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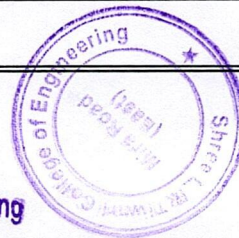
# SHREE L. R. TIWARI COLLEGE OF ENGINEERING

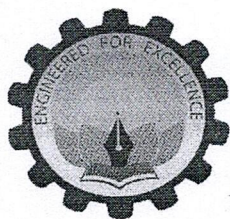
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NAAC Accredited, NBA Accredited Program, ISO 9001:2015 Certified | DTE Code No. : 3423  
Minority Status (Hindi Linguistic)

## Curriculum for Add on /Certificate/Value added programs for last five years

Sr. No	Name of Add on /Certificate /Value added programs offered and online MOOC programs like SWAYAM, NPTEL etc. programs offered	Year of offering
1	Structural and Architectural Aspects in Civil Engineering	2022 -2023
2	AWS Cloud	2022 -2023
6	Advanced Python for Mechanical Engineering	2022 -2023
7	Advanced Cybersecurity Malware Analysis	2022 -2023
8	Digital VLSI Design	2022-2023
9	Product Design and Development	2022-2023
10	5 G Communication	2022 -2023
11	Environmental Ethics	2022-2023
14	Game Asset Development using Blender	2022-2023
15	Machine Learning	2022-2023
16	Flutter	2022-2023
17	Fundamental and Application of Robotics Lab	2021-2022
18	AWS Cloud	2021-2022
19	Internet of Things	2021-2022

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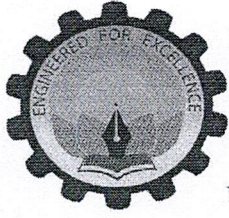
## Curriculum for Add on /Certificate/Value added programs for last five years

Sr. No	Name of Add on /Certificate /Value added programs offered and online MOOC programs like SWAYAM, NPTEL etc. programs offered	Year of offering
23	Add on course "Drone Technologies"	2021-2022
24	Python for Mechanical Engineering	2021 - 2022
25	A complete report writing workshop using LaTeX software	2019-2020
26	Value education on Self Development	2019-2020
27	Personality Development: Self-Discovery Intensive	2019-2020
28	Solid Works and Ansys	2019-2020
29	Integrity Engineering: Nurturing Values in Technology	2019-2020
30	Essentials of Dharma: Mindful Decision-Making	2019-2020
31	Value Education for Mind Control: Brainpower Enhancement	2019-2020
32	Robotics	2018-2019
33	Ethics in engineering & value education :AURA	2018-2019
34	Dharma-A Life of Integration	2018-2019
35	Basic Programming Using Python	2018-2019
36	Ethics in engineering and value education	2018-2019
37	Human Rights	2018-2019
38	Environmental Impact Assessment	2018-2019

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## Curriculum for Add on /Certificate/Value added programs for last five years

Sr. No	Name of Add on /Certificate /Value added programs offered and online MOOC programs like SWAYAM, NPTEL etc. programs offered	Year of offering
39	Soft Skill Development	2018-2019
40	Internet of Things	2018-2019
41	Panchkosh	2018-2019
42	Value added education on mind control	2018-2019
43	Personality Development	2018-2019



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**Bridge Course: Robotics**

<b>Course Code</b>	<b>Course Name: Robotics</b>
<b>RB01</b>	<b>Total Contact Hours :30</b>
	<b>Prerequisite:</b> 1. Programming in a high-level language and its use in solving engineering problems 2. Motion of rigid bodies and kinematics of mechanisms 3. Dynamics
<b>Course Objective</b>	
To enhance holistic development of students and improve their employability skills.	
<b>Course outcome:</b> Learner will be able	
1.	To develop the student's knowledge in various robot structures and their workspace.
2.	To develop student's skills in performing spatial transformations associated with rigid body motions.
3.	To develop student's skills in perform kinematics analysis of robot systems
4.	To provide the student with some knowledge and analysis skills associated with trajectory planning.
5	To provide the student with some knowledge and skills associated with robot control

Sr. No.	Module	Detail Contents	Hours
1	<b>Core programming</b>	Understand computer storage and data types, Understand computer decision structures, Identify the appropriate method for handling repetition, Understand error handling	4
2	<b>Object Oriented programming</b>	Understand the fundamentals of classes, Understand inheritance, Understand polymorphism, Understand encapsulation	8
3	<b>General Software Development</b>	Understand application life cycle management, Interpret application specifications, Understand algorithms and data structures	4
4	<b>Web Applications</b>	Understand web page development, Understand Microsoft ASP.NET web application development, Understand web hosting, Understand web services	6
5	<b>Understand Windows apps</b>	Understand Windows apps, Understand console-based applications, Understand Windows Services	4
6	<b>Relational database management systems</b>	Characteristics and capabilities of database products, database design, Entity Relationship Diagrams (ERDs), normalization concepts, Understand database query methods, Understand database connection methods	4

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**REFERENCE**

1. Robotics and Artificial Intelligence” by Michael Brady
2. Forbidden Gates: How Genetics, Robotics, Artificial Intelligence, Synthetic Biology, Nanotechnology, and Human Enhancement Herald, The Dawn of the Techno-Dimensional” by Thomas Horn.
3. “Computational Intelligence, Control and Computer Vision in Robotics and Automation” by Bidyadhar Subudhi
4. “Artificial Intelligence: A Beginner’s Guide (Beginner’s Guides)” by Blay Whitby



  
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## Bridge Course: Ethics in Engineering & Value Ed

AURA

*Sf Nabus*

First in the Seven Spiritual Arts and gateway to all the ongoing training at course teaches you how to access the source of your auric power – your own spiritual bank account or living light – to enrich all parts of your life. You will discover how to build your own direct connection to the Higher and inner spiritual worlds for guidance, inspiration, and blessings..

Course Code	Course Name	Teaching Scheme			Credit Assigned			
		Theory	Practical	Tutorial	Theory	TW/ Practical	Tutorial	Total
AC01	Ethics in Engineering & Value Education: Aura	01 Hrs. /Week	--	---	NA	NA	NA	NA

**Pre-requisites:** NA.

### Course Objectives

1. To understand the concept of Ethics in Engineering & Human Values: Aura.
2. To realize the complete picture of your aura looks like.
3. To imbibe the various colors of the aura mean and say about you.
4. To indoctrinate value education in our students so that they remain committed to professional ethics and responsibilities relevant to professional engineering practice.
5. To address graduate attribute 6, 7, 8,9,10 related to professional engineering practice, sustainability, ethics, team work and communication.
6. To inculcate qualities like cooperation and team building to function effectively as an individual and as a member in teams and in multidisciplinary settings.

### Course Outcomes

1. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
2. Develop a good moral character and social attitude.
3. Determine the proper use of engineering knowledge to bring uplift in quality of life, along with peace.
4. Responsibilities relevant to professional engineering practice.
5. Cultivation of trust and cooperation in team building Developing effectiveness and self-management.



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## DETAILED SYLLABUS:

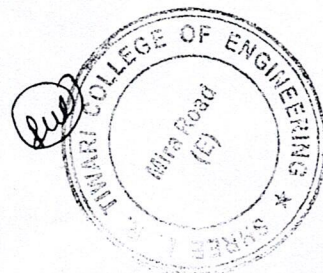
Sr. No	Module	Detailed Contents	Hours
1	Introduction all about Aura	Everything you think, feel, and do radiates a spiritual energy that comes through in various colors and hues: this is your aura. By changing the quality of your aura, you can change the quality of your life.	10
2	chakra system, celestial support system(CS,CSS)	Whether you are starting on your spiritual journey or have been on the metaphysical path for years, this program will open new doors in your spiritual enfoldment.	10
3.	power rays of spiritual enrichment(PSE)	This foundation program builds on the best-selling book Change Your Aura, Change Your Life (required reading) incorporating additional tools and insights that can only be offered in this interactive training.	10

### References / Text Books:

1. Change Your Aura, Change Your Life: A Step-by-Step Guide to Unfolding Your Spiritual Power, Revised Edition, By (author) Barbara Y. Martin, By (author) Dimitri Moraitis.
2. Chakras for Beginners: The Ultimate Crash Course to Chakra Healing, Chakra Meditation, Chakra Balancing, Strengthen Aura & Radiate Energy by Dagny Walters (Author, Publisher).
3. "Mysteries of the Aura Revealed." By school of intuition.



  
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## Bridge Course: DHARMA-A LIFE OF INTEGRATION

In today's world there is dire need of professionals with DHARMA-A LIFE OF INTEGRATION. Society needs educated peoples with good character. Today's engineering education is as much about building character as it is about equipping students with specific skills. The social studies suggest that values based education can strengthen students' self-esteem, optimism and commitment to personal fulfillment; and help students exercise ethical judgment and social responsibility. Parents also expect schools to help students understand and develop personal and social responsibilities. This course is designed with all the above considerations.

Course Code	Course Name	Teaching Scheme			Credit Assigned			
		Theory	Practical	Tutorial	Theory	TW/ Practical	Tutorial	Total
DC01	DHARMA-A LIFE OF INTEGRATION	04 Hrs. /Week	--		NA	NA	NA	NA

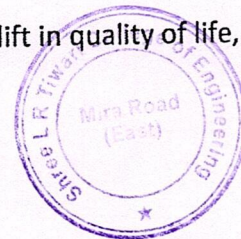
**Pre-requisites:** NA.

### Course Objectives

1. To understand DHARMA-A LIFE OF INTEGRATION.
2. To realize the significance of Values in Self-development.
3. To imbibe the knowledge, attitudes and skills needed to achieve and sustain a global culture of peace and values.
4. To indoctrinate value education in our students so that they remain committed to professional ethics and responsibilities relevant to professional engineering practice.
5. To address graduate attribute 6, 7, 8,9,10 related to professional engineering practice, sustainability, ethics, team work and communication.

### Course Outcomes

1. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
2. Develop a good moral character and social attitude.
3. Determine the proper use of engineering knowledge to bring uplift in quality of life, along with peace.
4. Responsibilities relevant to professional engineering practice.



  
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5. Developing effectiveness and self-management.

### DETAILED SYLLABUS:

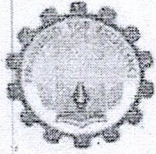
Sr. No	Module	Detailed Contents	Hours
1	Treating Dharma life as a separate category – a big mistake	Integrating Dharma into our daily activities means that Dharma serves a deep purpose. When we integrate Dharma successfully, it becomes truly functional. Here, Phakchok Rinpoche reminds Buddhist practitioners how to apply Dharma throughout our day.	6
2	Integrating Dharma: Opening up to Dharma as the Real Answer in Life	Instead, try to integrate Dharma in life and life in Dharma. We need to do this skillfully: a nice integration, not like black and white. Please don't have this concept, habit, idea, or ignorance. We need to completely put aside this ignorance. Then, if we integrate, Dharma becomes real meaningful or useful in life. It becomes the real answer in life.	12
3.	Integrating Dharma: Remembering a Key Instruction	This is one of the major mistakes we tend to make. We tend to treat the Dharma part of our life as a separate category. Just as we separate our work life from our home life, we make separate categories, don't we? For example, when we think about our work life, we tend to be goal oriented, 9-5 focused, and often very stressed out. And we might always be calculating how to achieve, how to do better, and how to advance.	12

### References/Text Books:

1. The Book of Dharma: Making Enlightened Choices: Simon Haas.
2. External Dharma: how to find Spiritual Evolution Through Surrender and Embrace your life's true Purpose: Amazon.de: Voshnu (Vishnu Swami) Swami.
3. Bhagvadgita As It is, BBT
4. Voice your choice, Radheshyam Das, Voice Books.

  
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BASIC PROGRAMMING USING ~~Python~~ Python.

## Schedule

Date	Time	Hours	Session	Topics
18/3/2019	8.am to 6 pm	10 hrs	Advanced Python	<ul style="list-style-type: none"><li>• Functions, List and Tuples, Dictionaries Exception</li><li>• Files in Python, Directories, Building Modules, Packages, Text Processing, Regular expression in python.</li></ul>
19/3/2019	8.am to 6 pm	10 hrs	Python Integration Primer and Multithreading	<ul style="list-style-type: none"><li>• Graphical User interface, Networking in Python, Python database connectivity.</li><li>• Thread and Process, Starting a thread, Threading module, Synchronizing threads, Multithreaded Priority Queue</li></ul>
20/3/2019	8.am to 6 pm	10 hrs	NumPy and Pandas	<ul style="list-style-type: none"><li>• Creating NumPy arrays, Indexing and slicing in NumPy, creating multidimensional arrays, NumPy Data types, Array Attribute, Indexing and Slicing, creating array views copies, manipulating array shapes I/O</li><li>• Basics of Pandas, Using multilevel series, Series and Data Frames, Grouping, aggregating, Merge Data Frames</li></ul>

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### Bridge Course: Ethics in Engineering & Value Education

In today's world there is dire need of professionals with ethics and moral values. Society needs educated peoples with good character. Today's engineering education is as much about building character as it is about equipping students with specific skills. The social studies suggest that values based education can strengthen students' self-esteem, optimism and commitment to personal fulfilment; and help students exercise ethical judgment and social responsibility. Parents also expect schools to help students understand and develop personal and social responsibilities. This course is designed with all the above considerations.

Course Code	Course Name	Teaching Scheme	Credit Assigned			
		Theory	Theory	TW/ Practic	Tutorial	Total
ADCO1	Ethics in Engineering & Value Education	01 Hrs. /Week	NA	NA	NA	NA

Pre-requisites: NA.

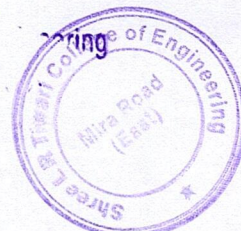
#### Course Objectives

1. To understand the concept of Ethics in Engineering & Human Values.
2. To realize the significance of Values in Self-development.
3. To imbibe the knowledge, attitudes and skills needed to achieve and sustain a global culture of peace and values.
4. To indoctrinate value education in our students so that they remain committed to professional ethics and responsibilities relevant to professional engineering practice.
5. To address graduate attribute 6, 7, 8,9,10 related to professional engineering practice, sustainability, ethics, team work and communication.

Detailed Syllabus:

Sr.no	Module	Detailed Contents	Hours
1	Introduction to Personality Development	Personality Make Up Personality Development	3

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2	Four Quotients of Personality	Physical Quotient (PQ) Emotional Quotients (EQ) Intellectual Quotients (IQ) Spiritual Quotients (SQ)	6
3	Physical Quotients	Healthy Life style, Simple living and High thinking Influencing and commanding ability Power of habits	6
4	Emotional Quotients (EQ)	Treat others as you expect to be treated, Art of tolerating all circumstances, Knowing others feelings & anticipate their reaction, Feeling of satisfaction & Freedom from jealousy and greed, Developing Trust and Faith of people in you	3
5	Intellectual Quotients (IQ)	Recognizing the proper relations, Art of focus on a goal. Art of taking decision. Equanimity in honor & dishonor	6
6	Spiritual Quotients (SQ)	Healthy Life style, Simple living and High thinking Influencing and commanding ability Power of habits, Know the power in you Seeing everyone on spiritual platform, Self-realization, Need of becoming well-wisher of everyone Love with God and his children	6

### Course Outcomes

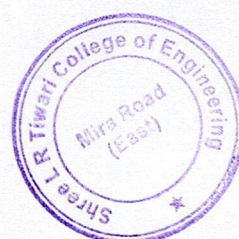
1. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
2. Develop a good moral character and social attitude.
3. Determine the proper use of engineering knowledge to bring uplift in quality of life, along with peace.
4. Responsibilities relevant to professional engineering practice.
5. Developing effectiveness and self-management.


### Text Books:

1. Singh, Y. K. (2009). Value education. New Delhi: APH Publishing Corporation.
2. Beyond Illusion and Doubt, A. C Bhaktivedanta Swami Prabhupada, BBT
3. Bhagvadgita as It is, BBT
4. Practical Tips to Mind Control, Radheshyam Das, Voice Books

### References:

1. The Journey Home, H H Radhanath Swami, Jaico Publications, 2012
2. Morrison, M. L. (2003). Peace education. Australia: McFarland.
3. Voice your choice Ethics from Epics Govinda Das, Tulsi Books, 2014.



  
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## Bridge Course: Value Education on Human Rights

**Human rights education** is defined as the learning process that builds up the required knowledge, values, and proficiency of human rights of which the objective is to develop an acceptable human rights culture. This type of learning teaches students to examine their experiences from the human rights point of view enabling them to integrate these concepts into their values and decision-making. According to Amnesty International, human rights education is a way to empower people so that they can create skills and behavior that would promote dignity and equality within the community, society, and all over the world.

Course Code	Course Name	Teaching Scheme			Credit Assigned			
		Theory	Practical	Tutorial	Theory	TW/ Practical	Tutorial	Total
HUR02	Value Education on Human Rights	01 Hrs. /Week	--		NA	NA	NA	NA

**Pre-requisites:** NA.

### Course Objectives

1. To understand the concept of Human Rights.
2. To realize the significance of Values in Self-development.
3. To imbibe the knowledge, attitudes and skills needed to achieve and sustain a global culture of peace and values.
4. To indoctrinate value education in our students so that they remain committed to professional ethics and responsibilities relevant to professional engineering practice.

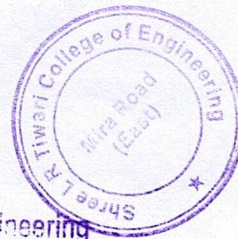
### Course Outcomes

1. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
2. Develop a good moral character and social attitude.
3. Determine the proper use of engineering knowledge to bring uplift in quality of life, along with peace.
4. Responsibilities relevant to professional engineering practice.
5. Developing effectiveness and self-management.



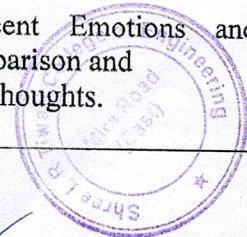
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**DETAILED SYLLABUS:**

Sr. No	Module	Detailed Contents	Hours
1	Concept of Human Values, Value Education Towards Personal Development	<p>Aim of education and value education; Evolution of value oriented education; Concept of Human values; types of values; Components of value education.</p> <p>Personal Development : Self-analysis and introspection; sensitization towards gender equality, physically challenged, Intellectually challenged. Respect to - age, experience, maturity, family members, neighbours, co-workers.</p> <p>Character Formation Towards Positive Personality: Truthfulness, Constructivity, Sacrifice, Sincerity, Self Control, Altruism, Tolerance, Scientific Vision.</p>	6
2	Value Education Towards National and Global Development	<p>National and International Values: Constitutional or national values - Democracy, socialism, secularism, equality, justice, liberty, freedom and fraternity.</p> <p>Social Values - Pity and probity, self control, universal brotherhood.</p> <p>Professional Values - Knowledge thirst, sincerity in profession, regularity, punctuality and faith.</p> <p>Religious Values - Tolerance, wisdom, character.</p> <p>Aesthetic values - Love and appreciation of literature and fine arts and respect for the same.</p> <p>National Integration and international understanding.</p>	6
3.	Impact of Global Development on Ethics and Values	<p>Conflict of cross-cultural influences, mass media, cross-border education, materialistic values, Professional challenges and compromise.</p> <p>Modern Challenges of Adolescent Emotions and behavior; Sex and spirituality: Comparison and Competition; positive and negative thoughts.</p>	6



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		Adolescent Emotions, arrogance, anger, sexual instability, selfishness, defiance.	
4.	Therapeutic Measures	Control of the mind through a. Simplified physical exercise  b. Meditation – Objectives, types, effect on body, mind and soul  c. Yoga – Objectives, Types, Asanas  d. Activities: (i) Moralisation of Desires (ii) Neutralisation of Anger (iii) Eradication of Worries (iv) Benefits of Blessings	6
5.	Human Rights	1. Concept of Human Rights – Indian and International Perspectives a. Evolution of Human Rights b. Definitions under Indian and International documents  2. Broad classification of Human Rights and Relevant Constitutional Provisions. a. Right to Life, Liberty and Dignity b. Right to Equality c. Right against Exploitation d. Cultural and Educational Rights e. Economic Rights f. Political Rights g. Social Rights  3. Human Rights of Women and Children a. Social Practice and Constitutional Safeguards (i) Female Foeticide and Infanticide (ii) Physical assault and harassment (iii) Domestic violence (iv) Conditions of Working Women  4. Institutions for Implementation a. Human Rights Commission b. Judiciary  5. Violations and Redressal a. Violation by State b. Violation by Individuals	6

  
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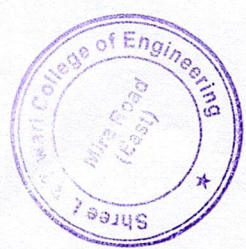
		c. Nuclear Weapons and terrorism d. Safeguards.	
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**Text Books:**

1. V.R. Krishna Iyer, Dialectics and Dynamics of Human Rights in India, Tagore Law Lectures.
2. Yogic Therapy - Swami Kuvalayananda and Dr.S.L.Vinekar, Government of India, Ministry of Health, New Delhi.
3. SOUND HEALTH THROUGH YOGA - Dr.K.Chandrasekaran, Prem Kalyan Publications, Sedappti, 1999.



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Park, Mira





Environmental Impact Assessment

Syllabus

Course Objective:

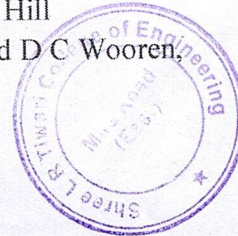
- ▮ To use of EIA for various projects
- ▮ To monitor and mitigation of Impacts
- ▮ To perform EIA for various projects
- ▮ To perform Environmental Auditing process
- ▮ To learn laws related to EIA and auditing in India

Module.no	Topics	Lecture Hours
1	<b>Introduction</b> <ul style="list-style-type: none"> <li>▮ Impact of development projects – Sustainable development- Need for Environmental Impact Assessment (EIA)</li> <li>▮ Environmental Impact Statement (EIS) – EIA capability and limitations – Legal provisions on EIA-Stages of EIA, Types of EIA</li> </ul>	8
2	<b>METHODOLOGIES</b> <ul style="list-style-type: none"> <li>▮ Methods of EIA – Check lists – Matrices – Networks</li> <li>▮ Cost-benefit analysis Analysis of alternatives</li> </ul>	4
3	<b>PREDICTION AND ASSESSMENT</b> <ul style="list-style-type: none"> <li>▮ Assessment of Impact on land, water, air, social &amp; cultural activities and on flora &amp; fauna</li> </ul>	6
4	<b>ENVIRONMENTAL MANAGEMENT PLAN</b> <ul style="list-style-type: none"> <li>▮ Plan for mitigation of adverse impact on environment – Options for mitigation of impact on water, air, land and on flora &amp; fauna</li> <li>▮ Addressing the issues related to the Project Affected People. Post project monitoring</li> </ul>	4
5	<b>CASE STUDIES</b> <ul style="list-style-type: none"> <li>▮ EIA for infrastructure projects – Dams – Highways – Multi-storey Buildings Water Supply</li> <li>▮ Drainage Projects – Waste water treatment plants</li> </ul>	8

REFERENCE

- ▮ Corporate Environmental Management: Welford R, University Press
- ▮ Environmental Assessment: Jain R K, Mc-Graw Hill
- ▮ Environmental Impact Assessment: Harry W Conter, Mc-Graw Hill
- ▮ Environmental Impact Assessment – Handbook: John G Rau and D C Wooren, Mc-GrawHill

  
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## Syllabus for Soft Skill Development

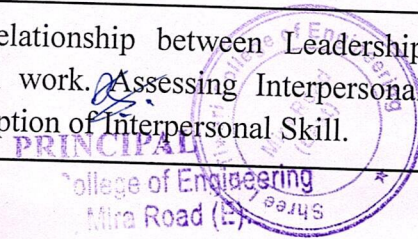
### Course Objectives:

- To develop inter personal skill and be an effective goal oriented team player.
- To develop professionals with idealistic, practical and moral values.
- To develop communication and problem solving skills.
- To re-engineer attitude and understand its influence on behavior.

Sr. No	Module Name	Content	Duration In hours
1	Self-Analysis	SWOT Analysis, Who am I, Attributes, Importance of Self Confidence, Self Esteem	2
2	Creativity	Out of box thinking, Lateral Thinking.	4
3	Attitude	Factors influencing Attitude, Challenges and lessons from Attitude, Etiquette.	3
4	Motivation	Factors of motivation, Self-talk, Intrinsic & Extrinsic Motivators.	2
5	Goal Setting	Wish List, SMART Goals, Blue print for success, Short Term, Long Term, Life Time Goals.	2
6	Time Management	Value of time, Diagnosing Time Management, Weekly Planner To do list, Prioritizing work.	2
7	Interpersonal Skills Gratitude	Understanding the relationship between Leadership Networking & Team work. Assessing Interpersonal Skills Situation description of Interpersonal Skill.	2

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Shree Rahul Education Society's (Regd.)

# SHREE L. R. TIWARI COLLEGE OF ENGINEERING

Kanakia Park, Near Commissioner's Bungalow, Mira Road (East), Thane 401107, Maharashtra

(Approved by AICTE, Govt. of Maharashtra & Affiliated to University of Mumbai)

Tel. No.: 022-65295732 / 022-65142376 | Email: slrtce@rahuleducation.com | Website: www.slrtce.in

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## Syllabus for Soft Skill Development

8	Leadership	Skills for a good Leader, Assessment of Leadership Skills	4
9	Stress Management	Causes of Stress and its impact, how to manage & distress, Circle of control, Stress Busters	3
10	Conflict Resolution	Conflicts in Human Relations – Reasons Case Studies, Approaches to conflict resolution	4
11	Decision Making	Importance and necessity of Decision Making, Process.	2

### Course Outcomes:

The student shall be able to

- Navigate conflicts effectively and contribute positively to group dynamics.
- Integrate theoretical knowledge with practical applications, fostering a well-rounded professional approach.
- Use effective communication to collaborate on problem-solving within a team environment.
- Understand the connection between attitude, motivation, and overall success in personal and professional endeavors.

### TEXT BOOK:

Soft Skills, 2015, Career Development Centre, Green Pearl Publications.

### References

1. Covey Sean, Seven Habits of Highly Effective Teens, New York, Fireside Publishers, 1998.
2. Carnegie Dale, how to Win Friends and Influence People, New York: Simon & Schuster, 1998.
3. Thomas A Harris, I am ok, you are ok, New York-Harper and Row, 1972
4. Daniel Coleman, Emotional Intelligence, Bantam Book, 2006

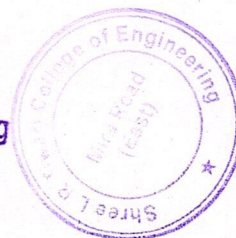
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## Add on course on “Internet of Things”

### Add on Course Details:

Course name: Internet Of Things

Add on Course Duration: 30 hours

Department Organizing event: EXTC, SLRTCE

### Trainer Details:

M.K.Jeevarajan

### Topics Covered:

1. IoT Introduction and Architectures
2. IoT using Thingspeak
3. IoT with Microsoft Azure
4. IoT Projects and Case Study
5. IoT with AWS IoT

Add on course will be of 30 hours

### Schedule

#### 30 DAYS Session on Internet of Things Master Class

#### By Pantech ProLabs

#### 1. Introduction and Architectures

DAY-1 Introduction to IoT

DAY-2 IoT Communication Protocols

DAY-3 Introduction to ESP32 and NodeMCU

DAY-4 IoT Clouds, Analytics & Data science

DAY-5 Sensors for IoT

#### IoT using Thingspeak

DAY - 6 Sending Data to Thingspeak -Arduino+Humidity+Air quality(Weather monitoring system)

DAY - 7 How to Analyze IoT Data in ThingSpeak

DAY - 8 Deploying a Machine learning Model on the Cloud

DAY - 9 Thingspeak for IoT in agriculture

  
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DAY – 10 Smart Humidity Sensor - ThingSpeak, MATLAB, and IFTTT

**IoT with Microsoft Azure**

DAY– 11 Introduction to IoT with Microsoft Azure

DAY– 12 Implementing IoT with Azure

DAY– 13 Edge Computing and Analytics

DAY– 14 Cognitive services, Computer vision API

DAY– 15 Weather monitoring station using Microsoft Azure and Arduino

**IoT Projects and Case Study**

Day-16 Home automation using Google Assistant

Day-17 Industrial IoT using Zigbee and WIFI(Windmill case study)

Day-18 Recording sensor data to google sheet using IFTTT with Arduino and sending alerts

Day-19 Real time Video surveillance esp32cam and Blynk App

Day-20 Predictive Maintenance of a Duct Fan Using Nodemcu, ThingSpeak and MATLAB

**IoT with AWS IoT**

Day 21 Introduction to AWS IoT, Setting up Free tier AWS, AWS CLI, Policies, Security Credentials, and Testing

Day 22 Raspberry PI3 with AWS IOT SDK

Day 23 SNS Push Notifications, AWS IoT Analytics

Day 24 AWS Lambda Functions for IoT

Day 25 HTTPs Arduino sketch to AWS IoT Core for the ESP8266 and ESP32


Day 26 Using Mongoose OS on embedded devices for AWS IoT

Day 27 Storing data into the Dynamo Database from the AWS IoT control panel

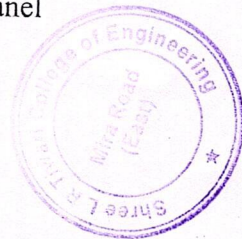
Day 28 AWS Quicksight for data analytics and visualizations

Day 29 AWS Device Shadows and multiple Pub/Sub's

Day 30 Weather monitoring station using AWS IOT

  
Course Coordinator  
(Name and Signature)

  
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NA

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### Bridge Course: PANCH KOSH

In today's world there is dire need of professionals with ethics and moral values. Society needs educated peoples with good character. Today's engineering education is as much about building character as it is about equipping students with specific skills. The social studies suggest that values based education can strengthen students' self-esteem, optimism and commitment to personal fulfilment; and help students exercise ethical judgment and social responsibility. Parents also expect schools to help students understand and develop personal and social responsibilities. This course is designed with all the above considerations.

Course Code	Course Name	Teaching Scheme			Credit Assigned			
		Theory	Practical	Tutorial	Theory	TW/ Practical	Tutorial	Total
PK01	PANCH KOSH	03 Hrs. /Week	--	---	NA	NA	NA	NA


**Pre-requisites:** NA.


#### Course Objectives

1. To understand the concept of Ethics in Engineering & Human Values.
2. To realize the significance of Values in Self-development.
3. To imbibe the knowledge, attitudes and skills needed to achieve and sustain a global culture of peace and values.
4. To indoctrinate value education in our students so that they remain committed to professional ethics and responsibilities relevant to professional engineering practice.
5. To address graduate attribute 6, 7, 8,9,10 related to professional engineering practice, sustainability, ethics, team work and communication.
6. To inculcate qualities like cooperation and team building to function effectively as an individual and as a member in teams and in multidisciplinary settings.

#### Course Outcomes

1. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
2. Develop a good moral character and social attitude.
3. Determine the proper use of engineering knowledge to bring uplift in quality of life, along with peace.
4. Responsibilities relevant to professional engineering practice.
5. Cultivation of trust and cooperation in team building Developing effectiveness and self management.

  
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**DETAILED SYLLABUS:**

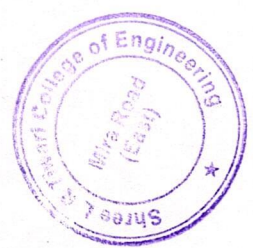
Sr. No	Module	Detailed Contents	Hours
1	Dharma, Layers, Body	Concept of dharma, harmony, understanding panchkosh, dristi, annamayakosh, astang yog	10
2	Energy, Mind, Wisdom, Bliss	Pranmay kosh, life airs , manomaya kosh, check mind, fighting mind, gurukul, vijnamaya kosh, anandmaya kosh	10
3.	Home, Village, Nation, World	Purpose of grihasthashram, procreation, samskaras, vijayanmaya kosh of village, nation inferiority complex, Varma vyavastha the universal principle.	10

**Text Books:**

- 1.A handbook on PANCH KOSH ,Rajesh Anant Kadam

**References:**

- 1. The Journey Home, H H Radhanath Swami, Jaico Publications, 2012
- 2. Morrison, M. L. (2003). Peace education. Australia: McFarland.
- 3. Voice your choice-Ethics from Epics Govinda Das,Tulsi Books,2014



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## **Bridge Course: Value Education for Mind Control**

In today's world there is a need of professionals with ethics and moral values. Society needs educated people with good character and controlled mind. Today's engineering education is focused on developing moral values in students along with technical skills. The social studies suggest that values based education can cultivate important qualities in students like self-esteem, optimism and commitment to personal fulfilment; and help them to understand social responsibility. Parents also expect schools and colleges to help students understand and develop personal and social responsibilities. This course is designed with all the above considerations.

Course Code	Course Name	Teaching Scheme			Credit Assigned			
		Theory	Practical	Tutorial	Theory	TW/ Practical	Tutorial	Total
ADC01	Value Education for Mind Control	01 Hrs. /Week	--	---	NA	NA	NA	NA

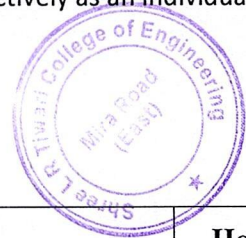
**Pre-requisites:** NA.

### **Course Objectives**

1. To understand the concept of Mind Control in Engineering & Human Values.
2. To realize the significance of Mind Control in Self-development.
3. To learn to open the mind to understand and accept one's flaws along with acknowledging the good things within.
4. To study the exercises to experience the real change which can change one's life.
5. To cultivate qualities like sustainability, ethics, team work and communication.
6. To inculcate qualities like cooperation and team building to function effectively as an individual and as a member in teams and in multidisciplinary settings.

### **DETAILED SYLLABUS:**

Sr. No	Module	Detailed Contents	Hours
1	Necessity of Mind Control	Search for Happiness, Environment of cut throat competition, Disastrous consequences of an uncontrolled mind	5



  
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2	Root study of Mind Control	Improper techniques based on superficial knowledge, Steps of mind control, Faith in the Supreme Power of world, The difference between Body and Aatma	5
3	Techniques of Mind Control	Don't blame others, Depend on GOD for help, Reduce, Needs and enhance Happiness, Obey laws of GOD	5
4	Practice Simple Living and High Thinking	Reduce your necessities, Work only to fulfil basic necessities of life., Develop eternal part of life, Utilise remaining Time, Money and Energy in devotional service of GOD	5
5	Relish the higher test of Service to GOD	Reduce desire of material enjoyment, Make a balance between material life and spiritual life, Engage all your senses in the serving of the lord, Obey laws of GOD to achieve peace of mind	5
6	Mediation for Modern Age	Different methods of Yoga, How they are unsuitable for Kali Yuga, Prescribed simple form of meditation Meaning of MANTRA: (MAN-Mind, TRA-that which delivers the mind from material illusions and anxieties)	5

#### Course Outcomes

1. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
2. Develop a good moral character and social attitude.
3. Determine the proper use of engineering knowledge to bring uplift in quality of life, along with peace.
4. Responsibilities relevant to professional engineering practice.
5. Cultivation of trust and cooperation in team building Developing effectiveness and self-management.


#### Text Books:

1. Practical Tips to Mind Control, Radheshyam Das, Voice Books
2. Singh, Y. K. (2009). Value education. New Delhi: APH Publishing Corporation
2. Beyond Illusion and Doubt, A. C Bhaktivedanta Swami Prabhupada, BBT
3. Bhagvadgita As It is, BBT

#### References:

1. The Journey Home, H H Radhanath Swami, Jaico Publications, 2012
2. Morrison, M. L. (2003). Peace education. Australia: McFarland.
3. Voice your choice-Ethics from Epics Govinda Das, Tulsi Books, 2014



  
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## Bridge Course: Personality Development

<b>Course Code</b>	<b>Course Name: Personality development</b>
<b>PD01</b>	<b>Total Contact Hours :30</b>
	<b>Lecture per week :1</b>
	<b>Prerequisite: Nil</b>
<b>Course Objective</b>	
To enhance holistic development of students and improve their employability skills.	
<b>Course outcome:</b> Learner will be able	
1.	To develop inter personal skills and be an effective goal oriented team player.
2.	To develop professionals with idealistic, practical and moral values.
3.	To develop communication and problem solving skills.
4.	To re-engineer attitude and understand its influence on behavior.

Sr. No.	Module	Detail Contents	Hours
1	<b>Self-Analysis</b>	SWOT Analysis, Who am I, Attributes, Importance of Self Confidence, Self Esteem.	4
2	<b>Creativity</b>	Out of box thinking, Lateral Thinking.	8
3	<b>Attitude</b>	Factors influencing Attitude, Challenges and lessons from Attitude, Etiquette.	6
4	<b>Motivation</b>	Factors of motivation, Self-talk, Intrinsic & Extrinsic Motivators	4
5	<b>Goal Setting</b>	Wish List, SMART Goals, Blue print for success, Short Term, Long Term, Life Time Goals. <b>Time Management</b> Value of time, Diagnosing Time Management, Weekly Planner To do list, Prioritizing work.	8

**TEXT BOOK:**

SOFT SKILLS, 2015, Career Development Centre, Green Pearl Publications.

**REFERENCE**

1. Covey Sean, *Seven Habits of Highly Effective Teens*, New York, Fireside Publishers, 1998.
2. Carnegie Dale, *How to win Friends and Influence People*, New York: Simon & Schuster, 1998.
3. Thomas A Harris, *I am ok, You are ok*, New York-Harper and Row, 1972
4. Daniel Coleman, *Emotional Intelligence*, Bantam Book 2006

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