj Bilari Nigam, Yoga Power &quot;The Kpath of Personal achievement&quot; Domen and Publishers, New Delhi, 2001. ✦ Indira Devi, &quot;Yoga for You&quot;, Gibbs, Smith Publishers, Salt Lake City, 2002 Domenand Publishers, New Delhi - 2001. ✦ Jack Peter, &quot;Yoga Master the Yogic Powers&quot;, Abhishek Publications, Chandigarh, 2004. ✦ Janice Jerusalem, &quot;A Guide To Yoga&quot; Parragon Bath, Baiihe-2004. ✦ नारंग, प्रियंका, परम्परागत भारतीय खेल, " स्पोर्ट्स पब्लिकेशन" , नई दिल्ली, 2007
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> ➤ Assignments (10) ➤ Presentation (10) ➤ Attendance (5) ➤ Final exam (75)
<p>Suggested equivalent online courses:</p> <ul style="list-style-type: none"> • IGNOU. • Rajarshi Tandan Open University.
<p>Further Suggestions:.....</p>



QUALIFYING PAPER

ENVIRONMENTAL STUDIES (CODE-008)

Unit-1: The Multidisciplinary Nature of Environmental Studies:
Definition, Scope and Importance, Need for Public Awareness.

Unit-2: Natural Resources

❖ Renewable and Non-renewable Resources:

Natural resources and associated problems: -

- a) **Forest Resources:** use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
 - b) **Water Resources:** use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams- benefits and problems.
 - c) **Mineral Resources:** use and exploitation, environmental effects of extracting and using mineral resources, case studies.
 - d) **Food Resources:** World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
 - e) **Energy Resources:** Growing energy needs, renewable and nonrenewable energy sources, use of alternate energy sources, case studies
 - f) **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



Unit-3: Ecosystems

- ❖ Concept of an ecosystem
- ❖ Structure and function of an ecosystem
- ❖ Producers, consumers and decomposers
- ❖ Energy flow in the ecosystem
- ❖ Ecological succession
- ❖ Food chains, food webs and ecological pyramids
- ❖ Introduction, types, characteristic features, structure and function of the following ecosystem:-
 - a) Forest ecosystem
 - b) Grassland ecosystem
 - c) Desert ecosystem
 - d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit-4: Biodiversity And Its Conservation

- ❖ Introduction – Definition: genetic, species and ecosystem diversity.
- ❖ Bio geographical classification of India
- ❖ Value of biodiversity: Consumptive use, productive use, social, ethical, and aesthetic and option values.
- ❖ Biodiversity at global, National and local levels.
- ❖ India as a mega-diversity nation
- ❖ Hot-spots of biodiversity.
- ❖ Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts.
- ❖ Endangered and endemic species of India
- ❖ Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Unit-5: Environmental

Pollution Definition:

- ❖ Causes, effects and control measures of:-
 - a) Air pollution
 - b) Water pollution
 - c) Soil pollution
 - d) Marine pollution
 - e) Noise pollution
 - f) Thermal pollution
 - g) Nuclear pollution
- ❖ Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
- ❖ Role of an individual in prevention of pollution
- ❖ Pollution case studies
- ❖ Disaster Management: Floods, earthquake, cyclone and landslides.



Unit-6: Social Issues And The Environment

- ❖ From Unsustainable to Sustainable development
- ❖ Urban problems related to energy.
- ❖ Water conservation, rain water harvesting, watershed management
- ❖ Resettlement and rehabilitation of people; its problems and concerns. Case Studies
- ❖ Environmental Ethics: Issues and possible solutions.
- ❖ Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies.
- ❖ Wasteland reclamation.
- ❖ Consumerism and waste products
- ❖ Environment Protection Act.
- ❖ Air (Prevention and Control of Pollution) Act
- ❖ Water (Prevention and Control of Pollution) Act
- ❖ Wildlife Protection Act
- ❖ Forest Conservation Act
- ❖ Issues involved in enforcement of environmental legislation
- ❖ Public awareness

Unit-7: Human Population And The Environment

- ❖ Population growth, variation among nations.
- ❖ Population explosion: Family Welfare Programme.
- ❖ Environment and human health
- ❖ Human Rights
- ❖ Value Education
- ❖ Women and Child Welfare
- ❖ Role of Information Technology in Environment and human health
- ❖ Case Studies

Unit-8: Field Work

- ❖ Visit to a local area to document environmental assets-river / forest / grassland / hill / mountain.
- ❖ Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
- ❖ Study of common plants, insects, birds.
- ❖ Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours).



B.SC (HONS.) CHEMISTRY
Environmental Studies
BCH-204

Unit 1: Introduction to environmental studies

- Multi-disciplinary nature of environmental studies.
- Scope and importance, Need for public awareness

Unit 2: Ecosystems

- What is the ecosystem? Structure and the function of ecosystem; energy flow in an ecosystem.
- Food chains, food webs and Ecological succession. Case studies of the following ecosystems:
 - a) Forest ecosystem
 - b) Grass and ecosystem
 - c) Desert ecosystem
 - d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3: Natural Resources: Renewable and Non-renewable Resources

- Land resources and land use change, land degradation, soil erosion and desertification.
- Deforestation: Causes and impact due to mining dam building on environment, forest biodiversity and tribal population.
- Water: Use and over-exploitation of surface and ground water, floods, drought, conflicts over water (international & inter-state).
- Energy resources: Renewable and non-renewable energy resources, use of alternate energy sources, growth in energy needs, case studies.

Unit 4: Biodiversity and Conservation

- Levels of biological diversity: genetic, species and ecosystem diversity. Bio geographic zones of India Biodiversity patterns and global biodiversity hotspots
- India as a mega-biodiversity/ nation: endangered and endemic species of India.
- Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity service ecological, economic social, ethical, aesthetic and informational value

Unit 5: Environmental Pollution

- ☐ Environmental pollution and its types, Causes, effects and control Air, water, soil and noise pollution.
- Nuclear hazards and human health risks
- Solid waste management: Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6: Environmental Policies and Practices

- Sustainability and sustainable development.



- • Climate change, global warming, ozone layer depletion, acid rain and impact on human communities and agriculture.
- • Environment laws: environment protection act (prevention and control of pollution); water (prevention and control of pollution) act; wildlife protection act; forest protection conservation act.
- • Nature reserves, Tribal population and rights, and human wildlife conflicts in Indian context.

Unit 7: Human Communities and Environment

- • Human population growth: impact on environment, Human health and welfare
- • Resettlement and rehabilitation of project affected person; case studies.
- • Disaster management: floods, earthquakes, cyclones and landslides.
- • Environmental ethics, role of Indian and other religion and culture in environmental conservation.
- • Environmental communication and public awareness, case studies.(eg CNG vehicle in Delhi)

Unit 8: Field Work

- • Visit to an area to document environmental assets: river/ forest/fauna etc.
- • Visit to a local polluted site-urban/rural/industrial
- • Study of common plant, insect, birds and basic principal of identification.
- • Study of simple ecosystem –pond, river, Delhi ridge etc.



MEERUT INSTITUTE OF TECHNOLOGY

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Civil Engineering Department

List of Cross Cutting Subjects

1. BVE401	Universal Human Values and Professional Ethics
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Vigvesh

Mr. Vigvesh
HOD, Civil Engineering Department
Meerut Institute of Technology, Meerut



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Civil Engineering Department

List of Cross Cutting Subjects

1. BVE401	Universal Human Values and Professional Ethics
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Vigvesh

Mr. Vigvesh
HOD, Civil Engineering Department
Meerut Institute of Technology, Meerut



Universal Human Values and Professional Ethics

BVE301 / BVE401/

BVE301H / BVE401H

L	T	P	C
2	1	0	3

Objectives:

1. To help students distinguish between values and skills, and understand the need, basic guidelines, content, and process of value education.
2. To help students initiate a process of dialog within themselves to know what they really want to be in their life and profession
3. To help students understand the meaning of happiness and prosperity for a human being.
4. To facilitate the students to understand harmony at all the levels of human living, and live accordingly.
5. To facilitate the students in applying the understanding of harmony in existence in their profession and lead an ethical life

Course Outcome:

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

1. Understand the significance of value inputs in a classroom, distinguish between values and skills, understand the need, basic guidelines, content, and process of value education, explore the meaning of happiness and prosperity, and do a correct appraisal of the current scenario in the society
2. Distinguish between the Self and the Body, and understand the meaning of Harmony in the Self and the Co-existence of Self and Body.
3. Understand the value of harmonious relationships based on trust, respect, and other naturally acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society
4. Understand the harmony in nature and existence, and workout their mutually fulfilling participation in nature.
5. Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.

Catalogue Description

Every human being has two sets of questions to answer for his life: a) what to do? and, b) how to do? The first set pertains to the value domain, and the other to the skill domain. Both are complimentary, but the value domain has a higher priority. Today, education has become more and more skill-biased, and hence, the basic aspiration of a human being, that is to live with



happiness and prosperity, gets defeated, inspite of abundant technological progress. This course is aimed at giving inputs that will help to ensure the right understanding and right feelings in the students in their lives and professions, enabling them to lead an ethical life. In this course, the students learn the process of self-exploration, the difference between the Self and the Body, the naturally acceptable feelings in relationships in a family, the comprehensive human goal in society, the mutual fulfillment in nature, and the co-existence in existence. As a natural outcome of such inputs, they are able to evaluate an ethical life and profession ahead.

UNIT-1 Introduction to Value Education

Understanding the need, basic guidelines, content, and process for Value Education, Self-Exploration-what is it? - its content and process; 'Natural Acceptance' and Experiential Validation -as the mechanism for self-exploration, Continuous Happiness, and Prosperity-A look at basic Human Aspirations, Right understanding, Relationship, and Physical Facilities-the basic requirements for fulfillment of aspirations of every human being with their correct priority, Understanding Happiness and Prosperity correctly - A critical appraisal of the current scenario, Method to fulfill the above human aspirations: understanding and living in harmony at various levels.

UNIT-2 Understanding Harmony in the Human Being

Understanding human being as a co-existence of the sentient 'I' and the material 'Body', Understanding the needs of Self ('I') and 'Body' - Sukh and Suvidha, Understanding the Body as an instrument of 'I' (I being the doer, seer, and enjoyer), Understanding the characteristics and activities of 'I' and harmony in 'I', Understanding the harmony of I with the Body: Sanyam and Swasthya; correct appraisal of Physical needs, the meaning of Prosperity in detail, Programs to ensure Sanyam and Swasthya.

UNIT-3 Understanding Harmony in the Family and Society

Harmony in Human-Human Relationship Understanding harmony in the Family-the basic unit of human interaction, Understanding values in the human-human relationship; meaning of Nyaya and program for its fulfillment to ensure Ubhay-tripti; Trust (Vishwas) and Respect(Samman) as the foundational values of relationship, Understanding the meaning of Vishwas; Difference between intention and competence, Understanding the meaning of Samman, Difference between respect and differentiation; the other salient values in a relationship, Understanding the harmony in the society (society being an extension of the family): Samadhan, Samridhi, Abhay, Sahastitva as comprehensive Human Goals, Visualizing a universal harmonious order in society-Undivided Society (Akhand Samaj), Universal Order (Sarvabhaum Vyawastha) - from family to world family!.

UNIT-4 Understanding Harmony in Nature and Existence



Whole existence as Co-existence Understanding the harmony in Nature, Inter connectedness, and mutual fulfillment among the four orders of nature- recyclability and self-regulation in nature, Understanding Existence as Co-existence (Sah-astitva) of mutually interacting units in all-pervasive space, Holistic perception of harmony at all levels of existence.

UNIT-5 Implications of the above Holistic Understanding of Harmony on Professional Ethics

Natural acceptance of human values, Definitiveness of Ethical Human Conduct, Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order, Competence in Professional Ethics: a) Ability to utilize the professional competence for augmenting universal human order, b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems, technologies, and management models, Case studies of typical holistic technologies, management models and production systems, Strategy for the transition from the present state to Universal Human Order: a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers, b) At the level of society: as mutually enriching institutions and organizations.

Text Book

1. R R Gaur, R Asthana, G P Bagaria, 2019 (2nd Revised Edition), A Foundation Course in Human Values and Professional Ethics. ISBN 978-93-87034-47-1, Excel Books, New Delhi.

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2. E.F. Schumacher, 1973, Small is Beautiful: a study of economics as if people mattered, Blond & Briggs, Britain.
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4. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth – Club of Rome's report, Universe Books.
5. A Nagraj, 1998, Jeevan Vidya EkParichay, Divya Path Sansthan, Amarkantak.
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7. A N Tripathy, 2003, Human Values, New Age International Publishers.
8. Subhas Palekar, 2000, How to practice Natural Farming, Pracheen (Vaidik) Krishi Tantra Shodh, Amravati.
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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.
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Mode of Evaluation:

Based on participation of student in classroom discussions/Self-assessment/Peer assessment/Assignments/ Seminar/Continuous Assessment Test/Semester End Exam Socially relevant project/Group Activities/Assignments may be given importance in this course

Guidelines and Content for Practice Sessions

After every two lectures, there will be a one/two-hour practice session. This is meant to provide an opportunity to the students for carrying out self-exploration on the salient propositions made during the lectures. It is to clarify the concepts being introduced and connect them to their everyday life. Further it will also be utilized to make them evaluate their propensities and pre-conditionings vis-à-vis their 'natural acceptance' using examples and issues relevant to them in their day-to-day life situations. Keeping this objective in mind, the following exercises are being proposed for the practice sessions. These are sequentially arranged according to the lecture material. With each of these exercises, the expected outcome is also indicated to facilitate the teacher.

In the text-book, a larger set of practice exercises for self-exploration are given after each chapter, particularly in part 2, of test your understanding. A list of such exercises and the experiences of some of the students and teachers who have done these exercises is also available on the web-site. The teacher may select exercises from this set as well as develop appropriate exercises on their own. Ultimately, it is the teacher who has to use his/ her own creativity to make the best use of these sessions to guide the students towards the expected outcome.

Practice Sessions for Module 1 – Introduction to Value Education

PS 1

Introduce yourself in detail:

- Share about yourself, your family and your friends.
- Share salient achievements and failures in your life.
- Share how do you presently differentiate between right and wrong.
- Share your aspirations from life. Share what a fulfilling life means for you. For this, you may list out the top five points that occur to you when you think of a fulfilling life. While making the list, please consider your entire life, not just the present stage of your life (youth, middle age, old age, etc.). How do you expect to fulfil these aspirations and live a life of fulfillment?

What are your observations and conclusions from your life experiences so far?

Expected Outcome: The students start exploring themselves; get comfortable with each other and with the teacher and start appreciating the need and relevance of the course.



PS 2

1. Watch the video "Story of Stuff". It is a documentary about the materials economy – its motivation, process and outcome. It has been produced by a set of concerned people at storyofstuff.org, USA (source: <http://storyofstuff.org/movies/story-of-stuff/>). Discuss

- The activities and efforts made by the people shown in the video
- The outcomes of these efforts
- How their activities are motivated by their notion of happiness (physical facility = happiness. More shopping, physical facility = more happiness)? Is this and any other notions of happiness their own notions or they are programmed by advertisements, others? Does this notion seem to be true or is it getting the people into the loop of more and more physical facility only?
- Do reflect on your own notion of happiness – is it your own notion or is it borrowed from others?

2. Make a list of your desires. Now for each item on the list, find out what would be necessary to fulfil it, i.e. will it require:

- Right understanding?
- Relationship (right feeling)?
- Physical facility?

Desire Fulfilled by

	Right understanding	Fulfilment in relationship	Physical facility
Good health	?	?	Yes (food etc.)
Lots of friends	?	Yes	?
Other desires... (we have just put some examples above to start your list)			
Your priority	1, 2 or 3?	1, 2 or 3?	1, 2 or 3?

If it requires more than one of these, mark which one is the higher priority. Explain your conclusion from this exercise.

- Can all your aspirations be fulfilled just by physical facility?
- Is right understanding required for the fulfilment of none, some or all of your aspirations?
- Is relationship required for the fulfilment of none, some or all of your aspirations?
- Can one be substituted for the other (e.g. can right understanding be substituted by physical facility). If they are distinct things, what are their key characteristics (or what are the key differences between right understanding, relationship and physical facility)?
- What is the priority order of these three?
- In your education, should all three be included? To put it another way, should your education be only about skills or should it be about skills that are guided by human values?
- The problems that you see around you – are they more due to lack of physical facility or more due to lack of right understanding and right feeling?

Keep this list handy, because we intend to use the same list in future practice sessions as well.

Expected Outcome: The students start finding that right understanding is the basic need of human being; followed by relationship and physical facility. Understanding about all these three needs to be included in education. In fact, technical education without inculcation of human values can generate more problems than solutions. They appreciate the need to understand happiness and make a programme for it. They also start feeling that lack of understanding of



human values is the root cause of all problems and the sustained solution could emerge only through understanding of human values and value-based living.

PS3

1. Observe that you have the faculty of 'Natural Acceptance', based on which you can verify what is right or what is not right for you. Of course, you may or may not be generally referring to your natural acceptance for making decisions. So, find out if you get a spontaneous answer when you ask yourself basic questions, like the ones mentioned below:

a. You want to live in relationship (harmony) with others or You want to live in opposition with others?

b. In relationship, you want to live with the feeling of respect or disrespect (for yourself and for others)?

c. You want to nurture others or to exploit others?

Is your living in accordance with your natural acceptance or different from it? How do you feel when your living is in accordance with your natural acceptance; and when it is in contradiction to your natural acceptance?

2. Make a list of the problems in your family. For each problem, find out the most significant reason: is it related to lack of right understanding, lack of feelings in relationship or lack of physical facility? Also find out how much time and effort you have devoted for each in the last one week.

Expected Outcome: The students are able to see that self-verification on the basis of their natural acceptance (and experiential validation through living) is an effective way to verify what is right and what is wrong for them. They are able to see that, in many cases, their actual living is not in accordance with their natural acceptance. They are able to see that they are uncomfortable when their living is in contradiction with their natural acceptance; they are comfortable when they are living in accordance with their natural acceptance.

The students are able to see that, in most of the cases, lack of feeling in relationship is the major cause of problems in their family and with friends rather than the lack of physical facility. However, most persons give higher priority to physical facility in their life, giving a lower priority to or even ignoring relationship. They are so far not aware that right understanding, and right feeling on the basis of right understanding, is the primary need of human being.

Practice Sessions for Module 2 – Harmony in the Human Being

PS 4

1. Take the list of desires you made in PS2. Update it if required. Now classify the desires as being related to the need of the Self or need of the Body. If a desire appears to be related to both (needs of the Self and needs of the Body), look for the purpose, and split it into two or more sub-desires until you are able to see clearly whether the sub-desire is related to the need of the Self or the need of the Body.

From this exercise,

a) Find out at least two key distinguishing features between the needs of the Self and the needs of the Body.



b) Roughly what percentage of your desires is related to the needs of the Self and what percentage is related to the needs of the Body?

2. Make a list of your activities from morning till night. Some of these are activities going on in you (the Self), some activities are going on in your Body and some activities involve both you (the Self) as well as your Body. Classify the list of activities in these three categories (see table, below).

Activity	In the Self	In the Body	Involving both the Self and the Body
Running		I made the decision to run. The Body is running	
Eating		I made the decision to eat. The Body is eating. The Body is getting the nutrition and I am getting the taste	
Thinking	I am thinking. My body is not involved		
Feeling excited	I am feeling excited	There is some effect on my Body also	Both, me and my Body is involved
Heartbeat		This is happening in the Body	
Blood circulation		This is happening in the Body	
Other activities...			

Write down your observations regarding:

a) The activities of the Self which do not involve the Body. Can you see that these activities are continuous?

b) Activities of the Body. Can you see that they involve some internal organs of the Body (like the heart and blood vessels)? Can you see that these activities are discontinuous or cyclic?

c) Activities that involve both, the Self as well as the Body (like climbing a staircase). In such activities, try to identify the role of the sense organs as well as the work organs.

Expected Outcome: The students are able to relate their desires to need of the Self and the Body distinctly. They are able to see that the Self and the Body are two distinct realities, and a large part of their desires are related to the need of the Self (and not the Body). They may also be able to conclude that while their efforts are mostly centered on physical facility, which can only fulfil the needs pertaining to the Body and not the Self. They may also see that they are going by the assumption that physical facility will fulfil the needs of the Self also.

The students are able to see that the Self and the Body are two distinct realities and there are three distinct types of activities going on – activities of the Self, activities of the Body and activities of the Body in which the decision of Self is involved. They are able to see that activities like understanding, desire, thought and selection are the activities of the Self; the activities like breathing, palpitation, blood circulation etc. are fully the activities of the Body, while the activities they do with their sense organs like hearing through ears, seeing through eyes, sensing through touch, tasting through tongue and smelling through nose or the activities they do with their work organs like hands, legs etc. are such activities that require the participation of both the Self and the Body.

PS5

1. It was mentioned that when you are consuming any physical facility, the following sequence applies:

Tasty-Necessary ☐ Tasty-Unnecessary ☐ Tasteless-Unnecessary ☐ Intolerable



Observe this sequence for at least five types of physical facility, say a tasty food, TV programs, your favourite music, etc.

In contrast, observe that any feeling in you is either naturally acceptable or not. If a feeling is naturally acceptable, you want it continuously; and if not naturally acceptable, you do not want it even for a moment.

What are your conclusions from this exercise? Is continuous happiness possible through sensation by consuming physical facility? What are the other options for continuity of happiness?

2. Observe your imagination for about 15 minutes. List down the object of your imagination at least once every minute. From this list or from directly observing your imagination, make a sequence diagram (as shown below).

Now write down your observations:

- a. Are you able to see your imagination all of the time or only some of the time?
- b. If you are able to see (be aware of) your imagination only some of the time, what do you think is the reason?
- c. Are all your imaginations well connected (one imagination leads logically to another imagination) or are there sudden changes from one subject to another subject or there are gaps in between one imagination and another imagination? What is the reason for this state of imagination?
- d. What are your observations from this exercise?

3. Take your list of desires. Revise it if you need to. For each desire, identify the primary source of motivation (sensation, preconditioning or natural acceptance). If there is any desire which has more than one source of motivation, split it into two or more desires. E.g. a desire for good clothes may be motivated by your natural acceptance (to protect the Body from excessive heat or cold) and also be motivated by the social preconditioning for the clothes of the latest fashion. In such a case, split the desire into two desires. Now, write down your observations:

- e. What percentage (approximately) of your desires is motivated by your natural acceptance? This will give you an idea of the percentage that you are self-organised. Keep in mind that natural acceptance is about purpose and it does not change with time, place or person.
- f. What percentage (approximately) of your desires is motivated by sensation or preconditioning? Now you can get an idea of the percentage that you are dependent or enslaved.
- g. What effort is necessary to be completely self-organised (if that is your goal)?

Expected Outcome: The students are able to see that all physical facility they use is required for a limited time in a limited quantity. Sensation through physical facility cannot be the source of continuous happiness. They are able to see that in case of feelings; they want continuity of the naturally acceptable feelings and they do not want feelings which are not naturally acceptable even for a single moment.

The students become aware of the activities of the Self and start finding their focus of attention at different moments. Also, they are able to see that many of their desires are coming from outside (through preconditioning or sensations) and are not based on their natural acceptance. They are able to find out their level of self-organisation and enslavement.



PS6

1. In the last 3 years, recall the times that your body has been ill (in disharmony). What steps were taken to restore the harmony of the Body?

Date(s) Illness or disharmony Type (Accident, viral infection, bacterial infection, lifestyle related disorder, any other) Steps taken Root Cause

If you were to take full responsibility for your body (i.e. you had the feeling of self-regulation), what kind of daily schedule would you have? Approximately how much time would you allocate for keeping your body in good health through:

- Healthy intake (food, air, water, sunlight, etc.)
- Timings for upkeep of the Body (sleeping and waking up time, excretion, bathing, etc.)
- Labour (production of physical facility)
- Exercise
- Balancing internal and external organs of body
- Regulating breathing of body
- Medicine
- Treatment

(Of course, you need to keep adequate time for studying, understanding, learning, behaviour, work etc.)

Do you think this schedule will make you more productive or less productive? What conclusions do you draw from this exercise?

2. Calculate the quantity required for a specific physical facility, say clothes, in your family. Now find out the quantity available. Is the quantity available less, equal or more than the quantity required? In that sense, do you feel prosperous or deprived (at least regarding that particular physical facility)? Do the same for other needs. For that you can make an inventory of everything in your home (or at least your room). How much of the physical facility is being rightly utilised? Discuss this with your family and work out your conclusions regarding:

- a. Meaning of prosperity
- b. The role of understanding (human being, the role of physical facility and the feeling of self-regulation)
- c. Ability of your family to identify its needs, with the required quantity

Expected Outcome: The students are able to list down activities related to proper upkeep of the Body and practice them in their daily routine. They are also able to appreciate the plants growing in and around the campus which can be beneficial in maintaining their health and even curing common ailments.

The students begin to recognise that the need for physical facility for nurturing, protection and right utilization of their body is limited in quantity. In cases where they are able to see that they have more than enough physical facility, they develop a feeling of prosperity. In cases of lack in physical facility, they start thinking about how to produce more than required physical facility by way of a mutually-enriching cyclic process (rather than through exploitation).

Practice Sessions for Module 3 – Harmony in the Family and Society



PS 7

1. Make a list of your family members and friends. Take the eight questions regarding evaluation of trust and reflect on the answers for each person in your list, one person at a time. First reflect on the four questions about natural acceptance (intention):

- 1a. I want to make myself happy.
- 2a. I want to make the other happy.
- 3a. The other wants to make herself/himself happy.
- 4a. The other wants to make me happy.

Next, reflect on the four questions about competence – your competence and their competence:

- 1b. I am always able to make myself happy
- 2b. I am always able to make the other happy
- 3b. The other is always able to make herself/himself happy
- 4b. The other is always able to make me happy

From this reflection, how many people are there with whom you have a feeling of trust on intention? Is the feeling unconditional and continuous? The indicators of unconditional, continuous trust on intention are:

- You never get irritated or angry with them
- You never have a feeling of opposition for them
- You are always thinking and making effort for their development

Now in your class group, share your findings and discuss:

- What you have understood about intention and competence – do you evaluate them separately?
- How you evaluate yourself and how you evaluate others – do you evaluate yourself on the basis of your intention and evaluate others on the basis of their competence?
- What is the result of such evaluation?
- What would be the result if you evaluated the intention and competence separately? Will it lead to a feeling of trust for each other?
- Reflect on some instances where you got irritated or angry with someone. What was the result of it? Can you recollect that you had a doubt on their intention? Try to call them and share your reflections with one or more of them.

Write down your conclusions from this exercise.

2. Show the video “Right Here Right Now”. It is a short film directed by Anand Gandhi about human behaviour and its propagation.

(Source: Part 1: <https://www.youtube.com/watch?v=OVAokeqQuFM>

Part 2: <https://www.youtube.com/watch?v=gIYJePEEnvUY>).

Discuss:

- a. Specific interactions shown in the video – are these interactions showing reaction or response?
- b. Reflect on your own interactions – what percentage of your interactions are reactions and what percentage are response?
- c. Is it desirable to have 100% response (and no reaction)? What effort is required for it?



Expected Outcome: The students are able to see that the natural acceptance (intention) of everyone is to be happy and make others happy! It is the competence that is lacking – it is lacking in themselves and it is lacking in others also.

Whenever they evaluate themselves on the basis of their intention and others on the basis of their competence, whenever they doubt the intention of the other, there is a feeling of opposition, irritation or anger. They conclude that I am a good person and other is a bad person! This is a major problem in their relationship with their family and friends.

As soon as they are able to see their own natural acceptance (intention), they are able to see that the other also has the same natural acceptance (intention), they have a feeling of being related and they start thinking in terms of mutual development. This is relieving for them and also relieving for the other.

They are able to distinguish between reaction and response; appreciate the need for 100% response in human-human interaction and make effort towards it.

PS 8

1. List out ten or more of your interactions with other people in your family and friends in the last one week. Now analyse these interactions:

a. From your side, was it over-evaluation, under/ otherwise evaluation or right evaluation of the other? In each interaction, were you comfortable within, uncomfortable within or unaware of your state?

b. Did they evaluate you rightly or they over evaluated or under/ otherwise evaluated you? In each interaction, were you comfortable within, uncomfortable within or unaware of your state?

2. Study the chart regarding differentiation (discrimination) and regarding respect (on the basis of the Self). Where has most of your effort been? Where would you like to put in your effort now? What effort, if any, is required from your side now?

Expected Outcome: The students are able to see that respect is the right evaluation (of intention and competence). Only right evaluation leads to fulfillment in relationship. Over evaluation leads to ego and under/ otherwise evaluation leads to depression.

They are able to see that many present-day problems in the family and society are side-effects of the lack of correct understanding of respect. This results into differentiation (discrimination) such as gender bias, generation gap, caste conflicts, class struggle, domination through power, communal violence, clash of interests, and so on.

Once they can see beyond the superficial differences at the level of body, physical facility, beliefs etc., they are able to see that the other is like me (at the level of the Self):

- The other has the same natural acceptance as me.
- The other has the same potential as me.
- The other has the same programme for happiness as me.

PS 9



1. What are your personal goals or values that you would like to make effort for? Discuss with your family and find out the goals of other members. Is there a common family goal? What are the goals being pursued by your workplace or educational institution? How much of these three sets of goals are aligned to each other? What is your role in the fulfilment of these three sets of goals?
2. Assuming that you would like to see your hostel/ educational institution/ workplace/ neighborhood as a model of human society, write down:
 - a. Its goal(s) – relate it to the four human goals and elaborate on what each goal means. Also develop some key indicators or measures which will show that the goals are realised
 - b. The system to achieve these goals – Make a comprehensive plan for the fulfilment of each goal. Relate it to the dimensions of human order.
3. Working on the dimension of Education-Sanskar and Sanyam-Health, suggest what programs can be taken up to ensure right nutrition of the child along with the right sanskar.

Expected Outcome: The students are able to see that as a family, a society, the comprehensive human goal is naturally acceptable:

- Right understanding and right feeling in every human being
- Prosperity in every family
- Fearlessness (trust) in society
- Co-existence (mutual fulfilment) in nature/existence

They are able to see that the systems required for their fulfilment include:

Education-Sanskar, Health-Self regulation, Production-Work, Justice-Preservation and Exchange-Storage.

Meaningful participation by every individual, every family, every family cluster... every village, town, city... country and the whole world is required in these systems for the human goals to be fulfilled.

They are also able to see that presently they do not have definite goals and their family goals are unknown or not clearly defined. The goals of their educational institution or workplace are articulated as vision-mission-goals-objectives-values etc. These various goals need to be aligned for them to appreciate, commit and fully participate in their fulfilment. Presently there is neither clarity nor alignment, so there is limited focused effort. They start to refine their goals and think about how to discuss them in their family, in their hostel, institution etc. and make more focused effort.

Practice Sessions for Module 4 – Harmony in the Nature (Existence)

PS 10

1. Watch the video “An Inconvenient Truth”. It is a 2006 documentary about global climate change presented by Former US Vice President Al Gore. He raises the question “What were you doing when you had the time to do something?” (Source: <http://an-inconvenient-truth.com/>).

Discuss:

- a. State of the planet
- b. Root cause of the problems
- c. Comprehensive solution for the problems and your specific part in it



Take any one environmental issue in your neighbourhood/ village/ country and try to find out the root cause of it. [for instance, water scarcity, air pollution, food adulteration, etc.]. What exactly can you contribute as an individual, class or institution to the solution?

2. Observe the activity, innateness, natural characteristic and inheritance of at least two units in each of the four orders. Are you able to see that these orders are in a relationship of mutual fulfilment?

Expected Outcome: The students are able to appreciate the interconnectedness, interdependence and the relationship of mutual fulfilment existing in nature. They are able to see that they have a natural acceptance to participate in a mutually fulfilling manner in nature. By understanding the activity, innateness, natural characteristic and inheritance of the four orders in nature, they are able to identify the role of human being in the entire nature.

They are able to see that the present-day environmental issues are related to lack of understanding; and these issues can be resolved only with the development of right understanding on the part of human being.

PS 11

1. Observe your Self.

Are you in space?

Are you getting energy from the body? Is your energy dependent on the body? When your body is sick, does your energy to think diminish? Are you energised in space?

Are you being dictated by the body? Are you self-organised in space?

Innately, you have a natural acceptance for co-existence, harmony and relationship. To understand and live in co-existence, harmony and relationship is the scope of your full potential, your full possibility as a human being. Find out if that is the case for you.

2. Make a chart for the whole existence. List down different courses of studies and relate them to different realities in the existence (such as plants, human mind, animals etc.).

Expected Outcome: The students are able to obtain a holistic vision about the existence. It is in the form of co-existence, rather than a chaos. Every unit is energized, self-organised and is participating with other units in an orderly manner for mutual-fulfilment. It is only the human being without right understanding that is violating this underlying co-existence. They are able to appreciate the need to understand the co-existence in existence.

In the light of this understanding, they are able to place various educational inputs appropriately and see that education is, after all, to understand the underlying harmony and live in harmony at every level – at the level of individual human being, at the level of family, at the level of society and at the level of nature/existence.

Practice Sessions for Module 5 – Implications of the Holistic Understanding – a Look at Professional Ethics

PS 12

1. Watch the video "Hiware Bazaar". It is a documentary about a progressive village in Maharashtra, India about how good governance, along with the people of the village have made



significant change in their society (Source: <https://www.youtube.com/watch?v=cb0Qvh9BJ0s>).
Discuss:

- a. The goal of this village and the systems that they have to fulfil these goals
- b. The outcomes – achievements and areas of improvement

You can additionally pick current social problems in the campus or neighboring community and discuss how they can be solved with the involvement of the students and teachers.

2. Recollect any situation in your life when you had to face a strong ethical dilemma. Explain how, with the help of proper self-exploration and understanding, the dilemma could be resolved.

Expected Outcome: The students are able to clearly visualise the co-relation between lack of Human Values and the prevailing problems. They are also able to visualise tangible steps and a roadmap for moving in the cherished direction – for a humane society.

PS 13

1. By careful analysis, identify some important features which, when incorporated, will make our education more humanistic. What are the right expectations in terms of the outcome from humanistic education?
2. Some people feel that talking about holistic development is like trying to turn the wheel of time backwards. It will greatly hamper our progress. What is your view in this regard? Explain with justification.

Expected Outcome: The students are able to detail out various social systems essential for their own fulfilment, as well as the fulfilment of future generations. In particular, they are able to visualize the education system required for individual, and then societal transformation. They are also able to appreciate those many efforts made in the tradition that were in line with desirable human goals. Thus, they are able to learn from tradition and develop a deep sense of gratitude for the effort, for the people, for the tradition, culture etc.

PS 14

1. Suggest ways in which you can use your knowledge of Technology/Engineering/Management/Medicine etc. for universal human order, from your family order to the world family order.
2. The course is going to be over now. Evaluate your state before and after the course in terms of
 - a. Thought
 - b. Behaviour
 - c. Work
 - d. Realization
3. Do you have any plan to participate in the transition for the humane society after graduating from the institute? Write a brief note on it.

Expected Outcome: The students are able to visualise an appropriate utilization of the knowledge in their respective streams to ensure mutually enriching and sustainable systems. They are able to sincerely evaluate the course and the transformation achieved in this process. They are also able to make use of this understanding for moving towards a happy and prosperous life, including an ethical conduct of their profession.



Socially Relevant Projects

Projects may be chosen to develop all the three aspects, in order of priority:

- Right understanding
- Relationship (right feeling and right thought)
- Skills for living in harmony

For illustration, let us take a project of tree plantation. It should help the teacher and students to:

1. Experience and understand mutual fulfillment in nature.
2. Understand human participation in enrichment, protection and right utilization of rest of the nature as well as to get a feel for prosperity within. i.e. get an idea of
 - a. Right utilization of the products from the tree (like fruit, vegetables, wood etc.)
 - b. Protection and nurturing of the trees planted; at least to be aware not to damage existing trees while planting the new ones.
3. Planning and Physical plantation of the tree.

The tree plantation project can be helpful in developing the three aspects mentioned. Of course, if they are doing tree plantation primarily as a task to be done or a means to get attention and some press coverage, then the project with the same physical tasks will not be as productive for this course.

Projects should take into consideration local requirements – it should be socially relevant. For instance, a gasifier power generation project in a city can use the waste wood, leaves, cardboard and paper etc. and contribute the clean power in the neighborhood power grid using a net-meter.

Projects can be of three types:

1. Study – Observing/Recognizing/Survey/Proposing a solution. e.g. finding out the change in water table in the local area and potential sustainable solutions
2. Modelling / Prototyping – Analysing, doing on a small scale and for a short term. e.g. developing a prototype of a pedal driven generator
3. Implementation – on some scale and for the long term. e.g. establishing an evening school in the local community, solar based lighting and pumping in the village community

Some topics:

1. Find out the quantity of food-grain (rice, wheat, corn, jowar etc.) that your family consumes annually. Taking this as the base, find out the total requirement of food-grain for your country. Find out the total production of food-grain in your country. Is the production sufficient? Articulate your conclusions
2. What do we consider important as a family -understanding, relationship and/ or physical facility? Is our time and effort applied for what we consider important? What do we evaluate at the end of every month? Discuss this at home and articulate your conclusions
3. Does my family have sufficient physical facility for my physical needs? Is my family prosperous? What do we need for feeling prosperous? Discuss this at home and articulate your conclusions
4. For the proper development of a child, there is a need to ensure a proper system in the society and make an appraisal of the current state. As a project work, find out the following in the society regarding the nutrition of children:
 - a. The demographic divide
 - b. Present social determinant of Health



c. Current child Health Policies

d. Involvement of Society and steps to be taken in this direction

Suggest policies which would ensure a better state of the society in terms of the above.

5. Find out how much water is available (rain, rivers, canals), how much water is needed
6. Find out how much water is available annually, and how much is used to generate electricity
7. Find out about power generation from low-head flowing-water, i.e. without making any dams. Can this system be cyclic and mutually-enriching?
8. Find out the change in water table in the local area and suggest possible sustainable solutions
9. List Socially Relevant Work in your state, nearby states, whole country, nearby countries, whole world
10. What is one valuable lesson from your tradition? Study its impact on Trust in your family
11. Document your understanding of the meaning of Health of your Body and the Programme for Health
12. Study the needs of families around your campus that are selling liquor. Suggest ways that they can meet their needs in a mutually fulfilling manner, rather than taking to means that are harmful for the society
13. Study the 'Sulabh-Shauchalaya' organisation and systems. Write a case study report on it with sections on its eco-friendly sustainable technology and human-friendly entrepreneurial system



Universal Human Values and Professional Ethics

BVE301 / BVE401/
BVE301H / BVE401H

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Objectives:

1. To help students distinguish between values and skills, and understand the need, basic guidelines, content, and process of value education.
2. To help students initiate a process of dialog within themselves to know what they really want to be in their life and profession
3. To help students understand the meaning of happiness and prosperity for a human being.
4. To facilitate the students to understand harmony at all the levels of human living, and live accordingly.
5. To facilitate the students in applying the understanding of harmony in existence in their profession and lead an ethical life

Course Outcome:

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

1. Understand the significance of value inputs in a classroom, distinguish between values and skills, understand the need, basic guidelines, content, and process of value education, explore the meaning of happiness and prosperity, and do a correct appraisal of the current scenario in the society
2. Distinguish between the Self and the Body, and understand the meaning of Harmony in the Self and the Co-existence of Self and Body.
3. Understand the value of harmonious relationships based on trust, respect, and other naturally acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society
4. Understand the harmony in nature and existence, and workout their mutually fulfilling participation in nature.
5. Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.

Catalogue Description

Every human being has two sets of questions to answer for his life: a) what to do? and, b) how to do? The first set pertains to the value domain, and the other to the skill domain. Both are complimentary, but the value domain has a higher priority. Today, education has become more and more skill-biased, and hence, the basic aspiration of a human being, that is to live with



happiness and prosperity, gets defeated, inspite of abundant technological progress. This course is aimed at giving inputs that will help to ensure the right understanding and right feelings in the students in their lives and professions, enabling them to lead an ethical life. In this course, the students learn the process of self-exploration, the difference between the Self and the Body, the naturally acceptable feelings in relationships in a family, the comprehensive human goal in society, the mutual fulfillment in nature, and the co-existence in existence. As a natural outcome of such inputs, they are able to evaluate an ethical life and profession ahead.

UNIT-1 Introduction to Value Education

Understanding the need, basic guidelines, content, and process for Value Education, Self-Exploration—what is it? - its content and process; 'Natural Acceptance' and Experiential Validation—as the mechanism for self-exploration, Continuous Happiness, and Prosperity—A look at basic Human Aspirations, Right understanding, Relationship, and Physical Facilities—the basic requirements for fulfillment of aspirations of every human being with their correct priority, Understanding Happiness and Prosperity correctly – A critical appraisal of the current scenario, Method to fulfill the above human aspirations: understanding and living in harmony at various levels.

UNIT-2 Understanding Harmony in the Human Being

Understanding human being as a co-existence of the sentient 'I' and the material 'Body', Understanding the needs of Self ('I') and 'Body' - Sukh and Suvidha, Understanding the Body as an instrument of 'I' (I being the doer, seer, and enjoyer), Understanding the characteristics and activities of 'I' and harmony in 'I', Understanding the harmony of I with the Body: Sanyam and Swasthya; correct appraisal of Physical needs, the meaning of Prosperity in detail, Programs to ensure Sanyam and Swasthya.

UNIT-3 Understanding Harmony in the Family and Society

Harmony in Human-Human Relationship Understanding harmony in the Family—the basic unit of human interaction, Understanding values in the human-human relationship; meaning of Nyaya and program for its fulfillment to ensure Ubhay-tripti; Trust (Vishwas) and Respect (Samman) as the foundational values of relationship, Understanding the meaning of Vishwas; Difference between intention and competence, Understanding the meaning of Samman, Difference between respect and differentiation; the other salient values in a relationship, Understanding the harmony in the society (society being an extension of the family): Samadhan, Samridhi, Abhay, Sahastitva as comprehensive Human Goals, Visualizing a universal harmonious order in society—Undivided Society (Akhand Samaj), Universal Order (Sarvabhaum Vyawastha) – from family to world family!.

UNIT-4 Understanding Harmony in Nature and Existence



Whole existence as Co-existence Understanding the harmony in Nature, Inter connectedness, and mutual fulfillment among the four orders of nature- recyclability and self-regulation in nature, Understanding Existence as Co-existence (Sah-astitva) of mutually interacting units in all-pervasive space, Holistic perception of harmony at all levels of existence.

UNIT-5 Implications of the above Holistic Understanding of Harmony on Professional Ethics

Natural acceptance of human values, Definitiveness of Ethical Human Conduct, Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order, Competence in Professional Ethics: a) Ability to utilize the professional competence for augmenting universal human order, b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems, technologies, and management models, Case studies of typical holistic technologies, management models and production systems, Strategy for the transition from the present state to Universal Human Order: a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers, b) At the level of society: as mutually enriching institutions and organizations.

Text Book

1. R R Gaur, R Asthana, G P Bagaria, 2019 (2nd Revised Edition), A Foundation Course in Human Values and Professional Ethics. ISBN 978-93-87034-47-1, Excel Books, New Delhi.

References

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. Sussan George, 1976, How the Other Half Dies, Penguin Press. Reprinted 1986, 1991
4. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth – Club of Rome's report, Universe Books.
5. A Nagraj, 1998, Jeevan Vidya EkParichay, Divya Path Sansthan, Amarkantak.
6. P L Dhar, RR Gaur, 1990, Science and Humanism, Commonwealth Publishers.
7. A N Tripathy, 2003, Human Values, New Age International Publishers.
8. Subhas Palekar, 2000, How to practice Natural Farming, Pracheen (Vaidik) Krishi Tantra Shodh, Amravati.
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.

Mode of Evaluation:

Based on participation of student in classroom discussions/Self-assessment/Peer assessment/Assignments/ Seminar/Continuous Assessment Test/Semester End Exam Socially relevant project/Group Activities/Assignments may be given importance in this course

Guidelines and Content for Practice Sessions

After every two lectures, there will be a one/two-hour practice session. This is meant to provide an opportunity to the students for carrying out self-exploration on the salient propositions made during the lectures. It is to clarify the concepts being introduced and connect them to their everyday life. Further it will also be utilized to make them evaluate their propensities and pre-conditionings vis-à-vis their 'natural acceptance' using examples and issues relevant to them in their day-to-day life situations. Keeping this objective in mind, the following exercises are being proposed for the practice sessions. These are sequentially arranged according to the lecture material. With each of these exercises, the expected outcome is also indicated to facilitate the teacher.

In the text-book, a larger set of practice exercises for self-exploration are given after each chapter, particularly in part 2, of test your understanding. A list of such exercises and the experiences of some of the students and teachers who have done these exercises is also available on the web-site. The teacher may select exercises from this set as well as develop appropriate exercises on their own. Ultimately, it is the teacher who has to use his/ her own creativity to make the best use of these sessions to guide the students towards the expected outcome.

Practice Sessions for Module 1 – Introduction to Value Education

PS 1

Introduce yourself in detail:

- Share about yourself, your family and your friends.
- Share salient achievements and failures in your life.
- Share how do you presently differentiate between right and wrong.
- Share your aspirations from life. Share what a fulfilling life means for you. For this, you may list out the top five points that occur to you when you think of a fulfilling life. While making the list, please consider your entire life, not just the present stage of your life (youth, middle age, old age, etc.). How do you expect to fulfil these aspirations and live a life of fulfillment?

What are your observations and conclusions from your life experiences so far?

Expected Outcome: The students start exploring themselves; get comfortable with each other and with the teacher and start appreciating the need and relevance of the course.



**DR. A.P.J. ABDUL KALAM TECHNICAL
UNIVERSITY, LUCKNOW**



EVALUATION SCHEME & SYLLABUS

FOR

**COMMON NON CREDIT COURSE (NC)
(V & VI Semester)**

1	KNC501/ KNC601	CONSTITUTION OF INDIA, LAW AND ENGINEERING
2	KNC502/ KNC602	INDIAN TRADITION, CULTURE AND SOCIETY

[Effective from the Session: 2020-21]



SYLLABUS

1	KNC501/ KNC601	CONSTITUTION OF INDIA, LAW AND ENGINEERING
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Module 1--Introduction and Basic Information about Indian Constitution:

Meaning of the constitution law and constitutionalism, Historical Background of the Constituent Assembly, Government of India Act of 1935 and Indian Independence Act of 1947, Enforcement of the Constitution, Indian Constitution and its Salient Features, The Preamble of the Constitution, Fundamental Rights, Fundamental Duties, Directive Principles of State Policy, Parliamentary System, Federal System, Centre-State Relations, Amendment of the Constitutional Powers and Procedure, The historical perspectives of the constitutional amendments in India, Emergency Provisions: National Emergency, President Rule, Financial Emergency, and Local Self Government – Constitutional Scheme in India.

Module 2-Union Executive and State Executive:

Powers of Indian Parliament Functions of Rajya Sabha, Functions of Lok Sabha, Powers and Functions of the President, Comparison of powers of Indian President with the United States, Powers and Functions of the Prime Minister, Judiciary – The Independence of the Supreme Court, Appointment of Judges, Judicial Review, Public Interest Litigation, Judicial Activism, LokPal, Lok Ayukta, The Lokpal and Lok ayuktas Act 2013, State Executives – Powers and Functions of the Governor, Powers and Functions of the Chief Minister, Functions of State Cabinet, Functions of State Legislature, Functions of High Court and Subordinate Courts.

Module 3- Introduction and Basic Information about Legal System:

The Legal System: Sources of Law and the Court Structure: Enacted law -Acts of Parliament are of primary legislation, Common Law or Case law, Principles taken from decisions of judges constitute binding legal rules. The Court System in India and Foreign Courtiers (District Court, District Consumer Forum, Tribunals, High Courts, Supreme Court). Arbitration: As an alternative to resolving disputes in the normal courts, parties who are in dispute can agree that this will instead be referred to arbitration. Contract law, Tort, Law at workplace.

Module 4- Intellectual Property Laws and Regulation to Information:

Intellectual Property Laws: Introduction, Legal Aspects of Patents, Filing of Patent Applications, Rights from Patents, Infringement of Patents, Copyright and its Ownership, Infringement of Copyright, Civil Remedies for Infringement, Regulation to Information-Introduction, Right to Information Act, 2005, Information Technology Act, 2000, Electronic Governance, Secure Electronic Records and Digital Signatures, Digital Signature Certificates, Cyber Regulations Appellate Tribunal, Offences, Limitations of the Information Technology Act.

Module 5 -Business Organizations and E-Governance:

Sole Traders, Partnerships: Companies: The Company's Act: Introduction, Formation of a Company, Memorandum of Association, Articles of Association, Prospectus, Shares, Directors, General Meetings and Proceedings, Auditor, Winding up.

E-Governance and role of engineers in E-Governance, Need for reformed engineering serving at the Union and State level, Role of I.T. professionals in Judiciary, Problem of Alienation and Secessionism in few states creating hurdles in Industrial development.

COURSE OBJECTIVE:

- To acquaint the students with legacies of constitutional development in India and help those to understand the most diversified legal document of India and philosophy behind it.
- To make students aware of the theoretical and functional aspects of the Indian Parliamentary System.
- To channelize students' thinking towards basic understanding of the legal concepts and its implications for engineers.
- To acquaint students with latest intellectual property rights and innovation environment with related regulatory framework.
- To make students learn about role of engineering in business organizations and e-governance.

COURSE OUTCOME: At the end of the course, learners should be able to-

1. Identify and explore the basic features and modalities about Indian constitution.
2. Differentiate and relate the functioning of Indian parliamentary system at the center and state level.
3. Differentiate different aspects of Indian Legal System and its related bodies.
4. Discover and apply different laws and regulations related to engineering practices.
5. Correlate role of engineers with different organizations and governance models

Pedagogy: Lecture, Problem based learning, Group discussions, Visual media, Films, Documentaries, Debate forums.

Suggested Readings:

- Brij Kishore Sharma: *Introduction to the Indian Constitution*, 8th Edition, PHI Learning Pvt. Ltd.
- Granville Austin: *The Indian Constitution: Cornerstone of a Nation (Classic Reissue)*, Oxford University Press.
- S.G Subramanian: *Indian Constitution and Indian Polity*, 2nd Edition, Pearson Education 2020.
- Subhash C. Kashyap: *Our Constitution: An Introduction to India's Constitution and constitutional Law*, NBT, 2018.
- Madhav Khosla: *The Indian Constitution*, Oxford University Press.
- PM Bakshi: *The Constitution of India*, Latest Edition, Universal Law Publishing.
- V.K. Ahuja: *Law Relating to Intellectual Property Rights* (2007)
- Suresh T. Viswanathan: *The Indian Cyber Laws*, Bharat Law House, New Delhi-88
- P. Narayan: *Intellectual Property Law*, Eastern Law House, New Delhi
- Prabudh Ganguli: *Gearing up for Patents: The Indian Scenario*, Orient Longman.
- BL Wadehra: *Patents, Trademarks, Designs and Geological Indications Universal Law Publishing - LexisNexis*.
- *Intellectual Property Rights: Law and Practice, Module III* by ICSI (only relevant sections)
- Executive programme study material Company Law, Module II, by ICSI (The Institute of Companies Secretaries of India) (Only relevant sections i.e., Study 1, 4 and 36). <https://www.icsi.edu/media/webmodules/publications/Company%20Law.pdf>
- Handbook on e-Governance Project Lifecycle, Department of Electronics & Information Technology, Government of India, https://www.meity.gov.in/writereaddata/files/e-Governance-Project-Lifecycle-Participant-Handbook-5Day-CourseVI_20412.pdf
- Companies Act, 2013 Key highlights and analysis by PWC. <https://www.pwc.in/assets/pdfs/publications/2013/companies-act-2013-key-highlights-and-analysis.pdf>



Referred Case Studies:

- Keshavanand Bharati V. State of Kerala, AIR 1973 SC 1461.
- Maneka Gandhi V. Union of India AIR, 1978 SC 597.
- S.R. Bammai V. Union of India, AIR 1994 SC 1918.
- Kuldip Nayyar V. Union of India, AIR 2006 SC312.
- A.D.M. Jabalpur V. ShivkantShakla, AIR 1976 SC1207.
- Remshwar Prasad V. Union of India, AIR 2006 SC980.
- Keshav Singh in re, AIR 1965 SC 745.
- Union of India V. Talsiram, AIR 1985 SC 1416.
- Atiabari Tea Estate Co.V. State of Assam, AIR 1961SC232.
- SBP & Co. Vs. Patel Engg. Ltd. 2005 (8) SCC 618.
- Krishna Bhagya Jala Nigam Ltd. Vs. G. Arischandra Reddy (2007) 2 SCC 720.
- Oil & Natural Gas Corporation Vs. Saw Pipes Ltd. 2003 (4) SCALE 92 – 185.

**** (Other relevant case studies can be consulted by the teacher as per the topic).**

Prescribed Legislations:

1. Information Technology Act, 2000 with latest amendments.
2. RTI Act 2005 with latest amendments.
3. Information Technology Rules, 2000
4. Cyber Regulation Appellate Tribunal Rules, 2000

Suggested aid for Students and Pedagogic purpose

- RSTV debates on corporate law, IPR and patent issues
- NPTEL lectures on IPR and patent rights

Episodes of 10 -part mini TV series “Samvidhan: The Making of Constitution of India” by RSTV.

SYLLABUS

2	KNC502/ KNC602	INDIAN TRADITION, CULTURE AND SOCIETY
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INDIAN TRADITIONS, CULTURAL AND SOCIETY

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Module 1- Society State and Polity in India

State in Ancient India: Evolutionary Theory, Force Theory, Mystical Theory Contract Theory, Stages of State Formation in Ancient India, Kingship , Council of Ministers Administration Political Ideals in Ancient India Conditions' of the Welfare of Societies, The Seven Limbs of the State, Society in Ancient India, Purusārtha, Varnāshrama System, Āshrama or the Stages of Life, Marriage, Understanding Gender as a social category, The representation of Women in Historical traditions, Challenges faced by Women. Four-class Classification, Slavery.

Module 2- Indian Literature, Culture, Tradition, and Practices

Evolution of script and languages in India: Harappan Script and Brahmi Script. The Vedas, the Upanishads, the Ramayana and the Mahabharata, Puranas, Buddhist And Jain Literature in Pali, Prakrit And Sanskrit, Kautilya's Arthashastra, Famous Sanskrit Authors, Telugu Literature, Kannada Literature, Malayalam Literature ,Sangama Literature Northern Indian Languages & Literature, Persian And Urdu ,Hindi Literature

Module 3- Indian Religion, Philosophy, and Practices

Pre-Vedic and Vedic Religion, Buddhism, Jainism, Six System Indian Philosophy, Shankaracharya, Various Philosophical Doctrines , Other Heterodox Sects, Bhakti Movement, Sufi movement, Socio religious reform movement of 19th century, Modern religious practices.

Module 4-Science, Management and Indian Knowledge System

Astronomy in India, Chemistry in India, Mathematics in India, Physics in India, Agriculture in India, Medicine in India ,Metallurgy in India, Geography, Biology, Harappan Technologies, Water Management in India, Textile Technology in India ,Writing Technology in India Pyrotechnics in India Trade in Ancient India/,India's Dominance up to Pre-colonial Times

Module 5- Cultural Heritage and Performing Arts

Indian Architect, Engineering and Architecture in Ancient India, Sculptures, Seals, coins, Pottery, Puppetry, Dance, Music, Theatre, drama, Painting, Martial Arts Traditions, Fairs and Festivals, Current developments in Arts and Cultural, Indian's Cultural Contribution to the World. Indian Cinema

COURSE OBJECTIVES:

- The course aims at imparting basic principles of thought process, reasoning and inference to identify the roots and details of some of the contemporary issues faced by our nation and try to locate possible solutions to these challenges by digging deep into our past.
- To enable the students to understand the importance of our surroundings and encourage the students to contribute towards sustainable development.
- To sensitize students towards issues related to 'Indian' culture, tradition and its composite character.

- To make students aware of holistic life styles of Yogic-science and wisdom capsules in Sanskrit literature that are important in modern society with rapid technological advancements and societal disruptions.
- To acquaint students with Indian Knowledge System, Indian perspective of modern scientific world-view and basic principles of Yoga and holistic health care system.

COURSE OUTCOMES: Ability to understand, connect up and explain basics of Indian Traditional knowledge modern scientific perspective.

Suggested Pedagogy for Teachers

- Project based learning
- Case studies
- Group discussion
- Presentations

Suggested Text & Reference Books

1. V. Sivaramakrishna (Ed.), *Cultural Heritage of India-Course Material*, Bharatiya Vidya Bhavan, Mumbai, 5th Edition, 2014
2. S. Baliyan, *Indian Art and Culture*, Oxford University Press, India
3. Swami Jitatmanand, *Modern Physics and Vedant*, Bharatiya Vidya Bhavan
4. Romila Thapar, *Readings In Early Indian History* Oxford University Press , India
5. Fritz of Capra, *Tao of Physics*
6. Fritz of Capra, *The wave of Life*
7. V N Jha (English Translation), *Tarkasangraha of Annam Bhatta*, International Chinmay Foundation, Velliarnad, Amaku, am
8. Yoga Sutra of Patanjali, Ramakrishna Mission, Kolkatta
9. GN Jha (Eng. Trans.) Ed. R N Jha, *Yoga-darshanam with Vyasa Bhashya*, Vidyanidhi Prakasham, Delhi, 2016
10. RN Jha, *Science of Consciousness Psychotherapy and Yoga Practices*, Vidyanidhi Prakasham, Delhi, 2016
11. P R Sharma (English translation), *Shodashang Hridayam*
12. Basham, A.L., *The Wonder that was India* (34th impression), New Delhi, Rupa & co
13. Sharma, R.S., *Aspects of Political Ideas and Institutions in Ancient India*(fourth edition), Delhi, Motilal Banarsidass,

HSMC & OPEN ELECTIVES II LIST 2021-22

KHU701/ KHU801	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	3L:0T:0P	3 Credits
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COURSE OUTCOME: After completion of the course student will be able to:

1. Students can understand the definitions, concepts and components of Rural Development
2. Students will know the importance, structure, significance, resources of Indian rural economy.
3. Students will have a clear idea about the area development programmes and its impact.
4. Students will be able to acquire knowledge about rural entrepreneurship.
5. Students will be able to understand about the using of different methods for human resource planning

Unit	Topics	Lectures
I	Rural Planning & Development: Concepts of Rural Development, Basic elements of rural Development, and Importance of Rural Development for creation of Sustainable Livelihoods, An overview of Policies and Programmes for Rural Development- Programmes in the agricultural sector, Programmes in the Social Security, Programmes in area of Social Sector.	8
II	Rural Development Programmes: Sriniketan experiment, Gurgaon experiment, marthandam experiment, Baroda experiment, Firkha development scheme, Etawa pilot project, Nilokheri experiment, approaches to rural community development: Tagore, Gandhi etc	8
III	Panchayati Raj & Rural Administration: Administrative Structure: bureaucracy, structure of administration; Panchayati Raj Institutions Emergence and Growth of Panchayati Raj Institutions in India; People and Panchayati Raj; Financial Organizations in Panchayati Raj Institutions, Structure of rural finance, Government & Non-Government Organizations / Community Based Organizations, Concept of Self help group.	8
IV	Human Resource Development in Rural Sector: Need for Human Resource Development, Elements of Human Resource Development in Rural Sector Dimensions of HRD for rural development-Health, Education, Energy, Skill Development, Training, Nutritional Status access to basic amenities - Population composition.	8
V	Rural Industrialization and Entrepreneurship: Concept of Rural Industrialization, Gandhian approach to Rural Industrialization, Appropriate Technology for Rural Industries, Entrepreneurship and Rural Industrialization-Problems and diagnosis of Rural Entrepreneurship in India, with special reference to Women Entrepreneurship; Development of Small Entrepreneurs in India, need for and scope of entrepreneurship in Rural area.	8

Text Book:

1. Corporate Social Responsibility: An Ethical Approach - Mark S. Schwartz
2. Katar Singh: Rural Development in India – Theory History and Policy
3. Todaro M.P. Economic Development in III World war
4. Arora R.C – Integrated Rural Development in India
5. Dhandekar V.M and Rath N poverty in India
6. A.N.Agarwal and Kundana Lal: Rural Economy of India
7. B.K.Prasad: Rural Development-Sarup & Son's Publications.



HSMC & OPEN ELECTIVES II LIST 2021-22

KHU702/ KHU802	PROJECT MANAGEMENT & ENTREPRENEURSHIP	3L:0T:0P	3 Credits
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Unit	Topics	Lectures
I	Entrepreneurship: Entrepreneurship: need, scope , Entrepreneurial competencies & traits, Factors affecting entrepreneurial development, Entrepreneurial motivation (Mc Clelland's Achievement motivation theory), conceptual model of entrepreneurship , entrepreneur vs. intrapreneur; Classification of entrepreneurs; Entrepreneurial Development Programmes	8
II	Entrepreneurial Idea and Innovation: Introduction to Innovation, Entrepreneurial Idea Generation and Identifying Business Opportunities, Management skills for Entrepreneurs and managing for Value Creation, Creating and Sustaining Enterprising Model & Organizational Effectiveness	8
III	Project Management: Project management: meaning, scope & importance, role of project manager; project life-cycle Project appraisal: Preparation of a real time project feasibility report containing Technical appraisal,; Environmental appraisal, Market appraisal (including market survey for forecasting future demand and sales) and Managerial appraisal.	8
IV	Project Financing: Project cost estimation & working capital requirements, sources of funds, capital budgeting, Risk & uncertainty in project evaluation , preparation of projected financial statements viz. Projected balance sheet, projected income statement, projected funds & cash flow statements, Preparation of detailed project report, Project finance.	8
V	Social Entrepreneurship: Social Sector Perspectives and Social Entrepreneurship, Social Entrepreneurship Opportunities and Successful Models, Social Innovations and Sustainability, Marketing Management for Social Ventures, Risk Management in Social Enterprises, Legal Framework for Social Ventures.	8

Text Book:

1. Innovation and Entrepreneurship by Drucker, P.F.; Harper and Row
2. Business, Entrepreneurship and Management: Rao, V.S.P. ;Vikas
3. Entrepreneurship: Roy Rajeev; OUP.
4. Text Book of Project Management: Gopalkrishnan, P. and Ramamoorthy, V.E.; McMillan
5. Project Management for Engineering, Business and Technology: Nicholas, J.M., and Steyn, H.; PHI
6. Project Management: The Managerial Process: Gray, C.F., Larson, E.W. and Desai, G.V.; MGH



KOE083: ENTREPRENEURSHIP DEVELOPMENT		
DETAILED SYLLABUS		
Unit	Topic	3-1-0 Proposed Lecture
I	Entrepreneurship- definition. growth of small scale industries in developing countries and their positions vis-a-vis large industries; role of small scale industries in the national economy; characteristics and types of small scale industries; demand based and resources based ancillaries and sub-control types. Government policy for small scale industry; stages in starting a small scale industry.	08
II	Project identification- assessment of viability, formulation, evaluation, financing, field-study and collection of information, preparation of project report, demand analysis, material balance and output methods, benefit cost analysis, discounted cash flow, internal rate of return and net present value methods.	08
III	Accountancy- Preparation of balance sheets and assessment of economic viability, decision making, expected costs, planning and production control, quality control, marketing, industrial relations, sales and purchases, advertisement, wages and incentive, inventory control, preparation of financial reports, accounts and stores studies.	08
IV	Project Planning and control: The financial functions, cost of capital approach in project planning and control. Economic evaluation, risk analysis, capital expenditures, policies and practices in public enterprises. profit planning and programming, planning cash flow, capital expenditure and operations. control of financial flows, control and communication.	08
V	Laws concerning entrepreneur viz, partnership laws, business ownership, sales and income taxes and workman compensation act. Role of various national and state agencies which render assistance to small scale industries.	08

Text Books:

1. Forbat, John, "Entrepreneurship" New Age International.
2. Havinal, Veerbhadrappa, "Management and Entrepreneurship" New Age International
3. Joseph, L. Massod, "Essential of Management", Prentice Hall of India



DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW



Evaluation Scheme & Syllabus

**For
B.Tech. 2nd Year**

- **Mechanical Engineering**
- **Automobile Engineering**
- **Manufacturing Technology**
- **Production Engineering**
- **Industrial Production Engineering**

(Effective from the Session: 2023-24)

DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW



SEMESTER –III

SN	Subject Code	Subject	Type	Category	Periods			Sessional Component		Sessional (SW) (TS/PS)	End Semester Examination (ESE)	Total SW+ESE	Credit Cr
					L	T	P	CT	TA				
1	BOE3** / BAS303	Science Based Open Elective/BSC (Maths-III/Math IV/ Math V)	T	ES/BS	3	1	0	20	10	30	70	100	4
2	BVE301 / BAS301	Universal Human Value and Professional Ethics/ Technical Communication	T	VA/HS	2	1	0	20	10	30	70	100	3
3	BME301	Thermodynamics	T	PC	3	1	0	20	10	30	70	100	4
4	BME302	Fluid Mechanics & Fluid Machines	T	PC	3	1	0	20	10	30	70	100	4
5	BME303	Materials Engineering	T	PC	2	1	0	20	10	30	70	100	3
6	BME351	Fluid Mechanics Lab	P	PC	0	0	2		50	50	50	100	1
7	BME352	Material Testing Lab	P	PC	0	0	2		50	50	50	100	1
8	BME353	Computer Aided Machine Drawing-I Lab	P	PC	0	0	2		50	50	50	100	1
10	BCC301 / BCC302	Cyber Security/Python programming	T	VA	2	0	0	20	10	30	70	100	2
11	BCC351	Internship Assessment /Mini Project*	P							100		100	2
		Total			15	5	6						25

- **Mathematics –III** for CE / ENV and allied branches
- **Mathematics-IV** for Computer/Electronics/Electrical & allied Branches, Mechanical & Allied Branches Textile/Chemical & allied Branches
- **Mathematics-V** for Bio Technology / Agriculture Engineering

SEMESTER –IV

SN	Subject Code	Subject	Type	Category	Periods			Sessional Component		Sessional (SW) (TS/PS)	End Semester Examination (ESE)	Total SW+ESE	Credit Cr
					L	T	P	CT	TA				
1	BAS403 / BOE4**	BSC (Maths-III/Math IV/ Math V)/Science Based Open Elective	T	BS/ES	3	1	0	20	10	30	70	100	4
2	BAS401 / BVE401	Technical Communication / Universal Human Value and Professional Ethics	T	HS/VA	2	1	0	20	10	30	70	100	3
3	BME401	Applied Thermodynamics	T	PC	3	1	0	20	10	30	70	100	4
4	BME402	Engineering Mechanics & Strength Material	T	PC	3	1	0	20	10	30	70	100	4
5	BME403	Manufacturing Processes	T	PC	2	1	0	20	10	30	70	100	3
6	BME451	Applied Thermodynamics Lab	P	PC	0	0	2		50	50	50	100	1
7	BME452	Manufacturing Processes Lab	P	PC	0	0	2		50	50	50	100	1
8	BME453	Computer Aided Machine Drawing-II Lab	P	PC	0	0	2		50	50	50	100	1
9	BCC402 / BCC401	Python Programming/Cyber Security	P	VA	2	0	0	20	10	30	70	100	2
✓ 10	BVE451 / BVE452	Sports and Yoga - II / NSS-II	P	VA	0	0	3			100		100	0
		Total			15	5	9						23
		Minor Degree/ Honors Degree MT-1/HT-1											

*The Mini Project or internship (4 weeks) will be done during summer break after 4th Semester and will be assessed during V semester.



DR. A.P.J. ABDUL KALAM TECHNICAL
UNIVERSITY, LUCKNOW



EVALUATION SCHEME & SYLLABUS

FOR

NON CREDIT COURSE
(V & VI Semester)

1	KNC501/ KNC601	CONSTITUTION OF INDIA, LAW AND ENGINEERING
2	KNC502/ KNC602	INDIAN TRADITION, CULTURE AND SOCIETY

[Effective from the Session: 2020-21]



B.Tech. V & VI Semester

1	KNC501/ KNC601	CONSTITUTION OF INDIA, LAW AND ENGINEERING
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MECHANICAL ENGINEERING#

B. Tech Mechanical Engineering Evaluation Scheme

SEMESTER- V													
Sl. No.	Code	Subject	Periods			Evaluation Scheme				End Semester		Total	Credits
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KME 501	Heat and Mass Transfer	3	1	0	30	20	50		100		150	4
2	KME 502	Strength of Material	3	1	0	30	20	50		100		150	4
3	KME 503	Industrial Engineering	3	1	0	30	20	50		100		150	4
4		Departmental Elective-I	3	0	0	30	20	50		100		150	3
5		Departmental Elective-II	3	0	0	30	20	50		100		150	3
6	KME 551	Heat Transfer LAB	0	0	2				25		25	50	1
7	KME 552	Python Lab	0	0	2				25		25	50	1
8	KME 553	Internet of Things Lab	0	0	2				25		25	50	1
9	KME 554	Mini Project or Internship Assessment*	0	0	2				50			50	1
10	KNC501/ KNC502	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			NC
11	MOOCs (Essential for Hons. Degree)												
		Total	17	3	6							950	22

*The Mini Project or internship (4 - 5 weeks) conducted during summer break after IV semester and will be assessed during V semester.

SEMESTER- VI													
Sl. No.	Code	Subject	Periods			Evaluation Scheme				End Semester		Total	Credits
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KME 601	Refrigeration and Air Conditioning	3	1	0	30	20	50		100		150	4
2	KME 602	Machine Design	3	1	0	30	20	50		100		150	4
3	KME 603	Theory of Machine	3	1	0	30	20	50		100		150	4
4		Departmental Elective-III	3	0	0	30	20	50		100		150	3
5		Open Elective-I	3	0	0	30	20	50		100		150	3
6	KME 651	Refrigeration and Air Conditioning Lab	0	0	2				25		25	50	1
7	KME 652	Machine Design Lab	0	0	2				25		25	50	1
8	KME 653	Theory of Machine Lab	0	0	2				25		25	50	1
9	KNC601/ KNC602	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			NC
10		Total	17	3	6							900	21

Module 1--Introduction and Basic Information about Indian Constitution:

Meaning of the constitution law and constitutionalism, Historical Background of the Constituent Assembly, Government of India Act of 1935 and Indian Independence Act of 1947, Enforcement of the Constitution, Indian Constitution and its Salient Features, The Preamble of the Constitution, Fundamental Rights, Fundamental Duties, Directive Principles of State Policy, Parliamentary System, Federal System, Centre-State Relations, Amendment of the Constitutional Powers and Procedure, The historical perspectives of the constitutional amendments in India, Emergency Provisions: National Emergency, President Rule, Financial Emergency, and Local Self Government – Constitutional Scheme in India.

Module 2-Union Executive and State Executive:

Powers of Indian Parliament Functions of Rajya Sabha, Functions of Lok Sabha, Powers and Functions of the President, Comparison of powers of Indian President with the United States, Powers and Functions of the Prime Minister, Judiciary – The Independence of the Supreme Court, Appointment of Judges, Judicial Review, Public Interest Litigation, Judicial Activism, LokPal, Lok Ayukta, The Lokpal and Lok ayuktas Act 2013, State Executives – Powers and Functions of the Governor, Powers and Functions of the Chief Minister, Functions of State Cabinet, Functions of State Legislature, Functions of High Court and Subordinate Courts.

Module 3- Introduction and Basic Information about Legal System:

The Legal System: Sources of Law and the Court Structure: Enacted law -Acts of Parliament are of primary legislation, Common Law or Case law, Principles taken from decisions of judges constitute binding legal rules. The Court System in India and Foreign Courtiers (District Court, District Consumer Forum, Tribunals, High Courts, Supreme Court). Arbitration: As an alternative to resolving disputes in the normal courts, parties who are in dispute can agree that this will instead be referred to arbitration. Contract law, Tort, Law at workplace.

Module 4- Intellectual Property Laws and Regulation to Information:

Intellectual Property Laws: Introduction, Legal Aspects of Patents, Filing of Patent Applications, Rights from Patents, Infringement of Patents, Copyright and its Ownership, Infringement of Copyright, Civil Remedies for Infringement, Regulation to Information-Introduction, Right to Information Act, 2005, Information Technology Act, 2000, Electronic Governance, Secure Electronic Records and Digital Signatures, Digital Signature Certificates, Cyber Regulations Appellate Tribunal, Offences, Limitations of the Information Technology Act.

Module 5 -Business Organizations and E-Governance:

Sole Traders, Partnerships: Companies: The Company's Act: Introduction, Formation of a Company, Memorandum of Association, Articles of Association, Prospectus, Shares, Directors, General Meetings and Proceedings, Auditor, Winding up.

E-Governance and role of engineers in E-Governance, Need for reformed engineering serving at the Union and State level, Role of I.T. professionals in Judiciary, Problem of Alienation and Secessionism in few states creating hurdles in Industrial development.

COURSE OBJECTIVE:

- To acquaint the students with legacies of constitutional development in India and help those to understand the most diversified legal document of India and philosophy behind it.
- To make students aware of the theoretical and functional aspects of the Indian Parliamentary System.
- To channelize students' thinking towards basic understanding of the legal concepts and its implications for engineers.
- To acquaint students with latest intellectual property rights and innovation environment with related regulatory framework.
- To make students learn about role of engineering in business organizations and e-governance.

COURSE OUTCOME: At the end of the course, learners should be able to-

1. Identify and explore the basic features and modalities about Indian constitution.
2. Differentiate and relate the functioning of Indian parliamentary system at the center and state level.
3. Differentiate different aspects of Indian Legal System and its related bodies.
4. Discover and apply different laws and regulations related to engineering practices.
5. Correlate role of engineers with different organizations and governance models

Pedagogy: Lecture, Problem based learning, Group discussions, Visual media, Films, Documentaries, Debate forums.

Suggested Readings:

- Brij Kishore Sharma: *Introduction to the Indian Constitution*, 8th Edition, PHI Learning Pvt. Ltd.
- Granville Austin: *The Indian Constitution: Cornerstone of a Nation (Classic Reissue)*, Oxford University Press.
- Subhash C. Kashyap: *Our Constitution: An Introduction to India's Constitution and constitutional Law*, NBT, 2018.
- Madhav Khosla: *The Indian Constitution*, Oxford University Press.
- PM Bakshi: *The Constitution of India*, Latest Edition, Universal Law Publishing.
- V.K. Ahuja: *Law Relating to Intellectual Property Rights* (2007)
- Suresh T. Viswanathan: *The Indian Cyber Laws*, Bharat Law House, New Delhi-88
- P. Narayan: *Intellectual Property Law*, Eastern Law House, New Delhi
- Prabudh Ganguli: *Gearing up for Patents: The Indian Scenario*, Orient Longman.
- BL Wadehra: *Patents, Trademarks, Designs and Geographical Indications Universal Law Publishing - LexisNexis*.
- *Intellectual Property Rights: Law and Practice, Module III* by ICSI (only relevant sections)
- Executive programme study material Company Law, Module II, by ICSI (The Institute of Companies Secretaries of India) (Only relevant sections i.e., Study 1, 4 and 36). <https://www.icsi.edu/media/webmodules/publications/Company%20Law.pdf>
- Handbook on e-Governance Project Lifecycle, Department of Electronics & Information Technology, Government of India, https://www.meity.gov.in/writereaddata/files/e-Governance_Project_Lifecycle_Participant_Handbook-5Day_CourseV1_20412.pdf
- Companies Act, 2013 Key highlights and analysis by PWC. <https://www.pwc.in/assets/pdfs/publications/2013/companies-act-2013-key-highlights-and-analysis.pdf>

Referred Case Studies:

- Keshavanand Bharati V. State of Kerala, AIR 1973 SC 1461.
- Maneka Gandhi V. Union of India AIR, 1978 SC 597.
- S.R. Bammai V. Union of India, AIR 1994 SC 1918.
- Kuldip Nayyar V. Union of India, AIR 2006 SC312.
- A.D.M. Jabalpur V. ShivkantShakla, AIR 1976 SC1207.
- Remshwar Prasad V. Union of India, AIR 2006 SC980.
- Keshav Singh in re, AIR 1965 SC 745.
- Union of India V. Talsiram, AIR 1985 SC 1416.
- Atiabari Tea Estate Co.V. State of Assam, AIR 1961SC232.
- SBP & Co. Vs. Patel Engg. Ltd. 2005 (8) SCC 618.
- Krishna Bhagya Jala Nigam Ltd. Vs. G. Arischandra Reddy (2007) 2 SCC 720.
- Oil & Natural Gas Corporation Vs. Saw Pipes Ltd. 2003 (4) SCALE 92 – 185.

**** (Other relevant case studies can be consulted by the teacher as per the topic).**

Prescribed Legislations:

1. Information Technology Act, 2000 with latest amendments.
2. RTI Act 2005 with latest amendments.
3. Information Technology Rules, 2000
4. Cyber Regulation Appellate Tribunal Rules, 2000

Suggested aid for Students and Pedagogic purpose

- RSTV debates on corporate law, IPR and patent issues
- NPTEL lectures on IPR and patent rights

Episodes of 10 -part mini TV series “Samvidhan: The Making of Constitution of India” by RSTV.

**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY,
UTTAR PRADESH, LUCKNOW**

EVALUATION SCHEME & SYLLABUS



**BACHELOR OF PHARMACY
I, II, III & IV Year**

On PCI Guidelines

(EFFECTIVE FROM THE SESSION: 2019-20)



ECOND SEMESTER

Course Code	Name of the Course	No. of Hours/ week	Internal Assessment				End Semester Exams		Total Marks	Credit Points
			Continuous Mode	Sessional Exams		Total	Marks	Duration		
				Marks	Duration					
BP201T	Human Anatomy and Physiology II – Theory	4	10	15	1 Hr	25	75	3 Hrs	100	4
BP202T	Pharmaceutical Organic Chemistry I – Theory	4	10	15	1 Hr	25	75	3 Hrs	100	4
BP203T	Biochemistry– Theory	4	10	15	1 Hr	25	75	3 Hrs	100	4
BP204T	Pathophysiology– Theory	4	10	15	1 Hr	25	75	3 Hrs	100	4
BP205T	Computer Applications in Pharmacy– Theory	3	25	50	2 Hrs	75	---	---	75	3
BP206T	Environmental Sciences – Theory	3	25	50	2 Hrs	75	---	---	75	3
BP207P	Human Anatomy and Physiology II – Practical	4	5	10	4 Hrs	15	35	4 Hrs	50	2
BP208P	Pharmaceutical Organic Chemistry I – Practical	4	5	10	4 Hrs	15	35	4 Hrs	50	2
BP209P	Biochemistry– Practical	4	5	10	4 Hrs	15	35	4 Hrs	50	2
BP210P	Computer Applications in Pharmacy – Practical	2	10	15	2 Hrs	25	---	---	25	1
Total		36	115	205	22 Hrs	320	405	24 Hrs	725	29



BP206T. ENVIRONMENTAL SCIENCES (Theory)

30 hours

Course content:

Unit-I

10hours

The multidisciplinary nature of environmental studies.

Natural Resources.

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

a) Forest resources; b) Water resources; c) Mineral resources; d) Food resources; e) Energy resources; f) Land resources: Role of an individual in conservation of natural resources.

Unit-II

10hours

Ecosystems

Concept of an ecosystem.

Structure and function of an ecosystem.

Introduction, types, characteristic features, structure and function of the ecosystems: Forest ecosystem; Grassland ecosystem; Desert ecosystem; Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

Unit-III

10hours

Environmental Pollution: Air pollution; Water pollution; Soil pollution

Recommended Books (Latest edition):

- Environmental Science by Singh, Y.K., New Age International Pvt. Publishers, Bangalore.
- Environmental Biology by Agarwal, K.C., 2001, Nidi Publ. Ltd. Bikaner.
- The Biodiversity of India by Bharucha Erach, Mapin Publishing Pvt. Ltd., Ahmedabad, India.
- Hazardous Waste Incineration by Brunner R.C., 1989, McGraw Hill Inc.
- Marine Pollution by Clark R.S., Clanderson Press Oxford.
- Environmental Encyclopedia, by Cunningham, W.P. Cooper, T.H., Gorhani, E. & Hepworth, M.T., Jaico Pub. House, Mumbai.
- Environmental Chemistry by De A.K., Wiley Eastern Ltd.
- Down of Earth, Centre for Science and Environment, Editor Sunita Narain.



THIRD SEMESTER*

Course Code	Name of the Course	No. of Hours/ week	Internal Assessment				End Semester Exams		Total Marks	Credit Points
			Continuous Mode	Sessional Exams		Total	Marks	Duration		
				Marks	Duration					
BP301T	Pharmaceutical Organic Chemistry II – Theory	4	10	15	1 Hr	25	75	3 Hrs	100	4
BP302T	Physical Pharmaceutics I – Theory	4	10	15	1 Hr	25	75	3 Hrs	100	4
BP303T	Pharmaceutical Microbiology – Theory	4	10	15	1 Hr	25	75	3 Hrs	100	4
BP304T	Pharmaceutical Engineering – Theory	4	10	15	1 Hr	25	75	3 Hrs	100	4
BP305P	Pharmaceutical Organic Chemistry II – Practical	4	5	10	4 Hrs	15	35	4 Hrs	50	2
BP306P	Physical Pharmaceutics I – Practical	4	5	10	4 Hrs	15	35	4 Hrs	50	2
BP307P	Pharmaceutical Microbiology – Practical	4	5	10	4 Hrs	15	35	4 Hrs	50	2
BP308P	Pharmaceutical Engineering – Practical	4	5	10	4 Hrs	15	35	4 Hrs	50	2
KVE301	Universal Human Values and Professional Ethics**	3	20	30	1 Hr	50	100	3 Hrs	150	3
Total		35	80	130	21 Hrs	210	540	31 Hrs	750	27

*The lateral entry students taking admission directly to second year shall compulsorily appear for and pass the Communications Skill Subject Examination in the Third Semester.

Human values & Professional Ethics will be offered as a **compulsory course for which passing marks shall be 30% in End Semester Examination and 40% in aggregate.



KVE301. UNIVERSAL HUMAN VALUES AND PROFESSIONAL ETHICS

30 Hours

Course Content:

UNIT-I

Course Introduction - Need, Basic Guidelines, Content and Process for Value Education
Understanding the need, basic guidelines, content and process for Value Education, Self-Exploration—what is it? - its content and process; 'Natural Acceptance' and Experiential Validation- as the mechanism for self-exploration, Continuous Happiness and Prosperity- A look at basic Human Aspirations, Right understanding, Relationship and Physical Facilities the basic requirements for fulfilment of aspirations of every human being with their correct priority, Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario, Method to fulfil the above human aspirations: understanding and living in harmony at various levels.

UNIT-II

Understanding Harmony in the Human Being - Harmony in Myself Understanding human being as a co-existence of the sentient 'I' and the material 'Body', Understanding the needs of Self ('I') and 'Body' - Sukh and Suvidha, Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer), Understanding the characteristics and activities of 'I' and harmony in 'I', Understanding the harmony of I with the Body: Sanyam and Swasthya; correct appraisal of Physical needs, meaning of Prosperity in detail, Programs to ensure Sanyam and Swasthya.

UNIT-III

Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship Understanding harmony in the Family- the basic unit of human interaction, Understanding values in human-human relationship; meaning of Nyaya and program for its fulfillment to ensure Ubhay-tripti; Trust (Vishwas) and Respect (Samman) as the foundational values of relationship, Understanding the meaning of Vishwas; Difference between intention and competence, Understanding the meaning of Samman, Difference between respect and differentiation; the other salient values in relationship, Understanding the harmony in the society (society being an extension of family): Samadhan, Samridhi, Abhay, Sah-astitva as comprehensive Human Goals, Visualizing a universal harmonious order in society Undivided Society (Akhand Samaj), Universal Order (Sarvabhaum Vyawastha)- from family to world family.



UNIT-IV

Understanding Harmony in the Nature and Existence - Whole existence as Co-existence
Understanding the harmony in the Nature, Interconnectedness and mutual fulfilment among the four orders of nature- recyclability and self-regulation in nature, Understanding Existence as Co-existence (Sah-Astitva) of mutually interacting units in all-pervasive space, Holistic perception of harmony at all levels of existence.

UNIT-V

Implications of the above Holistic Understanding of Harmony on Professional Ethics
Natural acceptance of human values, Definitiveness of Ethical Human Conduct, Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order, Competence in Professional Ethics: a) Ability to utilize the professional competence for augmenting universal human order, b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems, technologies and management models, Case studies of typical holistic technologies, management models and production systems, Strategy for transition from the present state to Universal Human Order: a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers, b) At the level of society: as mutually enriching institutions and organizations.

Recommended books:

- A Foundation Course in Human Values and Professional Ethics by R.R. Gaur, R Sangal, G P. Bagaria, 2009.
- Energy & Equity by Ivan Illich, 1974, the Trinity Press, Worcester, and Harper Collins, USA.
- Small Is Beautiful: A Study of Economics As If People Mattered by E.F. Schumacher, 1973, Blond & Briggs, Britain.
- How the Other Half Dies by Susan George, 1976, Penguin Press. Reprinted 1986, 1991.
- Limits to Growth – Club of Rome's report by Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Universe Books.
- Jeevan Vidya Ek Parichay by A. Nagraj, 1998, Divya Path Sansthan, Amarkantak.
- Science and Humanism by P.L. Dhar, RR Gaur, 1990, Commonwealth Publishers.
- Human Values by A.N. Tripathy, 2003, New Age International Publishers.
- How to Practice Natural Farming by Subhas Palekar, 2000, Pracheen (Vaidik) Krishi Tantra Shodh, Amravati.
- Fundamentals of Ethics for Scientists & Engineers by E G Seebauer & Robert L. Berry, 2000, Oxford University Press.
- Engineering Ethics (including Human Values) by M Govindrajran, S Natrajan & V.S. Senthil Kumar, Eastern Economy Edition, Prentice Hall of India Ltd.
- Foundations of Ethics and Management by B.P. Banerjee, Excel Books.



FIFTH SEMESTER

Course Code	Name of the Course	No. of Hours/ week	Internal Assessment				End Semester Exams		Total Marks	Credit Points
			Continuous Mode	Sessional Exams		Total	Marks	Duration		
				Marks	Duration					
BP501T	Medicinal Chemistry II – Theory	3	10	15	1 Hr	25	75	3 Hrs	100	4
BP502T	Industrial Pharmacy I – Theory	3	10	15	1 Hr	25	75	3 Hrs	100	4
BP503T	Pharmacology II – Theory	3	10	15	1 Hr	25	75	3 Hrs	100	4
BP504T	Pharmacognosy and Phytochemistry	3	10	15	1 Hr	25	75	3 Hrs	100	4
BP505T	Pharmaceutical Jurisprudence – Theory	3	10	15	1 Hr	25	75	3 Hrs	100	4
BP506P	Industrial Pharmacy I – Practical	4	5	10	4 Hrs	15	35	4 Hrs	50	2
BP507P	Pharmacology II – Practical	4	5	10	4 Hrs	15	35	4 Hrs	50	2
BP508P	Pharmacognosy and Phytochemistry II – Practical	4	5	10	4 Hrs	15	35	4 Hrs	50	2
BP509P	Report on Hospital Training-I	-	-	-	-	-	100	-	100	2
Total		27	65	105	17 Hrs	170	580	27 Hrs	750	28



BP505T. PHARMACEUTICAL JURISPRUDENCE (Theory)

45 Hours

Course Content:

Unit-I

10 Hours

Drugs and Cosmetics Act, 1940 and its rules 1945:

Objectives, Definitions, Legal definitions of schedules to the Act and Rules.

Import of drugs – Classes of drugs and cosmetics prohibited from import, Import under license or permit. Offences and penalties.

Manufacture of drugs – Prohibition of manufacture and sale of certain drugs,

Conditions for grant of license and conditions of license for manufacture of drugs, Manufacture of drugs for test, examination and analysis, manufacture of new drug, loan license and repacking license.

Unit-II

10 Hours

Drugs and Cosmetics Act, 1940 and its rules 1945

Detailed study of Schedule G, H, M, N, P, T, U, V, X, Y, Part XII B, Sch F & DMR (OA)

Sale of Drugs – Wholesale, Retail sale and restricted license. Offences and penalties.

Labeling & Packing of drugs- General labeling requirements and specimen labels for drugs and cosmetics, List of permitted colors. Offences and penalties.

Administration of the Act and Rules– Drugs Technical Advisory Board, Central drugs Laboratory, Drugs Consultative Committee, Government drug analysts, licensing authorities, controlling authorities, Drugs Inspectors.

Unit-III

10 Hours

Pharmacy Act-1948: Objectives, Definitions, Pharmacy Council of India; its constitution and functions, Education Regulations, State and Joint state pharmacy councils; constitution and functions, Registration of Pharmacists, Offences and Penalties.

Medicinal and Toilet Preparation Act-1955: Objectives, Definitions, Licensing, Manufacture In bond and Outside bond, Export of alcoholic preparations, Manufacture of Ayurvedic, Homeopathic, Patent & Proprietary Preparations. Offences and Penalties.

Narcotic Drugs and Psychotropic substances Act-1985 and Rules: Objectives, Definitions, Authorities and Officers, Constitution and Functions of narcotic & Psychotropic Consultative Committee, National Fund for Controlling the Drug Abuse, Prohibition, Control and Regulation, opium poppy cultivation and production of poppy straw, manufacture, sale and export of opium, Offences and Penalties.



Unit-IV**08 Hours**

Study of Salient Features of Drugs and Magic Remedies Act and its rules: Objectives, Definitions, Prohibition of certain advertisements, Classes of Exempted advertisements, Offences and Penalties.

Prevention of Cruelty to animals Act-1960: Objectives, Definitions, Institutional Animal Ethics Committee, CPCSE guidelines for Breeding and Stocking of Animals, Performance of Experiments, Transfer and acquisition of animals for experiment, Records, Power to suspend or revoke registration, Offences and Penalties.

National Pharmaceutical Pricing Authority: Drugs Price Control Order (DPCO)-2013. Objectives, Definitions, Sale prices of bulk drugs, Retail price of formulations, Retail price and ceiling price of scheduled formulations, National List of Essential Medicines (NLEM).

Unit-V**07 Hours**

Pharmaceutical Legislations - A brief review, Introduction, Study of drugs enquiry committee, Health survey and development committee, Hathi committee and Mudaliar committee.

Code of Pharmaceutical ethics - Definition, Pharmacist in relation to his job, trade, medical profession and his profession, Pharmacist's oath.

Medical Termination of Pregnancy Act

Right to Information Act

Introduction to Intellectual Property Rights (IPR)

Recommended books: (Latest Edition)

- Forensic Pharmacy by B. Suresh, Birla Publication Pvt. Ltd., Delhi.
- Textbook of Forensic Pharmacy by B.M. Mittal, Vallabh Prakashan, Delhi.
- Handbook of Drug Law by M.L. Mehra, the University Book Agency, Lucknow.
- A Textbook of Forensic Pharmacy by N.K. Jain, Vallabh Prakashan, Delhi.
- Drugs and Cosmetics Act/Rules, Govt. of India publications.
- Medicinal and Toilet Preparations Act 1955, Govt. of India Publications.
- Narcotic Drugs and Psychotropic Substances Act, Govt. of India Publications.
- Drugs and Magic Remedies Act, Govt. of India Publication.
- Bare Acts of the Laws.
- Intellectual Property Rights in Pharmaceutical Industry: Theory and Practice by B. Subba Rao and P.V. Appaji, PharmaMed Press, Hyderabad.



8. ER-2020 D.Pharm Syllabus – Part II

S. No.	Course Code	Name of the Course	Total Theory / Practical Hours	Total Tutorial Hours	Theory / Practical Hours per Week	Tutorial Hours per Week
1.	ER20-21T	Pharmacology – Theory	75	25	3	1
2.	ER20-21P	Pharmacology – Practical	50	-	2	-
3.	ER20-22T	Community Pharmacy & Management – Theory	75	25	3	1
4.	ER20-22P	Community Pharmacy & Management – Practical	75	-	3	-
5.	ER20-23T	Biochemistry & Clinical Pathology – Theory	75	25	3	1
6.	ER20-23P	Biochemistry & Clinical Pathology – Practical	50	-	2	-
7.	ER20-24T	Pharmacotherapeutics – Theory	75	25	3	1
8.	ER20-24P	Pharmacotherapeutics – Practical	25	-	1	-
9.	ER20-25T	Hospital & Clinical Pharmacy – Theory	75	25	3	1
10.	ER20-25P	Hospital & Clinical Pharmacy – Practical	25	-	1	-
11.	ER20-26T	Pharmacy Law & Ethics	75	25	3	1

PHARMACY LAW AND ETHICS – THEORY

Course Code: ER20-26T

75 Hours (3 Hours/week)

Scope: This course is designed to impart basic knowledge on several important legislations related to the profession of pharmacy in India

Course Objectives: This course will discuss the following

1. General perspectives, history, evolution of pharmacy law in India
2. Act and Rules regulating the profession and practice of pharmacy in India
3. Important code of ethical guidelines pertaining to various practice standards
4. Brief introduction to the patent laws and their applications in pharmacy

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

1. Describe the history and evolution of pharmacy law in India
2. Interpret the act and rules regulating the profession and practice of pharmacy in India
3. Discuss the various codes of ethics related to practice standards in pharmacy
4. Interpret the fundamentals of patent laws from the perspectives of pharmacy

Chapter	Topics	Hours
1	General Principles of Law, History and various Acts related to Drugs and Pharmacy profession	2
2	Pharmacy Act-1948 and Rules: Objectives, Definitions, Pharmacy Council of India; its constitution and functions, Education Regulations, State and Joint state pharmacy councils, Registration of Pharmacists, Offences and Penalties. Pharmacy Practice Regulations 2015	5
3	Drugs and Cosmetics Act 1940 and Rules 1945 and New Amendments Objectives, Definitions, Legal definitions of schedules to the Act and Rules Import of drugs – Classes of drugs and cosmetics prohibited from import, Import under license or permit.	23



	<p>Manufacture of drugs – Prohibition of manufacture and sale of certain drugs, Conditions for grant of license and conditions of license for manufacture of drugs, Manufacture of drugs for test, examination and analysis, manufacture of new drug, loan license and repacking license.</p> <p>Study of schedule C and C1, G, H, H1, K, P, M, N, and X.</p> <p>Sale of Drugs – Wholesale, Retail sale and Restricted license, Records to be kept in a pharmacy Drugs Prohibited for manufacture and sale in India</p> <p>Administration of the Act and Rules – Drugs Technical Advisory Board, Central Drugs Laboratory, Drugs Consultative Committee, Government analysts, licensing authorities, controlling authorities, Drug Inspectors.</p>	
4	<p>Narcotic Drugs and Psychotropic Substances Act 1985 and Rules Objectives, Definitions, Authorities and Officers, Prohibition, Control and Regulation, Offences and Penalties.</p>	2
5	<p>Drugs and Magic Remedies (Objectionable Advertisements) Act 1954 Objectives, Definitions, Prohibition of certain advertisements, Classes of Exempted advertisements, Offences and Penalties.</p>	2
6	<p>Prevention of Cruelty to Animals Act-1960: Objectives, Definitions, CPCSEA - brief overview, Institutional Animal Ethics Committee, Breeding and Stocking of Animals, Performance of Experiments, Transfer and Acquisition of animals for experiment, Records, Power to suspend or revoke registration, Offences and Penalties.</p>	2
7	<p>Poisons Act-1919: Introduction, objective, definition, possession, possession for sales and sale of any poison, import of poisons</p>	2
8	<p>FSSAI (Food Safety and Standards Authority of India) Act and Rules: brief overview and aspects related to manufacture, storage, sale, and labelling of Food Supplements</p>	2



9	National Pharmaceutical Pricing Authority: Drugs Price Control Order (DPCO) - 2013. Objectives, Definitions, Sale prices of bulk drugs, Retail price of formulations, Retail price and ceiling price of scheduled formulations, Pharmaceutical Policy 2002, National List of Essential Medicines (NLEM)	5
10	Code of Pharmaceutical Ethics: Definition, ethical principles, ethical problem solving, registration, code of ethics for Pharmacist in relation to his job, trade, medical profession and his profession, Pharmacist's oath.	5
11	Medical Termination of Pregnancy Act and Rules – basic understanding, salient features, and Amendments	2
12	Role of all the government pharma regulator bodies – Central Drugs Standards Control Organization (CDSCO), Indian Pharmacopoeia Commission (IPC)	1
13	Good Regulatory practices (documentation, licenses, renewals, e-governance) in Community Pharmacy, Hospital pharmacy, Pharma Manufacturing, Wholesale business, inspections, import, export of drugs and medical devices	3
14	Introduction to BCS system of classification, Basic concepts of Clinical Trials, ANDA, NDA, New Drug development, New Drugs and Clinical Trials Rules, 2019. Brand v/s Generic, Trade name concept, Introduction to Patent Law and Intellectual Property Rights, Emergency Use Authorization	7
15	Blood bank – basic requirements and functions	2
16	Clinical Establishment Act and Rules – Aspects related to Pharmacy	2
17	Biomedical Waste Management Rules 2016 – Basic aspects, and aspects related to pharma manufacture to disposal of pharma / medical waste at homes, pharmacies, and hospitals	2
18	Bioethics - Basic concepts, history and principles. Brief overview of ICMR's National Ethical Guidelines for Biomedical and Health Research involving human participants	2
19	Introduction to the Consumer Protection Act	1
20	Introduction to the Disaster Management Act	1
21	Medical Devices – Categorization, basic aspects related to manufacture and sale	2



QUALIFYING PAPERBCA**ENVIRONMENTAL STUDIES (CODE-008)****UNIT-1: THE MULTIDISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES**

Definition, Scope and Importance, Need for Public Awareness.

UNIT-2: 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 forests 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 nonrenewable 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

UNIT-3: ECOSYSTEMS

- ❖ Concept of an ecosystem
- ❖ Structure and function of an ecosystem
- ❖ Producers, consumers and decomposers
- ❖ Energy flow in the ecosystem
- ❖ Ecological succession



- ❖ Food chains, food webs and ecological pyramids
- ❖ Introduction, types, characteristic features, structure and function of the following ecosystem: -
 - a) Forest ecosystem
 - b) Grassland ecosystem
 - c) Desert ecosystem
 - d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

UNIT-4: BIODIVERSITY AND ITS CONSERVATION

- ❖ Introduction – Definition: genetic, species and ecosystem diversity.
- ❖ Biogeographical classification of India
- ❖ Value of biodiversity: Consumptive use, productive use, social, ethical, and aesthetic and option values.
- ❖ Biodiversity at global, National and local levels.
- ❖ India as a mega-diversity nation
- ❖ Hot-spots of biodiversity.
- ❖ Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts.
- ❖ Endangered and endemic species of India
- ❖ Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

UNIT-5: ENVIRONMENTAL POLLUTION

DEFINITION:

- ❖ Causes, effects and control measures of: -
 - a) Air pollution
 - b) Water pollution
 - c) Soil pollution
 - d) Marine pollution
 - e) Noise pollution
 - f) Thermal pollution
 - g) Nuclear pollution
- ❖ Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
- ❖ Role of an individual in prevention of pollution
- ❖ Pollution case studies
- ❖ Disaster Management: Floods, earthquake, cyclone and landslides.

UNIT-6: SOCIAL ISSUES AND THE ENVIRONMENT

- ❖ From Unsustainable to Sustainable development
- ❖ Urban problems related to energy.
- ❖ Water conservation, rain water harvesting, watershed management
- ❖ Resettlement and rehabilitation of people; its problems and concerns. Case Studies



- ❖ Environmental Ethics: Issues and possible solutions.
- ❖ Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies.
- ❖ Wasteland reclamation.
- ❖ Consumerism and waste products
- ❖ Environment Protection Act.
- ❖ Air (Prevention and Control of Pollution) Act
- ❖ Water (Prevention and Control of Pollution) Act
- ❖ Wildlife Protection Act
- ❖ Forest Conservation Act
- ❖ Issues involved in enforcement of environmental legislation
- ❖ Public awareness

UNIT-7: HUMAN POPULATION AND THE ENVIRONMENT

- ❖ Population growth, variation among nations.
- ❖ Population explosion: Family Welfare Programme.
- ❖ Environment and human health
- ❖ Human Rights
- ❖ Value Education
- ❖ Women and Child Welfare
- ❖ Role of Information Technology in Environment and human health
- ❖ Case Studies

UNIT-8: FIELD WORK

- ❖ Visit to a local area to document environmental assets-river / forest / grassland / hill / mountain.
- ❖ Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
- ❖ Study of common plants, insects, birds.
- ❖ Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours).



**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, UTTAR PRADESH,
LUCKNOW**



EVALUATION SCHEME AND SYLLABI

For

B. Tech. 1ST Year

Common to All Branches

EXCEPT Agriculture Engineering and Biotechnology

Effective from the Session: 2022-23

DR. A.P.J ABDUL KALAM TECHNICAL UNIVERSITY UTTAR PRADESH.
Sec-11, Jankipuram Vistar, Lucknow - 226031, Uttar Pradesh, India



B. Tech. First Year, Semester- I
(All Branches except Agriculture Engineering and Biotechnology)

3- WEEKS STUDENT INDUCTION PROGRAMME in the beginning of the session													
										Evaluation Scheme			
SN	Subject Code	Subject Name	Type	Category	Period			Sessional Component		Sessional (SW) (TS/PS)	End Semester Examination (ESE)	Total	Credit
					L	T	P	CT	TA	CT+TA	TE/PE	SW+ESE	Cr
1.	BAS101/ BAS102	Engineering Physics/ Engineering Chemistry	T	BS	3	1	0	20	10	30	70	100	4
2.	BAS103	Engineering Mathematics-I	T	BS	3	1	0	20	10	30	70	100	4
3.	BEE101/ BEC101	Fundamentals of Electrical Engineering/ Fundamentals of Electronics Engineering	T	ES	2	1	0	20	10	30	70	100	3
4.	BCS101/ BME101	Programming for Problem Solving/ Fundamentals of Mechanical Engineering	T	ES	2	1	0	20	10	30	70	100	3
5.	BAS104/ BAS105	Environment and Ecology/ Soft Skills	T	BS/ HS	3	0	0	20	10	30	70	100	3
6.	BAS151/ BAS152	Engineering Physics Lab/ Engineering Chemistry Lab	P	BS	0	0	3	-	50	50	50	100	1
7.	BEE151/ BEC151	Basic Electrical Engineering Lab/ Basic Electronics Engineering Lab	P	ES	0	0	3	-	50	50	50	100	1
8.	BCS151/ BAS155	Programming for Problem Solving Lab/ English Language Lab	P	ES/ HS	0	0	3	-	50	50	50	100	1
9.	BCE151 / BWS151	Engineering Graphics & Design Lab/ Workshop Practice Lab	P	ES	0	1	3	-	50	50	50	100	2
					13	5	12			350	550	900	22

Abbreviation Used:

BS: Basic Science Course

ES: Engineering Science Course

HS: Humanities and Social Science Course

VA: Value Added Course



BAS104 / BAS204: ENVIRONMENT AND ECOLOGY

Course Objectives:

1. Aims and objectives of environmental education emphasize the relationship between man and the environment and educate young people about the importance of nature and the environment.
2. Environmental education aims to **impart ecological knowledge** and promote environmentally conscious behavior towards nature.
3. It encourages young minds to take **responsibility for protecting** the natural environment protection through information and knowledge and to develop environmental awareness.
4. Incidentally, promoting awareness and a sense of respect for nature leads to a comprehensive understanding of the environment and a reasonable attitude towards protecting it.
5. The focus of environmental education is Awareness, Knowledge, Attitude, Skills, Capacity Building and Participation.

Topics	Contact Hours
Unit-1	8
Environment: Definition, Types of Environment, Components of environment, Segments of environment, Scope and importance, Need for Public Awareness. Ecosystem: Definition, Types of ecosystem, Structure of ecosystem, Food Chain, Food Web, Ecological pyramid. Balance Ecosystem. Effects of Human Activities such as Food, Shelter, Housing, Agriculture, Industry, Mining, Transportation, Economic and Social security on Environment, Environmental Impact Assessment, Sustainable Development.	
Unit-2	8
Natural Resources: Introduction, Classification. Water Resources; Availability, sources and Quality Aspects, Water Borne and Water Induced Diseases, Fluoride and Arsenic Problems in Drinking Water. Mineral Resources; Material Cycles; Carbon, Nitrogen and Sulfur cycles. Energy Resources; Conventional and Non conventional Sources of Energy. Forest Resources; Availability, Depletion of Forests, Environment impact of forest depletion on society.	
Unit-3	8
Pollution and their Effects; Public Health Aspects of Environmental; Water Pollution, Air Pollution, Soil Pollution, Noise Pollution, Solid waste management.	
Unit-4	8
Current Environmental Issues of Importance; Global Warming, Green House Effects, Climate Change, Acid Rain, Ozone Layer Formation and Depletion, Population Growth and Automobile pollution, Burning of paddy straw.	



Unit-5	8
Environmental Protection; Environmental Protection Act 1986, Initiatives by Non Governmental Organizations (NGO's), Human Population and the Environment: Population growth, Environmental Education, Women Education.	

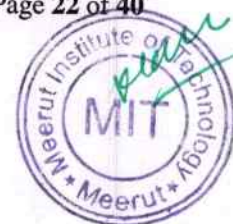
Course Outcomes:

Upon completion of the course, the student will be able to:

	Course Outcomes	Bloom's Level
CO-1	Gain in-depth knowledge on natural processes that sustain life, and govern economy.	K2
CO-2	Estimate and Predict the consequences of human actions on the web of life, global economy and quality of human life.	K3
CO-3	Develop critical thinking for shaping strategies (scientific, social, economic and legal) for environmental protection and conservation of biodiversity, social equity and sustainable development.	K4
CO-4	Acquire values and attitudes towards understanding complex environmental-economic social challenges, and participate actively in solving current environmental problems and preventing the future ones.	K3
CO-5	Adopt sustainability as a practice in life, society and industry.	K3

Reference Books:

1. Textbook of Environment and Ecology by Dave, Katewa & Singh, 2nd Edition, Cengage Learning India Pvt Ltd Delhi.
2. Environmental Studies by S Deswal, Dhanpat Rai & Co.
3. Environmental Studies by VK Ahluwalia, 2nd Edition, TERI Press, New Delhi.
4. Environmental Studies by R Rajgopalan, Oxford University Press.
5. Environment & Ecology by Singh & Malviya, Acme Learning



DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY LUCKNOW



Evaluation Scheme & Syllabus

For

B.Tech. 2nd Year

- Computer Science & Engineering
- Computer Engineering
- Computer Science
- Computer Science and Engineering (Cyber Security)
- Computer Science and Information Technology
- Information Technology
- Computer Science and Engineering (Artificial Intelligence)
- Computer Science and Engineering (Artificial Intelligence & Machine Learning)
- Computer Science and Engineering (Data Science)
- Computer Science and Engineering (Internet of Things)
- Artificial Intelligence & Data Science
- Artificial Intelligence & Machine Learning
- Computer Science & Design
- Computer Science & Business Systems

(Effective from the Session: 2023-24)

DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY LUCKNOW



SEMESTER –III

SN	Subject Code	Subject	Type	Category	Periods			Sessional Component		Sessional (SW) (TS/PS) CT+TA	End Semester Examination (ESE) TE/PE	Total SW+ESE	Cred Cr
					L	T	P	CT	TA				
1	BOE3** / BAS303	Science Based Open Elective/BSC (Maths-III/Math IV/ Math V)	T	ES/BS	3	1	0	20	10	30	70	100	4
2	BVE301 / BAS301	Universal Human Value and Professional Ethics/ Technical Communication	T	VA/HS	2	1	0	20	10	30	70	100	3
3	BCS301	Data Structure	T	PC	3	1	0	20	10	30	70	100	4
4	BCS302	Computer Organization and Architecture	T	PC	3	1	0	20	10	30	70	100	4
5	BCS303	Discrete Structures & Theory of Logic	T	PC	2	1	0	20	10	30	70	100	3
6	BCS351	Data Structure Lab	P	PC	0	0	2		50	50	50	100	1
7	BCS352	Computer Organization and Architecture Lab	P	PC	0	0	2		50	50	50	100	1
8	BCS353	Web Designing Workshop	P	PC	0	0	2		50	50	50	100	1
10	BCC301 / BCC302	Cyber Security/Python programming	T	VA	2	0	0	20	10	30	70	100	2
11	BCC351	Internship Assessment /Mini Project*	P							100		100	2
		Total			15	5	6						25

- **Mathematics –III** for CE / ENV and allied branches
- **Mathematics-IV** for Computer/Electronics/Electrical & allied Branches, Mechanical & Allied Branches Textile/Chemical & allied Branches
- **Mathematics-V** for Bio Technology / Agriculture Engineering



Universal Human Values and Professional Ethics

**BVE301 / BVE401/
BVE301H / BVE401H**

L	T	P	C
2	1	0	3

Objectives:

1. To help students distinguish between values and skills, and understand the need, basic guidelines, content, and process of value education.
2. To help students initiate a process of dialog within themselves to know what they really want to be in their life and profession
3. To help students understand the meaning of happiness and prosperity for a human being.
4. To facilitate the students to understand harmony at all the levels of human living, and live accordingly.
5. To facilitate the students in applying the understanding of harmony in existence in their profession and lead an ethical life

Course Outcome:

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

1. Understand the significance of value inputs in a classroom, distinguish between values and skills, understand the need, basic guidelines, content, and process of value education, explore the meaning of happiness and prosperity, and do a correct appraisal of the current scenario in the society
2. Distinguish between the Self and the Body, and understand the meaning of Harmony in the Self and the Co-existence of Self and Body.
3. Understand the value of harmonious relationships based on trust, respect, and other naturally acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society
4. Understand the harmony in nature and existence, and workout their mutually fulfilling participation in nature.
5. Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.

Catalogue Description

Every human being has two sets of questions to answer for his life: a) what to do? and, b) how to do? The first set pertains to the value domain, and the other to the skill domain. Both are complimentary, but the value domain has a higher priority. Today, education has become more and more skill-biased, and hence, the basic aspiration of a human being, that is to live with



happiness and prosperity, gets defeated, inspite of abundant technological progress. This course is aimed at giving inputs that will help to ensure the right understanding and right feelings in the students in their lives and professions, enabling them to lead an ethical life. In this course, the students learn the process of self-exploration, the difference between the Self and the Body, the naturally acceptable feelings in relationships in a family, the comprehensive human goal in society, the mutual fulfillment in nature, and the co-existence in existence. As a natural outcome of such inputs, they are able to evaluate an ethical life and profession ahead.

UNIT-1 Introduction to Value Education

Understanding the need, basic guidelines, content, and process for Value Education, Self-Exploration-what is it? - its content and process; 'Natural Acceptance' and Experiential Validation -as the mechanism for self-exploration, Continuous Happiness, and Prosperity-A look at basic Human Aspirations, Right understanding, Relationship, and Physical Facilities-the basic requirements for fulfillment of aspirations of every human being with their correct priority, Understanding Happiness and Prosperity correctly - A critical appraisal of the current scenario, Method to fulfill the above human aspirations: understanding and living in harmony at various levels.

UNIT-2 Understanding Harmony in the Human Being

Understanding human being as a co-existence of the sentient 'I' and the material 'Body', Understanding the needs of Self ('I') and 'Body' - Sukh and Suvidha, Understanding the Body as an instrument of 'I' (I being the doer, seer, and enjoyer), Understanding the characteristics and activities of 'I' and harmony in 'I', Understanding the harmony of I with the Body: Sanyam and Swasthya; correct appraisal of Physical needs, the meaning of Prosperity in detail, Programs to ensure Sanyam and Swasthya.

UNIT-3 Understanding Harmony in the Family and Society

Harmony in Human-Human Relationship Understanding harmony in the Family-the basic unit of human interaction, Understanding values in the human-human relationship; meaning of Nyaya and program for its fulfillment to ensure Ubhay-tripti; Trust (Vishwas) and Respect(Samman) as the foundational values of relationship, Understanding the meaning of Vishwas; Difference between intention and competence, Understanding the meaning of Samman, Difference between respect and differentiation; the other salient values in a relationship, Understanding the harmony in the society (society being an extension of the family): Samadhan, Samridhi, Abhay, Sahastitva as comprehensive Human Goals, Visualizing a universal harmonious order in society- Undivided Society (Akhand Samaj), Universal Order (Sarvabhaum Vyawastha) - from family to world family!.

UNIT-4 Understanding Harmony in Nature and Existence



Whole existence as Co-existence Understanding the harmony in Nature, Inter connectedness, and mutual fulfillment among the four orders of nature- recyclability and self-regulation in nature, Understanding Existence as Co-existence (Sah-astitva) of mutually interacting units in all-pervasive space, Holistic perception of harmony at all levels of existence.

UNIT-5 Implications of the above Holistic Understanding of Harmony on Professional Ethics

Natural acceptance of human values, Definitiveness of Ethical Human Conduct, Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order, Competence in Professional Ethics: a) Ability to utilize the professional competence for augmenting universal human order, b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems, technologies, and management models, Case studies of typical holistic technologies, management models and production systems, Strategy for the transition from the present state to Universal Human Order: a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers, b) At the level of society: as mutually enriching institutions and organizations.

Text Book

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Mode of Evaluation:

Based on participation of student in classroom discussions/Self-assessment/Peer assessment/Assignments/ Seminar/Continuous Assessment Test/Semester End Exam Socially relevant project/Group Activities/Assignments may be given importance in this course

Guidelines and Content for Practice Sessions

After every two lectures, there will be a one/two-hour practice session. This is meant to provide an opportunity to the students for carrying out self-exploration on the salient propositions made during the lectures. It is to clarify the concepts being introduced and connect them to their everyday life. Further it will also be utilized to make them evaluate their propensities and pre-conditionings vis-à-vis their 'natural acceptance' using examples and issues relevant to them in their day-to-day life situations. Keeping this objective in mind, the following exercises are being proposed for the practice sessions. These are sequentially arranged according to the lecture material. With each of these exercises, the expected outcome is also indicated to facilitate the teacher.

In the text-book, a larger set of practice exercises for self-exploration are given after each chapter, particularly in part 2, of test your understanding. A list of such exercises and the experiences of some of the students and teachers who have done these exercises is also available on the web-site. The teacher may select exercises from this set as well as develop appropriate exercises on their own. Ultimately, it is the teacher who has to use his/ her own creativity to make the best use of these sessions to guide the students towards the expected outcome.

Practice Sessions for Module 1 – Introduction to Value Education

PS 1

Introduce yourself in detail:

- Share about yourself, your family and your friends.
- Share salient achievements and failures in your life.
- Share how do you presently differentiate between right and wrong.
- Share your aspirations from life. Share what a fulfilling life means for you. For this, you may list out the top five points that occur to you when you think of a fulfilling life. While making the list, please consider your entire life, not just the present stage of your life (youth, middle age, old age, etc.). How do you expect to fulfil these aspirations and live a life of fulfillment?

What are your observations and conclusions from your life experiences so far?

Expected Outcome: The students start exploring themselves; get comfortable with each other and with the teacher and start appreciating the need and relevance of the course.



PS 2

1. Watch the video "Story of Stuff". It is a documentary about the materials economy – its motivation, process and outcome. It has been produced by a set of concerned people at storyofstuff.org, USA (source: <http://storyofstuff.org/movies/story-of-stuff/>). Discuss

- The activities and efforts made by the people shown in the video
- The outcomes of these efforts
- How their activities are motivated by their notion of happiness (physical facility = happiness. More shopping, physical facility = more happiness)? Is this and any other notions of happiness their own notions or they are programmed by advertisements, others? Does this notion seem to be true or is it getting the people into the loop of more and more physical facility only?
- Do reflect on your own notion of happiness – is it your own notion or is it borrowed from others?

2. Make a list of your desires. Now for each item on the list, find out what would be necessary to fulfil it, i.e. will it require:

- Right understanding?
- Relationship (right feeling)?
- Physical facility?

Desire Fulfilled by

	Right understanding	Fulfilment in relationship	Physical facility
Good health	?	?	Yes (food etc.)
Lots of friends	?	Yes	?
Other desires... (we have just put some examples above to start your list)			
Your priority	1, 2 or 3?	1, 2 or 3?	1, 2 or 3?

If it requires more than one of these, mark which one is the higher priority. Explain your conclusion from this exercise.

- Can all your aspirations be fulfilled just by physical facility?
- Is right understanding required for the fulfilment of none, some or all of your aspirations?
- Is relationship required for the fulfilment of none, some or all of your aspirations?
- Can one be substituted for the other (e.g. can right understanding be substituted by physical facility). If they are distinct things, what are their key characteristics (or what are the key differences between right understanding, relationship and physical facility)?
- What is the priority order of these three?
- In your education, should all three be included? To put it another way, should your education be only about skills or should it be about skills that are guided by human values?
- The problems that you see around you – are they more due to lack of physical facility or more due to lack of right understanding and right feeling?

Keep this list handy, because we intend to use the same list in future practice sessions as well.

Expected Outcome: The students start finding that right understanding is the basic need of human being; followed by relationship and physical facility. Understanding about all these three needs to be included in education. In fact, technical education without inculcation of human values can generate more problems than solutions. They appreciate the need to understand happiness and make a programme for it. They also start feeling that lack of understanding of



human values is the root cause of all problems and the sustained solution could emerge only through understanding of human values and value-based living.

PS3

1. Observe that you have the faculty of 'Natural Acceptance', based on which you can verify what is right or what is not right for you. Of course, you may or may not be generally referring to your natural acceptance for making decisions. So, find out if you get a spontaneous answer when you ask yourself basic questions, like the ones mentioned below:

- a. You want to live in relationship (harmony) with others or You want to live in opposition with others?
- b. In relationship, you want to live with the feeling of respect or disrespect (for yourself and for others)?
- c. You want to nurture others or to exploit others?

Is your living in accordance with your natural acceptance or different from it? How do you feel when your living is in accordance with your natural acceptance; and when it is in contradiction to your natural acceptance?

2. Make a list of the problems in your family. For each problem, find out the most significant reason: is it related to lack of right understanding, lack of feelings in relationship or lack of physical facility? Also find out how much time and effort you have devoted for each in the last one week.

Expected Outcome: The students are able to see that self-verification on the basis of their natural acceptance (and experiential validation through living) is an effective way to verify what is right and what is wrong for them. They are able to see that, in many cases, their actual living is not in accordance with their natural acceptance. They are able to see that they are uncomfortable when their living is in contradiction with their natural acceptance; they are comfortable when they are living in accordance with their natural acceptance.

The students are able to see that, in most of the cases, lack of feeling in relationship is the major cause of problems in their family and with friends rather than the lack of physical facility. However, most persons give higher priority to physical facility in their life, giving a lower priority to or even ignoring relationship. They are so far not aware that right understanding, and right feeling on the basis of right understanding, is the primary need of human being.

Practice Sessions for Module 2 – Harmony in the Human Being

PS 4

1. Take the list of desires you made in PS2. Update it if required. Now classify the desires as being related to the need of the Self or need of the Body. If a desire appears to be related to both (needs of the Self and needs of the Body), look for the purpose, and split it into two or more sub-desires until you are able to see clearly whether the sub-desire is related to the need of the Self or the need of the Body.

From this exercise,

- a) Find out at least two key distinguishing features between the needs of the Self and the needs of the Body.



b) Roughly what percentage of your desires is related to the needs of the Self and what percentage is related to the needs of the Body?

2. Make a list of your activities from morning till night. Some of these are activities going on in you (the Self), some activities are going on in your Body and some activities involve both you (the Self) as well as your Body. Classify the list of activities in these three categories (see table, below).

Activity	In the Self	In the Body	Involving both the Self and the Body
Running		I made the decision to run. The Body is running	
Eating		I made the decision to eat. The Body is eating. The Body is getting the nutrition and I am getting the taste	
Thinking	I am thinking. My body is not involved		
Feeling excited	I am feeling excited	There is some effect on my Body also	Both,
me and my Body is involved			
Heartbeat		This is happening in the Body	
Blood circulation		This is happening in the Body	
Other activities...			

Write down your observations regarding:

a) The activities of the Self which do not involve the Body. Can you see that these activities are continuous?

b) Activities of the Body. Can you see that they involve some internal organs of the Body (like the heart and blood vessels)? Can you see that these activities are discontinuous or cyclic?

c) Activities that involve both, the Self as well as the Body (like climbing a staircase). In such activities, try to identify the role of the sense organs as well as the work organs.

Expected Outcome: The students are able to relate their desires to need of the Self and the Body distinctly. They are able to see that the Self and the Body are two distinct realities, and a large part of their desires are related to the need of the Self (and not the Body). They may also be able to conclude that while their efforts are mostly centered on physical facility, which can only fulfil the needs pertaining to the Body and not the Self. They may also see that they are going by the assumption that physical facility will fulfil the needs of the Self also.

The students are able to see that the Self and the Body are two distinct realities and there are three distinct types of activities going on – activities of the Self, activities of the Body and activities of the Body in which the decision of Self is involved. They are able to see that activities like understanding, desire, thought and selection are the activities of the Self; the activities like breathing, palpitation, blood circulation etc. are fully the activities of the Body, while the activities they do with their sense organs like hearing through ears, seeing through eyes, sensing through touch, tasting through tongue and smelling through nose or the activities they do with their work organs like hands, legs etc. are such activities that require the participation of both the Self and the Body.

PS5

1. It was mentioned that when you are consuming any physical facility, the following sequence applies:

Tasty-Necessary ☐ Tasty-Unnecessary ☐ Tasteless-Unnecessary ☐ Intolerable



Observe this sequence for at least five types of physical facility, say a tasty food, TV programs, your favourite music, etc.

In contrast, observe that any feeling in you is either naturally acceptable or not. If a feeling is naturally acceptable, you want it continuously; and if not naturally acceptable, you do not want it even for a moment.

What are your conclusions from this exercise? Is continuous happiness possible through sensation by consuming physical facility? What are the other options for continuity of happiness?

2. Observe your imagination for about 15 minutes. List down the object of your imagination at least once every minute. From this list or from directly observing your imagination, make a sequence diagram (as shown below).

Now write down your observations:

- a. Are you able to see your imagination all of the time or only some of the time?
- b. If you are able to see (be aware of) your imagination only some of the time, what do you think is the reason?
- c. Are all your imaginations well connected (one imagination leads logically to another imagination) or are there sudden changes from one subject to another subject or there are gaps in between one imagination and another imagination? What is the reason for this state of imagination?
- d. What are your observations from this exercise?

3. Take your list of desires. Revise it if you need to. For each desire, identify the primary source of motivation (sensation, preconditioning or natural acceptance). If there is any desire which has more than one source of motivation, split it into two or more desires. E.g. a desire for good clothes may be motivated by your natural acceptance (to protect the Body from excessive heat or cold) and also be motivated by the social preconditioning for the clothes of the latest fashion. In such a case, split the desire into two desires. Now, write down your observations:

- e. What percentage (approximately) of your desires is motivated by your natural acceptance? This will give you an idea of the percentage that you are self-organised. Keep in mind that natural acceptance is about purpose and it does not change with time, place or person.
- f. What percentage (approximately) of your desires is motivated by sensation or preconditioning? Now you can get an idea of the percentage that you are dependent or enslaved.
- g. What effort is necessary to be completely self-organised (if that is your goal)?

Expected Outcome: The students are able to see that all physical facility they use is required for a limited time in a limited quantity. Sensation through physical facility cannot be the source of continuous happiness. They are able to see that in case of feelings; they want continuity of the naturally acceptable feelings and they do not want feelings which are not naturally acceptable even for a single moment.

The students become aware of the activities of the Self and start finding their focus of attention at different moments. Also, they are able to see that many of their desires are coming from outside (through preconditioning or sensations) and are not based on their natural acceptance. They are able to find out their level of self-organisation and enslavement.



PS6

1. In the last 3 years, recall the times that your body has been ill (in disharmony). What steps were taken to restore the harmony of the Body?

Date(s) Illness or disharmony Type (Accident, viral infection, bacterial infection, lifestyle related disorder, any other) Steps taken Root Cause

If you were to take full responsibility for your body (i.e. you had the feeling of self-regulation), what kind of daily schedule would you have? Approximately how much time would you allocate for keeping your body in good health through:

- Healthy intake (food, air, water, sunlight, etc.)
- Timings for upkeep of the Body (sleeping and waking up time, excretion, bathing, etc.)
- Labour (production of physical facility)
- Exercise
- Balancing internal and external organs of body
- Regulating breathing of body
- Medicine
- Treatment

(Of course, you need to keep adequate time for studying, understanding, learning, behaviour, work etc.)

Do you think this schedule will make you more productive or less productive? What conclusions do you draw from this exercise?

2. Calculate the quantity required for a specific physical facility, say clothes, in your family. Now find out the quantity available. Is the quantity available less, equal or more than the quantity required? In that sense, do you feel prosperous or deprived (at least regarding that particular physical facility)? Do the same for other needs. For that you can make an inventory of everything in your home (or at least your room). How much of the physical facility is being rightly utilised? Discuss this with your family and work out your conclusions regarding:

- a. Meaning of prosperity
- b. The role of understanding (human being, the role of physical facility and the feeling of self-regulation)
- c. Ability of your family to identify its needs, with the required quantity

Expected Outcome: The students are able to list down activities related to proper upkeep of the Body and practice them in their daily routine. They are also able to appreciate the plants growing in and around the campus which can be beneficial in maintaining their health and even curing common ailments.

The students begin to recognise that the need for physical facility for nurturing, protection and right utilization of their body is limited in quantity. In cases where they are able to see that they have more than enough physical facility, they develop a feeling of prosperity. In cases of lack in physical facility, they start thinking about how to produce more than required physical facility by way of a mutually-enriching cyclic process (rather than through exploitation).

Practice Sessions for Module 3 – Harmony in the Family and Society



PS 7

1. Make a list of your family members and friends. Take the eight questions regarding evaluation of trust and reflect on the answers for each person in your list, one person at a time. First reflect on the four questions about natural acceptance (intention):

- 1a. I want to make myself happy.
- 2a. I want to make the other happy.
- 3a. The other wants to make herself/himself happy.
- 4a. The other wants to make me happy.

Next, reflect on the four questions about competence – your competence and their competence:

- 1b. I am always able to make myself happy
- 2b. I am always able to make the other happy
- 3b. The other is always able to make herself/himself happy
- 4b. The other is always able to make me happy

From this reflection, how many people are there with whom you have a feeling of trust on intention? Is the feeling unconditional and continuous? The indicators of unconditional, continuous trust on intention are:

- You never get irritated or angry with them
- You never have a feeling of opposition for them
- You are always thinking and making effort for their development

Now in your class group, share your findings and discuss:

- What you have understood about intention and competence – do you evaluate them separately?
- How you evaluate yourself and how you evaluate others – do you evaluate yourself on the basis of your intention and evaluate others on the basis of their competence?
- What is the result of such evaluation?
- What would be the result if you evaluated the intention and competence separately? Will it lead to a feeling of trust for each other?
- Reflect on some instances where you got irritated or angry with someone. What was the result of it? Can you recollect that you had a doubt on their intention? Try to call them and share your reflections with one or more of them.

Write down your conclusions from this exercise.

2. Show the video “Right Here Right Now”. It is a short film directed by Anand Gandhi about human behaviour and its propagation.

(Source: Part 1: <https://www.youtube.com/watch?v=OVAokeqQuFM>

Part 2: <https://www.youtube.com/watch?v=gIYJePEEnvUY>).

Discuss:

- a. Specific interactions shown in the video – are these interactions showing reaction or response?
- b. Reflect on your own interactions – what percentage of your interactions are reactions and what percentage are response?
- c. Is it desirable to have 100% response (and no reaction)? What effort is required for it?



Expected Outcome: The students are able to see that the natural acceptance (intention) of everyone is to be happy and make others happy! It is the competence that is lacking – it is lacking in themselves and it is lacking in others also.

Whenever they evaluate themselves on the basis of their intention and others on the basis of their competence, whenever they doubt the intention of the other, there is a feeling of opposition, irritation or anger. They conclude that I am a good person and other is a bad person! This is a major problem in their relationship with their family and friends.

As soon as they are able to see their own natural acceptance (intention), they are able to see that the other also has the same natural acceptance (intention), they have a feeling of being related and they start thinking in terms of mutual development. This is relieving for them and also relieving for the other.

They are able to distinguish between reaction and response; appreciate the need for 100% response in human-human interaction and make effort towards it.

PS 8

1. List out ten or more of your interactions with other people in your family and friends in the last one week. Now analyse these interactions:

a. From your side, was it over-evaluation, under/ otherwise evaluation or right evaluation of the other? In each interaction, were you comfortable within, uncomfortable within or unaware of your state?

b. Did they evaluate you rightly or they over evaluated or under/ otherwise evaluated you? In each interaction, were you comfortable within, uncomfortable within or unaware of your state?

2. Study the chart regarding differentiation (discrimination) and regarding respect (on the basis of the Self). Where has most of your effort been? Where would you like to put in your effort now? What effort, if any, is required from your side now?

Expected Outcome: The students are able to see that respect is the right evaluation (of intention and competence). Only right evaluation leads to fulfillment in relationship. Over evaluation leads to ego and under/ otherwise evaluation leads to depression.

They are able to see that many present-day problems in the family and society are side-effects of the lack of correct understanding of respect. This results into differentiation (discrimination) such as gender bias, generation gap, caste conflicts, class struggle, domination through power, communal violence, clash of interests, and so on.

Once they can see beyond the superficial differences at the level of body, physical facility, beliefs etc., they are able to see that the other is like me (at the level of the Self):

- The other has the same natural acceptance as me.
- The other has the same potential as me.
- The other has the same programme for happiness as me.

PS 9



1. What are your personal goals or values that you would like to make effort for? Discuss with your family and find out the goals of other members. Is there a common family goal? What are the goals being pursued by your workplace or educational institution? How much of these three sets of goals are aligned to each other? What is your role in the fulfilment of these three sets of goals?
2. Assuming that you would like to see your hostel/ educational institution/ workplace/ neighborhood as a model of human society, write down:
 - a. Its goal(s) – relate it to the four human goals and elaborate on what each goal means. Also develop some key indicators or measures which will show that the goals are realised
 - b. The system to achieve these goals – Make a comprehensive plan for the fulfilment of each goal. Relate it to the dimensions of human order.
3. Working on the dimension of Education-Sanskar and Sanyam-Health, suggest what programs can be taken up to ensure right nutrition of the child along with the right sanskar.

Expected Outcome: The students are able to see that as a family, a society, the comprehensive human goal is naturally acceptable:

- Right understanding and right feeling in every human being
- Prosperity in every family
- Fearlessness (trust) in society
- Co-existence (mutual fulfilment) in nature/existence

They are able to see that the systems required for their fulfilment include:

Education-Sanskar, Health-Self regulation, Production-Work, Justice-Preservation and Exchange-Storage.

Meaningful participation by every individual, every family, every family cluster... every village, town, city... country and the whole world is required in these systems for the human goals to be fulfilled.

They are also able to see that presently they do not have definite goals and their family goals are unknown or not clearly defined. The goals of their educational institution or workplace are articulated as vision-mission-goals-objectives-values etc. These various goals need to be aligned for them to appreciate, commit and fully participate in their fulfilment. Presently there is neither clarity nor alignment, so there is limited focused effort. They start to refine their goals and think about how to discuss them in their family, in their hostel, institution etc. and make more focused effort.

Practice Sessions for Module 4 – Harmony in the Nature (Existence)

PS 10

1. Watch the video “An Inconvenient Truth”. It is a 2006 documentary about global climate change presented by Former US Vice President Al Gore. He raises the question “What were you doing when you had the time to do something?” (Source: <http://an-inconvenient-truth.com/>). Discuss:

- a. State of the planet
- b. Root cause of the problems
- c. Comprehensive solution for the problems and your specific part in it



Take any one environmental issue in your neighbourhood/ village/ country and try to find out the root cause of it. [for instance, water scarcity, air pollution, food adulteration, etc.]. What exactly can you contribute as an individual, class or institution to the solution?

2. Observe the activity, innateness, natural characteristic and inheritance of at least two units in each of the four orders. Are you able to see that these orders are in a relationship of mutual fulfilment?

Expected Outcome: The students are able to appreciate the interconnectedness, interdependence and the relationship of mutual fulfilment existing in nature. They are able to see that they have a natural acceptance to participate in a mutually fulfilling manner in nature. By understanding the activity, innateness, natural characteristic and inheritance of the four orders in nature, they are able to identify the role of human being in the entire nature.

They are able to see that the present-day environmental issues are related to lack of understanding; and these issues can be resolved only with the development of right understanding on the part of human being.

PS 11

1. Observe your Self.

Are you in space?

Are you getting energy from the body? Is your energy dependent on the body? When your body is sick, does your energy to think diminish? Are you energised in space?

Are you being dictated by the body? Are you self-organised in space?

Innately, you have a natural acceptance for co-existence, harmony and relationship. To understand and live in co-existence, harmony and relationship is the scope of your full potential, your full possibility as a human being. Find out if that is the case for you.

2. Make a chart for the whole existence. List down different courses of studies and relate them to different realities in the existence (such as plants, human mind, animals etc.).

Expected Outcome: The students are able to obtain a holistic vision about the existence. It is in the form of co-existence, rather than a chaos. Every unit is energized, self-organised and is participating with other units in an orderly manner for mutual-fulfilment. It is only the human being without right understanding that is violating this underlying co-existence. They are able to appreciate the need to understand the co-existence in existence.

In the light of this understanding, they are able to place various educational inputs appropriately and see that education is, after all, to understand the underlying harmony and live in harmony at every level – at the level of individual human being, at the level of family, at the level of society and at the level of nature/existence.

Practice Sessions for Module 5 – Implications of the Holistic Understanding – a Look at Professional Ethics

PS 12

1. Watch the video "Hiware Bazaar". It is a documentary about a progressive village in Maharashtra, India about how good governance, along with the people of the village have made



significant change in their society (Source: <https://www.youtube.com/watch?v=cb0Qvh9BJ0s>).
Discuss:

- a. The goal of this village and the systems that they have to fulfil these goals
- b. The outcomes – achievements and areas of improvement

You can additionally pick current social problems in the campus or neighboring community and discuss how they can be solved with the involvement of the students and teachers.

2. Recollect any situation in your life when you had to face a strong ethical dilemma. Explain how, with the help of proper self-exploration and understanding, the dilemma could be resolved.

Expected Outcome: The students are able to clearly visualise the co-relation between lack of Human Values and the prevailing problems. They are also able to visualise tangible steps and a roadmap for moving in the cherished direction – for a humane society.

PS 13

1. By careful analysis, identify some important features which, when incorporated, will make our education more humanistic. What are the right expectations in terms of the outcome from humanistic education?
2. Some people feel that talking about holistic development is like trying to turn the wheel of time backwards. It will greatly hamper our progress. What is your view in this regard? Explain with justification.

Expected Outcome: The students are able to detail out various social systems essential for their own fulfilment, as well as the fulfilment of future generations. In particular, they are able to visualize the education system required for individual, and then societal transformation. They are also able to appreciate those many efforts made in the tradition that were in line with desirable human goals. Thus, they are able to learn from tradition and develop a deep sense of gratitude for the effort, for the people, for the tradition, culture etc.

PS 14

1. Suggest ways in which you can use your knowledge of Technology/Engineering/Management/Medicine etc. for universal human order, from your family order to the world family order.
2. The course is going to be over now. Evaluate your state before and after the course in terms of
a. Thought b. Behaviour c. Work d. Realization
3. Do you have any plan to participate in the transition for the humane society after graduating from the institute? Write a brief note on it.

Expected Outcome: The students are able to visualise an appropriate utilization of the knowledge in their respective streams to ensure mutually enriching and sustainable systems. They are able to sincerely evaluate the course and the transformation achieved in this process. They are also able to make use of this understanding for moving towards a happy and prosperous life, including an ethical conduct of their profession.



Socially Relevant Projects

Projects may be chosen to develop all the three aspects, in order of priority:

- Right understanding
- Relationship (right feeling and right thought)
- Skills for living in harmony

For illustration, let us take a project of tree plantation. It should help the teacher and students to:

1. Experience and understand mutual fulfillment in nature.
2. Understand human participation in enrichment, protection and right utilization of rest of the nature as well as to get a feel for prosperity within. i.e. get an idea of
 - a. Right utilization of the products from the tree (like fruit, vegetables, wood etc.)
 - b. Protection and nurturing of the trees planted; at least to be aware not to damage existing trees while planting the new ones.
3. Planning and Physical plantation of the tree.

The tree plantation project can be helpful in developing the three aspects mentioned. Of course, if they are doing tree plantation primarily as a task to be done or a means to get attention and some press coverage, then the project with the same physical tasks will not be as productive for this course.

Projects should take into consideration local requirements – it should be socially relevant. For instance, a gasifier power generation project in a city can use the waste wood, leaves, cardboard and paper etc. and contribute the clean power in the neighborhood power grid using a net-meter.

Projects can be of three types:

1. Study – Observing/Recognizing/Survey/Proposing a solution. e.g. finding out the change in water table in the local area and potential sustainable solutions
2. Modelling / Prototyping – Analysing, doing on a small scale and for a short term. e.g. developing a prototype of a pedal driven generator
3. Implementation – on some scale and for the long term. e.g. establishing an evening school in the local community, solar based lighting and pumping in the village community

Some topics:

1. Find out the quantity of food-grain (rice, wheat, corn, jowar etc.) that your family consumes annually. Taking this as the base, find out the total requirement of food-grain for your country. Find out the total production of food-grain in your country. Is the production sufficient? Articulate your conclusions
2. What do we consider important as a family -understanding, relationship and/ or physical facility? Is our time and effort applied for what we consider important? What do we evaluate at the end of every month? Discuss this at home and articulate your conclusions
3. Does my family have sufficient physical facility for my physical needs? Is my family prosperous? What do we need for feeling prosperous? Discuss this at home and articulate your conclusions
4. For the proper development of a child, there is a need to ensure a proper system in the society and make an appraisal of the current state. As a project work, find out the following in the society regarding the nutrition of children:
 - a. The demographic divide
 - b. Present social determinant of Health



c. Current child Health Policies

d. Involvement of Society and steps to be taken in this direction

Suggest policies which would ensure a better state of the society in terms of the above.

5. Find out how much water is available (rain, rivers, canals), how much water is needed
6. Find out how much water is available annually, and how much is used to generate electricity
7. Find out about power generation from low-head flowing-water, i.e. without making any dams. Can this system be cyclic and mutually-enriching?
8. Find out the change in water table in the local area and suggest possible sustainable solutions
9. List Socially Relevant Work in your state, nearby states, whole country, nearby countries, whole world
10. What is one valuable lesson from your tradition? Study its impact on Trust in your family
11. Document your understanding of the meaning of Health of your Body and the Programme for Health
12. Study the needs of families around your campus that are selling liquor. Suggest ways that they can meet their needs in a mutually fulfilling manner, rather than taking to means that are harmful for the society
13. Study the 'Sulabh-Shauchalaya' organisation and systems. Write a case study report on it with sections on its eco-friendly sustainable technology and human-friendly entrepreneurial system



DR. A.P.J. ABDUL KALAM TECHNICAL
UNIVERSITY, LUCKNOW



EVALUATION SCHEME & SYLLABUS

FOR

COMMON NON CREDIT COURSE (NC)
(V & VI Semester)

1	KNC501/ KNC601	CONSTITUTION OF INDIA, LAW AND ENGINEERING
2	KNC502/ KNC602	INDIAN TRADITION, CULTURE AND SOCIETY

Common Course for all the
programs of B-Tech. Computer
Science & Engineering i.e. Data Science
Artificial Intelligence & Machine Learning
[Effective from the Session: 2020-21]



SYLLABUS

1	KNC501/ KNC601	CONSTITUTION OF INDIA, LAW AND ENGINEERING
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DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY LUCKNOW

B.Tech. 3rd Year

ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

CURRICULUM STRUCTURE

SEMESTER- V													
Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KCS501	Database Management System	3	1	0	30	20	50		100		150	4
2	KAI501	Artificial Intelligence	3	1	0	30	20	50		100		150	4
3	KCS503	Design and Analysis of Algorithm	3	1	0	30	20	50		100		150	4
4	Dept. Elective-I	Departmental Elective-I	3	0	0	30	20	50		100		150	3
5	Dept. Elective-II	Departmental Elective-II	3	0	0	30	20	50		100		150	3
6	KCS551	Database Management System Lab	0	0	2				25		25	50	1
7	KAI551	Artificial Intelligence Lab	0	0	2				25		25	50	1
8	KCS553	Design and Analysis of Algorithm Lab	0	0	2				25		25	50	1
9	KCS554	Mini Project or Internship Assessment*	0	0	2				50			50	1
10	KNC501/ KNC502	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			
11		MOOCs (Essential for Hons. Degree)											
		Total	17	3	8							950	22
*The Mini Project or internship (4 weeks) conducted during summer break after IV semester and will be assessed during V semester.													



Module 1--Introduction and Basic Information about Indian Constitution:

Meaning of the constitution law and constitutionalism, Historical Background of the Constituent Assembly, Government of India Act of 1935 and Indian Independence Act of 1947, Enforcement of the Constitution, Indian Constitution and its Salient Features, The Preamble of the Constitution, Fundamental Rights, Fundamental Duties, Directive Principles of State Policy, Parliamentary System, Federal System, Centre-State Relations, Amendment of the Constitutional Powers and Procedure, The historical perspectives of the constitutional amendments in India, Emergency Provisions: National Emergency, President Rule, Financial Emergency, and Local Self Government – Constitutional Scheme in India.

Module 2-Union Executive and State Executive:

Powers of Indian Parliament Functions of Rajya Sabha, Functions of Lok Sabha, Powers and Functions of the President, Comparison of powers of Indian President with the United States, Powers and Functions of the Prime Minister, Judiciary – The Independence of the Supreme Court, Appointment of Judges, Judicial Review, Public Interest Litigation, Judicial Activism, LokPal, Lok Ayukta, The Lokpal and Lok ayuktas Act 2013, State Executives – Powers and Functions of the Governor, Powers and Functions of the Chief Minister, Functions of State Cabinet, Functions of State Legislature, Functions of High Court and Subordinate Courts.

Module 3- Introduction and Basic Information about Legal System:

The Legal System: Sources of Law and the Court Structure: Enacted law -Acts of Parliament are of primary legislation, Common Law or Case law, Principles taken from decisions of judges constitute binding legal rules. The Court System in India and Foreign Courtiers (District Court, District Consumer Forum, Tribunals, High Courts, Supreme Court). Arbitration: As an alternative to resolving disputes in the normal courts, parties who are in dispute can agree that this will instead be referred to arbitration. Contract law, Tort, Law at workplace.

Module 4- Intellectual Property Laws and Regulation to Information:

Intellectual Property Laws: Introduction, Legal Aspects of Patents, Filing of Patent Applications, Rights from Patents, Infringement of Patents, Copyright and its Ownership, Infringement of Copyright, Civil Remedies for Infringement, Regulation to Information-Introduction, Right to Information Act, 2005, Information Technology Act, 2000, Electronic Governance, Secure Electronic Records and Digital Signatures, Digital Signature Certificates, Cyber Regulations Appellate Tribunal, Offences, Limitations of the Information Technology Act.

Module 5 -Business Organizations and E-Governance:

Sole Traders, Partnerships: Companies: The Company's Act: Introduction, Formation of a Company, Memorandum of Association, Articles of Association, Prospectus, Shares, Directors, General Meetings and Proceedings, Auditor, Winding up.

E-Governance and role of engineers in E-Governance, Need for reformed engineering serving at the Union and State level, Role of I.T. professionals in Judiciary, Problem of Alienation and Secessionism in few states creating hurdles in Industrial development.

COURSE OBJECTIVE:

- To acquaint the students with legacies of constitutional development in India and help those to understand the most diversified legal document of India and philosophy behind it.
- To make students aware of the theoretical and functional aspects of the Indian Parliamentary System.
- To channelize students' thinking towards basic understanding of the legal concepts and its implications for engineers.
- To learn procedure and effects of emergency, composition and activities of election commission and amendment procedure.
- To make students learn about role of engineering in business organizations and e-governance.

COURSE OUTCOME: At the end of the course, learners should be able to-

1. Identify and explore the basic features and modalities about Indian constitution.
2. Differentiate and relate the functioning of Indian parliamentary system at the center and state level.
3. Differentiate different aspects of Indian Legal System and its related bodies.
4. Discover and apply different laws and regulations related to engineering practices.
5. Correlate role of engineers with different organizations and governance models

Pedagogy: Lecture, Problem based learning, Group discussions, Visual media, Films, Documentaries, Debate forums.

Suggested Readings:

- Brij Kishore Sharma: *Introduction to the Indian Constitution*, 8th Edition, PHI Learning Pvt. Ltd.
- Granville Austin: *The Indian Constitution: Cornerstone of a Nation (Classic Reissue)*, Oxford University Press.
- S.G Subramanian: *Indian Constitution and Indian Polity*, 2nd Edition, Pearson Education 2020.
- Subhash C. Kashyap: *Our Constitution: An Introduction to India's Constitution and constitutional Law*, NBT, 2018.
- Madhav Khosla: *The Indian Constitution*, Oxford University Press.
- PM Bakshi: *The Constitution of India*, Latest Edition, Universal Law Publishing.
- V.K. Ahuja: *Law Relating to Intellectual Property Rights* (2007)
- Suresh T. Viswanathan: *The Indian Cyber Laws*, Bharat Law House, New Delhi-88
- P. Narayan: *Intellectual Property Law*, Eastern Law House, New Delhi
- Executive programme study material Company Law, Module II, by ICSI (The Institute of Companies Secretaries of India) (Only relevant sections i.e., Study 1, 4 and 36). <https://www.icsi.edu/media/webmodules/publications/Company%20Law.pdf>
- Handbook on e-Governance Project Lifecycle, Department of Electronics & Information Technology, Government of India, https://www.meity.gov.in/writereaddata/files/e-Governance_Project_Lifecycle_Participant_Handbook-5Day_CourseV1_20412.pdf
- Companies Act, 2013 Key highlights and analysis by PWC. <https://www.pwc.in/assets/pdfs/publications/2013/companies-act-2013-key-highlights-and-analysis.pdf>



Referred Case Studies:

- Keshavanand Bharati V. State of Kerala, AIR 1973 SC 1461.
- Maneka Gandhi V. Union of India AIR, 1978 SC 597.
- S.R. Bammai V. Union of India, AIR 1994 SC 1918.
- Kuldip Nayyar V. Union of India, AIR 2006 SC312.
- A.D.M. Jabalpur V. ShivkantShakla, AIR 1976 SC1207.
- Remshwar Prasad V. Union of India, AIR 2006 SC980.
- Keshav Singh in re, AIR 1965 SC 745.
- Union of India V. Talsiram, AIR 1985 SC 1416.
- Atiabari Tea Estate Co.V. State of Assam, AIR 1961SC232.
- SBP & Co. Vs. Patel Engg. Ltd. 2005 (8) SCC 618.
- Krishna Bhagya Jala Nigam Ltd. Vs. G. Arischandra Reddy (2007) 2 SCC 720.
- Oil & Natural Gas Corporation Vs. Saw Pipes Ltd. 2003 (4) SCALE 92 – 185.

**** (Other relevant case studies can be consulted by the teacher as per the topic).**

Prescribed Legislations:

1. Information Technology Act, 2000 with latest amendments.
2. RTI Act 2005 with latest amendments.
3. Information Technology Rules, 2000
4. Cyber Regulation Appellate Tribunal Rules, 2000

Suggested aid for Students and Pedagogic purpose

- RSTV debates on corporate law, IPR and patent issues
- NPTEL lectures on IPR and patent rights

Episodes of 10 -part mini TV series “Samvidhan: The Making of Constitution of India” by RSTV.



SYLLABUS

2	KNC502/ KNC602	INDIAN TRADITION, CULTURE AND SOCIETY
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INDIAN TRADITIONS, CULTURAL AND SOCIETY

L: T:P: 2: 0:0

Module 1- Society State and Polity in India

State in Ancient India: Evolutionary Theory, Force Theory, Mystical Theory Contract Theory, Stages of State Formation in Ancient India, Kingship , Council of Ministers Administration Political Ideals in Ancient India Conditions' of the Welfare of Societies, The Seven Limbs of the State, Society in Ancient India, Purusārtha, Varnāshrama System, Āshrama or the Stages of Life, Marriage, Understanding Gender as a social category, The representation of Women in Historical traditions, Challenges faced by Women. Four-class Classification, Slavery.

Module 2- Indian Literature, Culture, Tradition, and Practices

Evolution of script and languages in India: Harappan Script and Brahmi Script. The Vedas, the Upanishads, the Ramayana and the Mahabharata, Puranas, Buddhist And Jain Literature in Pali, Prakrit And Sanskrit, Kautilya's Arthashastra, Famous Sanskrit Authors, Telugu Literature, Kannada Literature, Malayalam Literature ,Sangama Literature Northern Indian Languages & Literature, Persian And Urdu ,Hindi Literature

Module 3- Indian Religion, Philosophy, and Practices

Pre-Vedic and Vedic Religion, Buddhism, Jainism, Six System Indian Philosophy, Shankaracharya, Various Philosophical Doctrines , Other Heterodox Sects, Bhakti Movement, Sufi movement, Socio religious reform movement of 19th century, Modern religious practices.

Module 4-Science, Management and Indian Knowledge System

Astronomy in India, Chemistry in India, Mathematics in India, Physics in India, Agriculture in India, Medicine in India ,Metallurgy in India, Geography, Biology, Harappan Technologies, Water Management in India, Textile Technology in India ,Writing Technology in India Pyrotechnics in India Trade in Ancient India/,India's Dominance up to Pre-colonial Times

Module 5- Cultural Heritage and Performing Arts

Indian Architect, Engineering and Architecture in Ancient India, Sculptures, Seals, coins, Pottery, Puppetry, Dance, Music, Theatre, drama, Painting, Martial Arts Traditions, Fairs and Festivals, Current developments in Arts and Cultural, Indian's Cultural Contribution to the World. Indian Cinema

COURSE OBJECTIVES:

- The course aims at imparting basic principles of thought process, reasoning and inference to identify the roots and details of some of the contemporary issues faced by our nation and try to locate possible solutions to these challenges by digging deep into our past.
- To enable the students to understand the importance of our surroundings and encourage the students to contribute towards sustainable development.
- To sensitize students towards issues related to 'Indian' culture, tradition and its composite character.

- To make students aware of holistic life styles of Yogic-science and wisdom capsules in Sanskrit literature that are important in modern society with rapid technological advancements and societal disruptions.
- To acquaint students with Indian Knowledge System, Indian perspective of modern scientific world-view and basic principles of Yoga and holistic health care system.

COURSE OUTCOMES: Ability to understand, connect up and explain basics of Indian Traditional knowledge modern scientific perspective.

Suggested Pedagogy for Teachers

- Project based learning
- Case studies
- Group discussion
- Presentations

Suggested Text & Reference Books

1. V. Sivaramakrishna (Ed.), *Cultural Heritage of India-Course Material*, Bharatiya Vidya Bhavan, Mumbai, 5th Edition, 2014
2. S. Baliyan, *Indian Art and Culture*, Oxford University Press, India
3. Swami Jitmanand, *Modern Physics and Vedant*, Bharatiya Vidya Bhavan
4. Romila Thapar, *Readings In Early Indian History* Oxford University Press , India
5. Fritz of Capra, *Tao of Physics*
6. Fritz of Capra, *The wave of Life*
7. V N Jha (English Translation), *Tarkasangraha of Annam Bhatta*, International Chinmay Foundation, Velliarnad, Amakuram
8. Yoga Sutra of Patanjali, Ramakrishna Mission, Kolkatta
9. GN Jha (Eng. Trans.) Ed. R N Jha, *Yoga-darshanam with Vyasa Bhashya*, Vidyanidhi Prakasham, Delhi, 2016
10. RN Jha, *Science of Consciousness Psychotherapy and Yoga Practices*, Vidyanidhi Prakasham, Delhi, 2016
11. P R Sharma (English translation), *Shodashang Hridayam*
12. Basham, A.L., *The Wonder that was India* (34th impression), New Delhi, Rupa & co
13. Sharma, R.S., *Aspects of Political Ideas and Institutions in Ancient India*(fourth edition), Delhi, Motilal Banarsidass,



DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY LUCKNOW

B.Tech. 4th Year

COMPUTER SCIENCE AND ENGINEERING (ARTIFICIAL INTELLIGENCE)

CURRICULUM STRUCTURE

Common for all programmes of CS & E

SEMESTER- VII

Sl. No.	Subject	Subject	Periods			Evaluation Scheme				End Semester		Total	Cr
	Codes		L	T	P	CT	TA	Total	PS	TE	PE		
1	KHU701/KHU702	HSMC -1/ HSMC-2	3	0	0	30	20	50		100		150	
2	Departmental Elective-IV	Departmental Elective-IV	3	0	0	30	20	50		100		150	
3	Departmental Elective-V	Departmental Elective-V	3	0	0	30	20	50		100		150	
4	KOE07X	Open Elective-II	3	0	0	30	20	50		100		150	
5	KCS751A	Departmental Elective Lab	0	0	2				25		25	50	
6	KCS752	Mini Project or Internship Assessment*	0	0	2				50			50	
7	KCS753	Project	0	0	8				150			150	
8		MOOCs (Essential for Hons. Degree)											
		Total	12	0	12							850	1

The Mini Project or internship (4 - 6 weeks) conducted during summer break after VI semester and will be assessed during VII semester.

*Department may conduct one Lab of based on either Data Warehousing and Data Mining or Cloud Computing.

SEMESTER- VIII

Sl. No.	Subject	Subject	Periods			Evaluation Scheme				End Semester		Total	Cr
	Codes		L	T	P	CT	TA	Total	PS	TE	PE		
1	KHU801/KHU802	HSMC-1/HSMC-2	3	0	0	30	20	50		100		150	
2	KOE08X	Open Elective-III	3	0	0	30	20	50		100		150	
3	KOE09X	Open Elective-IV	3	0	0	30	20	50		100		150	
4	KCS851	Project	0	0	18				100		300	400	
5		MOOCs (Essential for Hons. Degree)											
		Total	9	0	18							850	1



HSMC & OPEN ELECTIVES II LIST 2021-22

KHU701/ KHU801	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	3L:0T:0P	3 Credits
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COURSE OUTCOME: After completion of the course student will be able to:

1. Students can understand the definitions, concepts and components of Rural Development
2. Students will know the importance, structure, significance, resources of Indian rural economy.
3. Students will have a clear idea about the area development programmes and its impact.
4. Students will be able to acquire knowledge about rural entrepreneurship.
5. Students will be able to understand about the using of different methods for human resource planning

Unit	Topics	Lectures
I	Rural Planning & Development: Concepts of Rural Development, Basic elements of rural Development, and Importance of Rural Development for creation of Sustainable Livelihoods, An overview of Policies and Programmes for Rural Development- Programmes in the agricultural sector, Programmes in the Social Security, Programmes in area of Social Sector.	8
II	Rural Development Programmes: Sriniketan experiment, Gurgaon experiment, marthandam experiment, Baroda experiment, Firkha development scheme, Etawa pilot project, Nilokheri experiment, approaches to rural community development: Tagore, Gandhi etc	8
III	Panchayati Raj & Rural Administration: Administrative Structure: bureaucracy, structure of administration; Panchayati Raj Institutions Emergence and Growth of Panchayati Raj Institutions in India; People and Panchayati Raj; Financial Organizations in Panchayati Raj Institutions, Structure of rural finance, Government & Non-Government Organizations / Community Based Organizations, Concept of Self help group.	8
IV	Human Resource Development in Rural Sector: Need for Human Resource Development, Elements of Human Resource Development in Rural Sector Dimensions of HRD for rural development-Health, Education, Energy, Skill Development, Training, Nutritional Status access to basic amenities - Population composition.	8
V	Rural Industrialization and Entrepreneurship: Concept of Rural Industrialization, Gandhian approach to Rural Industrialization, Appropriate Technology for Rural Industries, Entrepreneurship and Rural Industrialization- Problems and diagnosis of Rural Entrepreneurship in India, with special reference to Women Entrepreneurship; Development of Small Entrepreneurs in India, need for and scope of entrepreneurship in Rural area.	8

Text Book:

1. Corporate Social Responsibility: An Ethical Approach - Mark S. Schwartz
2. Katar Singh: Rural Development in India – Theory History and Policy
3. Todaro M.P. Economic Development in III World war
4. Arora R.C – Integrated Rural Development in India
5. Dhandekar V.M and Rath N poverty in India
6. A.N.Agarwal and Kundana Lal: Rural Economy of India
7. B.K.Prasad: Rural Development-Sarup & Son's Publications.

