

Faculty of Engineering & Technology  
KAKATIYA UNIVERSITY, WARANGAL-506 009  
Department of Civil Engineering

**B. Tech. (CIVIL) VIII SEMESTER**

S. No	Course Code	Course Title	Scheme of Instruction			Lecture Hrs/ week	Scheme of Examination		Credits
			L	T	P		CIE	SEE	
<b>Theory</b>									
1.	PEC VII*	Professional Elective -VII	3	-	-	3	30	70	3
2.	PC4204 CE	Computer Aided Design and Drafting Lab	-	-	3	-	25	50	1.5
3.	PW4205 CE	PROJECT WORK PART B	-	-	12	-	50	100	6
4.	OE II*	Open Elective	2	-	-	2	30	70	2
5.	MC	Mandatory Non Credit course	2	-	-	2	30	-	-
Total			07	-	15	07	165	290	12.5

<b>* OE II OPEN ELECTIVE COURSE -II</b>	
OE4201EE	Non-Conventional Energy Sources
OE 4204CS	Information Security
OE4205EC	Nano Technology
OE4206HS	Startup Entrepreneurship
OE4207ME	Metallurgy Of Alloy Steels

<b>* (PE-VII) PROFESSIONAL ELECTIVE COURSE -VII</b>	
PE4201 CE	Advanced Concrete Technology
PE4202 CE	Introduction to Environment Impact Assessment
PE4203 CE	Watershed Management

<b>* (HS MC) Mandatory Non Credit Course</b>	
MC 42a HS	Yoga Practice
MC 42b HS	NSS

Faculty of Engineering & Technology  
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**B. Tech. (CE) VIII SEMISTER**  
**PE4201CEAdvanced Concrete Technology**  
**(Professional Elective Course)**

Course code	PE4201 CE				
Category	Professional Elective Course				
Course title	Advanced Concrete Technology				
Scheme and Credits	L	T	P	Credits	Internal marks = 30
	3	-	-	3	External Marks = 70

**UNIT-I**

Introduction to micro structure of concrete- Hydrated Cement Paste-calcium silicate hydrate and calcium hydroxide, Aggregate Phase, Voids, Water-capillary water, adsorbed water, interlayer water, Interfacial Zone- significance, Relationship between microstructure and properties of concrete.

**UNIT-II**

Durability of concrete- Durability concept, factors affecting, reinforcement corrosion,; fire resistance, frost damage, sulfate attack, chloride attack, creep and shrinkage, deterioration of concrete, alkali silica reaction, concrete in sea water, quality control, acceptance criteria as per BIS code Durability aspects of special concrete- High strength concrete, Self compacting concrete, Geopolymer concrete, Self curing concrete.

**UNIT III**

Mix design of conventional concrete, High strength concrete, Self compacting concrete using IS method; DOE method, ACI method, Mix design of Geopolymer concrete, Self compacting concrete, Self curing concrete, Fiber reinforced concrete, Polymer concrete.

**UNIT IV**

Special processes and technology for particular types of structure - Sprayed concrete; underwater concrete, mass concrete; slip form construction, Prefabrication techniques, Precast concrete and its ingredients, MIVAN shuttering, 3 D Printing in construction

**UNIT V**

Non-destructive testing of concrete: Need and importance of NDT tests, different type of tests- Rebound hammer, Ultrasonic pulse velocity, core cutting , Infrared thermography camera, Ground penetrating radar, corrosion analyser, bar locating instruments, etc.- Test procedures and analysis of NDT tests.

**Suggested Reading**

1. John Newman, Ban SengChoo, Advanced Concrete Technology Constituent materials- volume 1, - Amsterdam- London , Elsevier, Butterworth-Heinemann, 2003, London.
2. P. Kumar Mehta, Paulo J.M. Monteiro, Concrete, Microstructure, properties, materials, Tata McGraw Hill, 2006
3. J. Prasad, C. G. K. Nair, Non-Destructive Test and Evaluation of Materials, McGraw Hill Education, 2011.
4. B K Marsh, Design of normal concrete mixes, Construction Research Communications Ltd, BRE publications, 1997.
5. A. M. Nevellie, Properties of concrete, Pearson Education Limited, 2011.
6. M. S. Shetty, Concrete Technology, S. Chand Publishers, 2013.

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**B. Tech. (CE) VIII SEMISTER**  
**PE4202 CE Introduction to Environment Impact Assessment**  
**(Professional Elective Course)**

Course code	PE4202 CE				
Category	Professional Elective Course				
Course title	Introduction to Environment Impact Assessment				
Scheme and Credits	L	T	P	Credits	Internal marks = 30
	3	-	-	3	External Marks = 70

**UNIT - I**

Environmental Impact Assessment: Definition, basic concepts and principles of EIA. Regulatory frame work in India. Environmental inventory, base line studies, over view of EIA studies.

**UNIT - II**

Assessment and Methodologies: Physical, biological assessment, Socio economic and cultural environmental assessment, EIA methodologies-Adhoc, matrix, checklist approaches. Economic evaluation of impacts-cot benefits of EIA, Public participation in environmental decision making. Procedures for reviewing EIA analysis and statement.

**UNIT - III**

Environmental Laws: Introduction; Resource conservation laws. Indian forest act, 1927, Wildlife protection act, 1972, Forest conservation act, 1980. Anti-pollution laws, Water (prevention and control of pollution), Act, 1974, Water (prevention and control of pollution), Cess act, 1977, air (prevention and control of pollution) act, 1981, Environment (protection) act, 1986, Dispute redressal legislation. A. Public liability insurance act, 1991. National environment tribunal act, 1995.

**UNIT - IV**

Introduction to resource conservation laws; Indian forest act, Wildlife protection act, 1972, Forest conservation act, 1980, Anti-Pollution laws: Water (prevention and control of pollution), Act, 1974, Water (prevention and control of pollution) Cess act, 1977, Air (prevention and control of pollution) act, 1981. Environment (protection) act, 1986, dispute redressal legislation.

**UNIT V**

Municipal Solid Wastes: Characteristics, generation, collection and transportation of solid wastes, engineered systems for solid waste management (reuse/recycle, energy recovery, treatment and disposal).

**References:**

1. Canter, L.W. 'Environmental Impact Assessment', McGraw-Hill Book Company, New York. 1996
2. Corbitt Robert A. Standard Hand Book of Environmental Engineering McGraw-Hill Book Company, New York. 1999
3. Marriott 'Environmental Impact Assessment: A Practical Guide', McGraw-Hill Book Company, New York. 2005

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**B. Tech. (CE) VIII SEMISTER**  
**PE4203 CE WaterShed Management**  
**(Professional Elective Course)**

Course code	PE4203 CE				
Category	Professional Elective Course				
Course title	Water Shed Management				
Scheme and Credits	L	T	P	Credits	Internal marks = 30
	3	-	-	3	External Marks = 70

**UNIT-I**

Definition and concept of Watershed: Concept of watershed development, objectives of watershed development, need for watershed development in India, Integrated and multidisciplinary approach for watershed management.

**UNIT-II**

Characteristics of Watershed: Size, shape, physiographic, slope, climate, drainage, land use, vegetation, geology and soils, hydrology and hydrogeology, socio-economic characteristics, basic data on watersheds.

**UNIT-III**

Principles of Erosion: Types of erosion, factors affecting erosion, effects of erosion on land fertility and land capability, estimation of soil loss due to erosion, Universal soil loss equation. Measures to Control Erosion: Contour techniques, ploughing, furrowing, trenching, bunding, terracing, gully control, rockfill dams, brushwood dam, Gabion.

**UNIT-IV**

Water Harvesting: Rainwater harvesting, catchment harvesting, harvesting structures, soil moisture conservation, check dams, artificial recharge, farm ponds and percolation tanks. Land Management: Land use and land capability classification, management of forest, agricultural, grassland and wild land, reclamation of saline and alkaline soils.

**UNIT-V**

Ecosystem Management: Role of Ecosystem, crop husbandry, soil enrichment, inter mixed and strip cropping, cropping pattern, sustainable agriculture, bio-mass management, dry land agriculture, silvi pasture, horticulture, social forestry and afforestation. Applications: Planning of watershed management activities, peoples participation, preparation of action plan, administrative requirements. Social aspects of watershed management, community participation, private sector participation, industrial issues, socio- economy, integrated development, water legislation and implementations, case studies, applications of geospatial techniques in watershed management systems.

**References:**

1. JVS Murthy, Watershed Management, New Age International publ., New Delhi, 1998
2. R. Awurbs and WP James, Water Resources Engineering, Prentice Hall Publishers
3. VVN Murthy, Land Water Management, Kalyani Publishers
4. D.K. Majumdar, Irrigation and Water Management, Prentice Hall, New Delhi, 2000.
5. C.T. Haan, H.P. Johnson, D.L. Brakensiek, Hydrologic Modeling of Small Watersheds, ASAE, Michigan, 1982.

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**B. Tech. (CE) VIII SEMISTER**  
**PC4204 CE Computer Aided Design and Drafting Lab**  
**(Professional Core Course )**

Course code	PC4204CE				
Category	Professional Core Course				
Course title	Computer Aided Design and Drafting Lab				
Scheme and Credits	L	T	P	Credits	Internal marks = 25
	-	-	3	1.5	External Marks = 50

**Pre Requisites:** Structural Analysis I & II RCC Design Steel Design

**List of Experiments to be performed:**

1. Analysis of Beams (Simply Supported and Continuous)
2. Analysis of Plane Frames for D.L & L.L
3. Analysis of Space Frames for D.L & L.L
4. Analysis of Space Frames subjected to wind & Earthquake Loads
5. Analysis and Design of Residential Building (G+ 2 floors)
6. Analysis and Design of Roof Truss

**Structure Frame**

**Model Generation in any 2 software like STAAD PRO, ETABS etc.**

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**B. Tech. (CE) VIII SEMESTER**  
**PW4205 CE PROJECT WORK PART B**  
**(Project Work)**

Course code	PW4205 CE				
Category	Project Work				
Course title	Project Work PART B				
Scheme and Credits	L	T	P	Credits	Internal marks = 50
	-	-	12	6	External Marks = 100

The aim of project work -II is to implement and evaluate the proposal made as part of project - I. Students can also be encouraged to do full time internship as part of project work-II based on the common guidelines for all the departments. The students placed in internships need to write the new proposal in consultation with industry coordinator and project guide within two weeks from the commencement of instruction.

The Department will appoint a project coordinator who will coordinate the following:

Re-grouping of students - deletion of inters hip candidates from groups made as part of project work-I

Re-Allotment of internship students to project guides

Project monitoring at regular intervals

All re-grouping/re-allotment has to be completed by the IInd week of VIII semesters that students get sufficient time for completion of the project. All projects (internship and departmental) will be monitored at least twice in a semester through student presentation for the award of Sessional marks. Sessional marks are awarded by a monitoring committee comprising of faculty members as well as by the supervisor. The first review of projects for 25 marks can be conducted after completion of five weeks. The second review for another 25 marks can be conducted after 12 weeks of instruction. Common norms will be established for the final documentation of the project report by the respective departments. The students are required to submit draft copies of their project report within one week after completion of instruction.

Note: Three periods of contact load will be assigned to each project guide.

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**B. Tech. (CE) VIII SEMISTER**  
**OE4201EE Non Conventional Energy Sources**  
**(Open Elective Course)**

Course code	OE4201EE				
Category	Open Elective Course				
Course title	Non Conventional Energy Sources				
Scheme and Credits	L	T	P	Credits	Internal marks = 30
	2	-	-	2	External Marks = 70

**UNIT-I**

Review of Conventional and Non-Conventional energy sources - Need for non-conventional energy sources  
Types of Non- conventional energy sources - Fuel Cells - Principle of operation with special reference to H<sub>2</sub>O<sub>2</sub> Cell - Classification and Block diagram of fuel cell systems - Ion exchange membrane cell –Moltencarbonate cells - Solid oxide electrolyte cells - Regenerative system- Regenerative Fuel Cell – Advantages and disadvantages of Fuel Cells-Polarization - Conversion efficiency and Applications of Fuel Cells.

**UNIT-II**

Solar energy - Solar radiation and its measurements - Solar Energy collectors -Solar Energy storage systems- Solar Pond - Application of Solar Pond - Applications of solar energy.

**UNIT-III**

Wind energy- Principles of wind energy conversion systems - Nature of wind - Power in the Wind-Basic components of WECS -Classification of WECS -Site selection considerations -Advantages and disadvantages of WECS -Wind energy collectors -Wind electric generating and control systems - Applications of Wind energy -Environmental aspects.

**UNIT- IV**

Energy from the Oceans - Ocean Thermal Electric Conversion (OTEC) methods - Principles of tidal powergeneration -Advantages and limitations of tidal power generation -Ocean waves - Wave energy conversiondevices -Advantages and disadvantages of wave energy - Geo-Thermal Energy - Types of Geo-ThermalEnergy Systems - Applications of Geo-Thermal Energy.

**UNIT-V**

Energy from Biomass - Biomass conversion technologies / processes - Photosynthesis - Photosynthetic efficiency - Biogas generation - Selection of site for Biogas plant - Classification of Biogas plants – Details of commonly used Biogas plants in India - Advantages and disadvantages of Biogas generation – Thermalgasification of biomass -Biomass gasifiers.

***Suggested Readings:***

1. Rai G.D, *Non-Conventional Sources of Energy*, Khandala Publishers, New Delhi, 1999.
2. M.M. El-Wakil, *Power Plant Technology*. McGraw Hill, 1984

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**B. Tech. (CE) VIII SEMISTER**  
**OE4204CS Information Security**  
**(Open Elective Course)**

Course code	OE4204 CS				
Category	Open Elective Course				
Course title	Information Security				
Scheme and Credits	L	T	P	Credits	Internal marks = 30
	2	-	-	2	External Marks = 70

**UNIT – I**

**Introduction:** Attacks on Computers and Computer Security: Introduction, The need for security, Security approaches, Principles of security, Types of Security attacks, Security services, Security Mechanisms, Threats, A model for Network Security.

**UNIT – II**

**Cryptography Concepts and Techniques:** Introduction, plain text and cipher text, substitution techniques (mono-alphabetic cipher, poly-alphabetic, one-time pad) encryption and decryption, symmetric and asymmetric key cryptography, key range and key size

**UNIT – III**

**Symmetric key Ciphers:** Block Cipher principles & Algorithms (DES, AES, RC4), Key distribution in symmetric system

**UNIT – IV**

**Asymmetric key Ciphers:** Principles of public key crypto systems, Public key Algorithms: RSA, Diffie-Hellman, ECC, Key Distribution Key in asymmetric system.

**UNIT – V**

**Authentication:** Message Authentication Algorithms and Hash Functions: Authentication requirements, Functions, Message authentication codes, Hash Functions, Secure Hash Algorithm-1, Digital signatures, MD5.

**Suggested Readings**

1. Cryptography and Network Security : William Stallings, Pearson Education, 4<sup>th</sup> Edition
2. Information Security, Principles and Practice: Mark Stamp, Wiley India.
3. Cryptography and Network Security: C K Shyamala, N Harin i, Dr T R Padmanabhan, Wiley India, 1<sup>st</sup> Edition.
4. Cryptography and Network Security: Forouzan Mukhopadhyay, MC Graw Hill, 2<sup>nd</sup> Edition.
5. Cryptography and Network Security: Atul Kahate, McGraw hill Edition.
6. Introduction to Network Security: Neal Krawetz, CENGAGE Learning



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**B. Tech. (CE) VIII SEMISTER**  
**OE4205EC Nano Technology**  
**(Open Elective Course)**

Course code	OE4205 EC				
Category	Open Elective Course				
Course title	Nano Technology				
Scheme and Credits	L	T	P	Credits	Internal marks = 30
	2	-	-	2	External Marks = 70

### UNIT I

**INTRODUCTION TO NANOTECHNOLOGY:** Introduction: need for new concepts in electronics from microelectronics towards bio-molecule electronics, types of nanotechnology and nanomachines, periodic table, atomic structure, molecules and phases, energy, molecular and atomic size.

### UNIT II

**FUNDAMENTALS OF NANO ELECTRONICS:** Fundamentals of logic devices: Requirements, dynamic properties, threshold gates, physical limits to computations, concepts of logic devices: classifications, two terminal devices, field effect devices.

### UNIT III

**SILICON MOSFETs:** Silicon MOSFETS, novel materials and alternate concepts: fundamentals of MOSFET Devices, scaling rules, silicon-dioxide based gate dielectrics.

### UNIT IV

**Quantum transport devices based on resonant tunneling:** Electron tunneling, resonant tunneling diodes, resonant tunneling devices; Single electron devices for logic applications

### UNIT V

**CARBON NANOTUBES:** Carbon Nanotube, Fullerenes, types and formation of nanotubes, purification of carbon nanotubes, electronic properties, synthesis of carbon nanotubes

***Suggested Readings:***

1. G.W. Hanson, *Fundamentals of Nan electronics*, Pearson, 2009.
2. W. Ranier, *Nan electronics and Information Technology* (Advanced Electronic Materialand Novel Devices), Wiley-VCH, 2003.
3. K.E. Drexler, *Nanosystems*, Wiley, 1992.
4. J.H. Davies, *The Physics of Low-Dimensional Semiconductors*, Cambridge University Press, 1998.
5. C.P. Poole, F. J. Owens, *Introduction to Nanotechnology*, Wiley, 2003

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**B. Tech. (CE) VIII SEMISTER**  
**OE4206 HS Startup Entrepreneurship**  
**Open Elective Course**

Course code	OE4206 HS				
Category	Open Elective				
Course title	Startup Entrepreneurship				
Scheme and Credits	L	T	P	Credits	Internal marks = 30
	2	-	-	2	External Marks = 70

### Unit I

#### **Creativity & Discovery**

Definition of Creativity, self test creativity, discovery and delivery skills, The imagination threshold, Building creativity ladder, Collection of wild ideas, Bench marking the ideas, Innovative to borrow or adopt, choosing the best of many ideas, management of tradeoff between discovery and delivery, Sharpening observation skills, reinventing self, Inspire and aspire through success stories

### Unit II

From Idea to Start up Introduction to think ahead backward, Validation of ideas using cost and strategy, visualizing the business through value profile, activity mapping, Risks as opportunities, building your own road map

### Unit III

Innovation career lessons Growing & Sharing Knowledge, The Role of Failure In achieving Success, Creating vision, Strategy, Action & Resistance: Differentiated Market Transforming Strategy; Dare to Take Action; Fighting Resistance; All About the startup Ecosystem; Building a Team; Keeping it Simple and Working Hard.

### Unit IV

Action driven business plan Creating a completed non-business plan (a series of actions each of which moves your idea toward implementation), including a list of the activities to be undertaken, with degrees of importance (scale of 1 to 3, where 1 is 'most important). A revision of the original product or service idea, in light of information gathered in the process, beginning to design the business or organization that will successfully implement your creative idea. Preparing an activity map.

### Unit V

Startup financing cycle: Preparing an initial cash flow statement, showing money flowing out (operations; capital) and flowing in. Estimate your capital needs realistically. Prepare a bootstrapping option (self financing). Prepare a risk map. Prepare a business plan comprising five sections: The Need; The Product; Unique Features; The Market; Future Developments. Include a Gantt chart (project plan - detailed activities and starting and ending dates); and a project budget.

**Suggested Readings:**

1. Vasant Desai, "Dynamics of Entrepreneurial Development and Management", Himalaya Publishing House, 1997.
2. Prasanna Chandra, "Project - Planning, Analysis, Selection, Implementation and Review", Tata McGraw-Hill Publishing Company Ltd., 1995.
3. B. Badhai, "Entrepreneurship for Engineers", DhanpathRai & Co., Delhi, 2001.
4. Stephen R. Covey and A. Roger Merrill, "First Things First", Simon and Schuster, 2002.
5. Robert D. Hisrich and Michael P. Peters, "Entrepreneurship", Tata McGraw Hill Edition, 2002.

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**B. Tech. (CE) VIII SEMISTER**  
**OE4207ME Metallurgy Of Alloy Steels**  
**(Open Elective Course)**

Course code	OE4207 ME				
Category	Open Elective Course				
Course title	Alloy Steels				
Scheme and Credits	L	T	P	Credits	Internal marks = 30
	2	-	-	2	External Marks = 70

**UNIT-I**

**Introduction:** Level of structures, structure property relationship, Defects in materials, Strengthening Mechanisms.

**UNIT-II**

**The Iron carbon systems:** Definition of phase, phase diagram. Iron Carbon phase diagram. Definition of phases in Fe-C system. Concept of steel and Cast Iron. Effect of alloying elements on steel

**UNIT-III**

**Heat Treatment of Steels:** Annealing, Normalizing, Hardening and tempering. Thermo Mechanical Treatments. Surface Heat Treatments.

**UNIT-IV**

**Steels:** Plain Carbon Steels: Low-carbon Mild steels, Medium Carbon Steels, High Carbon Steels, properties and applications of Plain Carbon Steels. High Strength Steels, Tool Steels, Creep Resistance Steel

**UNIT-V**

**Stainless steels:** Composition, properties and applications of Austenitic Stainless steel, Ferritic Stainless steel, Martensitic Stainless steel, Precipitation Hardened Stainless steel.

**Suggested Readings:**

1. Introduction to Physical Metallurgy – SH Avner, TATA Mc GRAW HILL ,1997
2. Alloys Steels – Wilson
3. Materials Science and Engineering, An introduction. WD Callister, Jr., Adapted by R. Balasubramaniam, John Wiley & Sons, NY, Indian edition, 2007

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**B. Tech. (CE) VIII SEMISTER**  
**MC 42a HSYoga Practice**  
**(Humanity Science Course)**

Course code	MC 42aHS				
Category	Humanity Science				
Course title	Yoga Practice				
Scheme and Credits	L	T	P	Credits	Internal marks = 30
	2	-	-	-	

#### UNIT – I

**Introduction:** Yoga definition, health definition from WHO, yoga versus health, basis of yoga, yoga is beyond science, Gist of eighteen chapters of Bhagavad-Gita, four types of yoga: Karma, Bhakti, Gnyana and Raja yoga, Internal and External yoga, elements of Ashtanga yoga (Yama, Niyama, Asana, Pranayama, Prathyahara, Dharana, Dhyana and Samadhi), Panchakoshas and their purification through Asana, Pranayama and Dhyana.

#### UNIT – II

**Suryanamaskaras (Sun Salutations):** Definition of sun salutations, seven chakras (Mooladhaar, Swadhishtaan, Manipura, Anahata, Vishuddhi, Agnya and Sahasrar), various manthras (Om Mitraya, Om Ravaye, Om Suryaya, Om Bhanave, Om Marichaye, Om Khagaye, Om Pushne, Om HiranyaGarbhaye, Om Adhityaya, Om Savitre, Om Arkhaya, and Om Bhaskaraya) and their meaning while performing sun salutations, physiology, seven systems of human anatomy, significance of performing sun salutations.

#### UNIT – III

**Asanas (Postures):** Pathanjali's definition of asana, sthiramsukhamasanam, 3rd limb of Ashtanga yoga, loosening or warming up exercises, sequence of perform in asanas (standing, sitting, prone, supine and inverted), nomenclature of asanas (animals, trees, rishis and so on), asanas versus chakras, asanas versus systems, asanas versus physical health, activation of Annamayakosha.

#### UNIT – IV

**Pranayama (Breathing Techniques):** Definition of Pranayama as per Shankaracharya, 4th limb of Ashtanga yoga, various techniques of breathing, Pranayama techniques versus seasons, bandhas and their significance in Pranayama, mudras and their significance in Pranayama, restrictions of applying bandhas with reference to health disorders, Pranayama versus concentration, pranayama is the bridge between mind and body, pranayama versus mental health, activation of Pranamayakosha through Pranayama.

#### UNIT – V

**Dhyana (Meditation):** Definition of meditation, 7th limb of Ashtanga yoga, types of mind (Conscious and Sub-Conscious), various types of dhyana. Meditation versus spiritual health, Dharana and Dhyana, extension of Dhyana to Samadhi, Dhyana and mental stress, activation of Manomayakosha through dhyana, silencing the mind.

***Suggested Readings:***

1. *Light on Yoga* by BKS Iyengar.
2. *Yoga Education for Children, Vol-1* by Swami SatyanandaSaraswati.
3. *Light on Pranayama* by BKS Iyengar.
4. *Asana Pranayama Mudra and Bandha* by Swami SatyanandaSaraswati.
5. *Hatha Yoga Pradipika* by Swami Mukhtibodhananda.
6. *Yoga education for children, Vol-11* by Swami NiranjananandaSaraswati.
7. *Dynamics of Yoga* by Swami SatyanandaSaraswati.

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**B. Tech. (CE) VIII SEMISTER**  
**MC 42b HS NSS**  
**(Humanity Science Course)**

Course code	MC 42b HS				
Category	Humanity Science				
Course title	NSS				
Scheme and Credits	L	T	P	Credits	Internal marks = 30
	2	-	-	-	

**List of Activities:**

1. Orientation programme about the role of NSS in societal development.
2. Swachh Bharat Program.
3. Guest lectures from eminent personalities on personality development.
4. Plantation of saplings/Haritha Haram Program.
5. Blood Donation / Blood Grouping Camp.
6. Imparting computer education to school children.
7. Creating Awareness among students on the importance of Digital transactions.
8. Stress management techniques.
9. Health Check-up Activities.
10. Observation of Important days like Voters' day, World Water Day and so on.
11. Road Safety Awareness Programs.
12. Energy Conservation Activities
13. Conducting Programs on effective communication skills.
14. Awareness programs on national integration.
15. Orientation on Improving Entrepreneurial Skills.
16. Developing Effective Leadership skills.
17. Job opportunity awareness programs in various defense, public sector undertakings.
18. Skill Development Program.
19. Creating awareness among students on the Importance of Yoga and other physical activities.
20. Creating awareness among students on various government sponsored social welfare schemes for the people.

**Note:** At least Ten Activities should be conducted in the Semester. Each event conducted under Swachh Bharat, Plantation and important days like Voters' day, world water day may be treated as a separate activity