II YEAR
I SEMESTER

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY
ADVANCED PRESTRESSED CONCRETE DESIGN
(Professional Elective V)

Course Code: GR24D5022 **L/T/P/C: 3/0/0/3**
II Year I Semester

Prerequisite: Strength of Materials, Structural Analysis, Concrete Technology, Design of Reinforced Concrete Structures and Design of Steel structures.

Course Outcomes:

1. Find out the losses in prestressed concrete and enhance its concepts, which include pre and post tensioning processes.
2. Analyze and design the statically determinate prestressed concrete members.
3. Design the end blocks of prestressed concrete members.
4. Analyze and design the statically indeterminate prestressed concrete members.
5. Design the composite structures using prestressed concrete techniques.

UNIT I
Introduction to Prestressed Concrete: Prestressing Systems – Pre-tensioning Systems – Post-tensioning Systems – High Strength Steel and Concrete - Analysis of Prestress - Resultant Stresses at a Section – Pressure Line or Thrust Line – Concept of Load Balancing.
Losses of Prestress – Loss Due to Elastic Deformation of Concrete – Shrinkage of Concrete – Creep – Relaxation of Stress in Steel – Friction – Anchorage Slip.

UNIT II
Statically Determinate PSC Beams: Design of flexural members for ultimate and serviceability limit states – Analysis and design for Shear and Torsion - Codal provisions.
Deflections of Prestressed Concrete Members: Importance of Control of Deflections – Factors Influencing Deflection – Short-term Deflections of Uncracked Members – Prediction of Long-time Deflections – Deflections of Cracked Members – Requirements of IS 1343-2012.

UNIT III
Design of End Bocks: Transmission of prestress in pre-tensioned members – Anchorage zone stresses for post-tensioned members. Anchorage zone Reinforcement as per IS1343- 2012.

UNIT IV
Statically Indeterminate Structures: Analysis and design of continuous beams and frames – Choice of cable profile – Linear transformation and concordancy - Analysis and design of prestressed concrete Pipes and Columns with moments.

UNIT V
Composite Constructions: Introduction, Advantages, Types of Composite Construction, Analysis of Composite beams- Differential shrinkage- Ultimate Flexural and shear strength of composite sections-Deflection of Composite Beams. Design of Composite sections.

Text Books:

1. Prestressed Concrete by Krishna Raju; - Tata Mc.Graw Hill Publications, 2018.
2. Prestressed concrete by K.U. Muthu, PHI Learning Pvt. Ltd. 2016.
3. Prestressed Concrete by Ramamrutham; Dhanpatrai Publications, 2016.

Reference Books:

1. Design of Prestressed concrete structures (Third Edition) by T.Y. Lin & Ned H.Burns, John Wiley & Sons. 2010.
2. Prestressed Concrete Design, by Dr. Praveen Nagarajan , Pearson Education India publisher, 2013.
3. Prestressed Concrete Analysis and Design: Fundamentals, by Antoine E. Naaman, Techno Pr 3000 publisher, 2004.
4. Analysis and Design of Prestressed Concrete Structures, by Shamsher Bahadur Singh, Wiley publisher, 2023.
5. Codes: IS 1343 -2012- BIS code of practice for Prestressed concrete.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY
ANALYSIS OF LAMINATED COMPOSITE PLATES
(Professional Elective V)

Course Code: GR24D5023 **L/T/P/C: 3/0/0/3**

II Year I Semester

Prerequisites: Advanced Solid Mechanics, Fundamentals of FEM

Course Outcomes:

1. Identify the Displacement Field Approximations for CLPT and FSDT.
2. Analyze the Solutions for Bending of Rectangular Laminated Plates using CLPT.
3. Make use of Finite Element Solutions for Bending of Rectangular Laminated Plates using CLPT.
4. Create Finite Element models.
5. Develop the computer programs for the analysis of composite plates.

UNIT I

Introduction: Displacement Field Approximations for Classical Laminated Plate Theory (CLPT)and First Order Shear Deformation Theory (FSDT), Analytical Solutions for Bending of Rectangular Laminated Plates using CLPT.

UNIT II

Governing Equations: Naiver Solutions of Cross-Ply and Angle-Ply Laminated Simply-Supported Plates, Determination of Stresses. Levy Solutions for Plates with Other Boundary Conditions, Analytical Solutions for Bending of Rectangular Laminated Plates using FSDT.

UNIT III

Introduction to Finite Element Method: Rectangular Elements, Formation of Stiffness Matrix, Formation of Load Vector, Numerical Integration, Post Computation of Stresses. Finite Element Solutions for Bending of Rectangular Laminated Plates using CLPT.

UNIT IV

Finite Element Solutions for Rectangular Laminated Plates: Finite Element Solutions for Bending of Rectangular Laminated Plates using FSDT. Finite Element Model, C0Element Formulation, Post Computation of Stresses.

UNIT V

Analysis of Rectangular Composite Plates: Analysis of Rectangular Composite Plates using Analytical Methods.

Text Books:

1. Mechanics of Laminated Composites Plates and Shells, Reddy J. N., CRC Press,2nd edition, 2003.
2. Theory and analysis of elastic plates and shells. J.N Reddy, CRC Press,2006.
3. Laminated Composites Plates and Shells, Jianqiao, Ye, Springer, London,3rd edition, 2002.

Reference Books:

1. Mechanics of Composite Materials and Structures" by Carlos A. Mota Soares, Cristóvão M. Mota Soares, and Manuel J. M. Freitas, Kluwer Academic Publishers,1999.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY
THEORY OF THIN PLATES AND SHELLS
(Professional Elective-V)

Course Code: GR24D5024 **L/T/P/C: 3/0/0/3**
II Year I Semester

Prerequisites: Solid Mechanics, Theory of Structural stability

Course Outcomes
1. Analyze the solution of thin long rectangular plates.
2. Examine the solution of small deflection theory of rectangular plates.
3. Analyze the solution of Circular plates and Orthotropic plates.
4. Utilize analytical methods for the solution of shells.
5. Inspect the Axi- symmetric shells.

UNIT I
Cylindrical Bending: Different kind of plates – Assumptions - Derivation of differential equation for cylindrical bending of long rectangular plates - Analysis of uniformly loaded rectangular plates with edges simply supported and fixed subjected to uniform load.
Pure Bending of Plates: Slope and curvature of slightly bent plates – Relations between moments and curvature - Particular cases of pure bending - Strain energy in pure bending –Energy methods like Ritz and Galerkin Methods to rectangular plates subjected to simple loadings

UNIT II
Small Deflection Theory of Thin Rectangular Plates: Assumptions-Derivation of governing differential equation for thin plates-Boundary conditions- supported plate under simply sinusoidal load- Navier's solution- Application to cases – Levy's solution for various boundary conditions subjected to different loadings like uniform and hydrostatic pressure.

UNIT III
Circular Plates: Symmetrical loading – Relations between slope, deflection, moments and curvature – Governing differential equation – Uniformly loaded plates with clamped and simply supported edges – Central hole – bending by moments and shearing forces uniformly distributed.
Orthotropic Plates: Introduction – Bending of anisotropic plates - Derivation of governing differential equation – Determination of Rigidities in various cases like R.C. slabs, corrugated sheet – Application to the theory of grid works.

UNIT IV
Analysis of Shells
Shells – functional behaviour – examples – structural behaviour of shells, classification of shells. Definitions – various methods of analysis of shells – merits and demerits of each method – 2D - Membrane equation. Equations of equilibrium: Derivation of stress resultants – Cylindrical shells Flugge's simulations equations- DKJ Theory.

UNIT V
Shells of Revolution.
Axi- Symmetrical Shells-Governing general equations. Application to spherical shells and hyperboloid of revolution, cooling towers.

Text Books:

1. Theory of Plates & Shells –Stephen, P. Timoshenko, S. Woinowsky-Krieger – Tata MC Graw-Hill 2nd Edition,2017
2. G.S.Ramaswami, Analysis and design of concrete shell roofs, CBS publishers, first edition,2005.
3. Design of Shells and Folded Plates by P.C. Varghese, PHI Learning Pvt. Ltd, 2010 Edition

Reference Books:

1. Y.C.Fung Theory of Elasticity, Prentice Hall publications, Reprint 2023.
2. Dr.N.Krishna Raju, Advanced R.C Design, CBS publishers and distributors Pvt Ltd, 3rd edition, 2016.
3. Chaterjee, Design of concrete shell roofs, Spon press,3rd Edition, 1990.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY
COST MANAGEMENT OF ENGINEERING PROJECTS
(Open Elective I)

Course Code: GR24D5051 **L/T/P/C: 3/0/0/3**
II Year I Semester

Course Outcomes:
1. Discuss various construction costs to manage a construction project.
2. Summarize different construction activities and its application related to cost based on the field requirements.
3. Identify Cost Behaviour of various types of cost and Quality Management
4. Identifying various construction Budgets involved Cost Management process.
5. Discussing various types of Techniques and Problem-solving techniques involved in Construction

UNIT I
Introduction: Overview of the Strategic Cost Management Process, Cost concepts in decision-making; relevant cost, Differential cost, Incremental cost, Opportunity cost. Objectives of a Costing System; Inventory valuation; Creation of a Database for operational control; Provision of data for Decision-Making.

UNIT II
Project: Meaning, Different types, why to manage, cost overruns centres, various stages of project execution: conception to commissioning; Project execution as conglomeration of technical and non- technical activities; Detailed Engineering activities; Pre project execution main clearances and documents; Project team - Role of each member; Project contracts; Bar charts and Network diagram; Project commissioning - mechanical and process.

UNIT III
Cost Behaviour and Profit Planning: Marginal Costing; Distinction between Marginal Costing and Absorption Costing; Break-even Analysis and Cost-Volume-Profit Analysis (theory only). Standard Costing and Variance Analysis. Pricing strategies: Pareto Analysis. Target costing, Life Cycle Costing. Just-in-time approach, Material Requirement Planning, Enterprise Resource Planning, Total Quality Management and Theory of constraints. Activity- Based Cost Management, Bench Marking; Balanced Score Card and Value-Chain Analysis (theory only).

UNIT IV
Budgetary Control: Flexible Budgets; Performance budgets; Zero-based budgets; Measurement of Divisional profitability pricing decisions including transfer pricing.

UNIT V
Qualitative and Quantitative Techniques: Quantitative techniques for cost management, Linear Programming, PERT / CPM, Transportation and Assignment, problems (theory only), Simulation, Learning Curve theory.

Text Books:

1. Robert S Kaplan Anthony A. Alkinson, Management & Cost Accounting, Pearson publications,3rd edition,1998.
2. N.D. Vohra, Quantitative Techniques in Management, Tata McGraw Hill Book Co. Ltd, 6th edition,2021.
3. Srikant Datar, Cost Accounting A Managerial Emphasis, Prentice Hall of India, New Delhi, 16th edition, 2017.

Reference Books:

1. Charles T. Horngren and George Foster, Advanced Management Accounting, prentice Hall, 13th edition, 2008.
2. Ashish K. Bhattacharya, Principles & Practices of Cost Accounting A. H. Wheeler publisher, 3rd edition, 2012.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY
ADVANCED COMPUTER NETWORKS
(OPEN ELECTIVE I)

Course Code: GR24D5052 **L/T/P/C:3/0/0/3**
II YEAR I SEMESTER

Course outcomes:

1. Understanding of holistic approach to computer networking.
2. Demonstrate the computer network protocols and their applications.
3. Design simulation concepts related to packet forwarding in networks.
4. Explore advanced concepts in wireless and mobile networking.
5. Implement emerging trends and technologies in computer networks.

UNIT I

Data-link protocols: Ethernet, Token Ring and Wireless (802.11). Wireless Networks and Mobile IP: Infrastructure of Wireless Networks, Wireless LAN Technologies, IEEE 802.11 Wireless Standard, Cellular Networks, Mobile IP, Wireless Mesh Networks (WMNs), Multiple access schemes Routing and Internetworking: Network–Layer Routing, Least-Cost-Path algorithms, Non-Least-Cost-Path algorithms, Intra-domain Routing Protocols, Inter-domain Routing Protocols, Congestion Control at Network Layer.

UNIT - II

Transport and Application Layer Protocols: Client-Server and Peer-To-Peer Application Communication, Protocols on the transport layer, reliable communication. Routing packets through a LAN and WAN. Transport Layer, Transmission Control Protocol (TCP), User Datagram Protocol (UDP), Mobile Transport Protocols, Principles of Network Applications, TCP Congestion Control.

UNIT- III

The Web and HTTP, File Transfer: FTP, Electronic Mail in the Internet, Domain Name System (DNS), P2P File Sharing, Socket Programming with TCP and UDP, building a Simple Web Server Creating simulated networks and passing packets through them using different routing techniques. Installing and using network monitoring tools.

UNIT - IV

Wireless and Mobile Networks: Introduction, Wireless links and Network Characteristics - CDMA, Wifi: 802.11 Wireless LANS, Cellular internet access, Mobility management: Principles.

UNIT - V

Multimedia networking: Multimedia networking applications, streaming stored video, Voice-over-IP,Protocols for real-time conversational applications.

Text Books:

1. Computer Networking: A Top-Down Approach, James F. Kuros and Keith W. Ross,Pearson, 6th Edition, 2012.
2. Computer Networks and Internets, Duglas E. Comer, 6th Edition, Pearson.

References Books:

1. A Practical Guide to Advanced Networking, Jeffrey S. Beasley and Piyasat Nilkaew, Pearson, 3rd Edition, 2012.
2. Computer Networks, Andrew S. Tanenb.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY
ENGLISH FOR RESEARCH PAPER WRITING
(Audit Course)

Course Code: GR24D5053 **L/T/P/C: 2/0/0/0**
I Year II Semester

Course Outcomes:

1. Give a view of what writing is all about
2. Understand Research and its process
3. Comprehend the steps and methods involved in research process
4. Have learned various skills necessary that are necessary for doing research
5. Have learned how to write quality research papers along with other research areas

UNIT I

Overview of a Research Paper- Planning and Preparation- Word Order- Useful Phrases - Breaking up Long Sentences-Structuring Paragraphs and Sentences -Being Concise and Removing Redundancy - Avoiding Ambiguity

UNIT II

Essential Components of a Research Paper- Abstracts- Building Hypothesis-Research Problem - Highlight Findings- Hedging and Criticizing, Paraphrasing and Plagiarism, Chapterisation

UNIT III

Introducing Review of the Literature – Methodology - Analysis of the Data-Findings - Discussion-Conclusions-Recommendations.

UNIT IV

Key skills needed for writing a Title, Abstract, and Introduction

UNIT V

Appropriate language to formulate Methodology, incorporate Results, put forth Arguments and draw Conclusions

Text Book:

1. Goldbort R (2006) Writing for Science, Yale University Press (available on Google Books)
Model Curriculum of Engineering & Technology PG Courses [Volume-I]

Reference Books:

1. Day R (2006) How to Write and Publish a Scientific Paper, Cambridge University Press
2. Highman N (1998), Handbook of Writing for the Mathematical Sciences, SIAM. Highman's book.
3. Adrian Wallwork, English for Writing Research Papers, Springer New York Dordrecht Heidelberg London, 2011.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY
SANSKRIT FOR TECHNICAL KNOWLEDGE
(Audit Course)

Course Code: GR24D5055 **L/T/P/C: 2/0/0/0**
I Year II Semester

Course Outcomes:

1. Understanding basic Sanskrit alphabets and Understand tenses in Sanskrit Language.
2. Enable students to understand roots of Sanskrit language.
3. Students learn engineering fundamentals in Sanskrit.
4. Students can attempt writing sentences in Sanskrit.
5. Ancient Sanskrit literature about science & technology can be understood

UNIT I
Alphabets in Sanskrit, Past/Present/Future Tense, Simple Sentences

UNIT II
Order, Introduction of roots, technical information about Sanskrit Literature

UNIT III
Technical concepts of Engineering-Electrical, Mechanical, Architecture, Mathematics and Applications of OCR for Sanskrit and Indian Languages, Tool and Techniques, Survey

UNIT IV
Interactive Sanskrit Teaching Learning Tools: Interactive Sanskrit Learning Tools, Introduction, Why Interactive Tools for Sanskrit? E-learning, Basics of Multimedia, Web based tools development HTML, Web page etc., Tools and Techniques

UNIT V
Standard for Indian Languages (Unicode) Unicode Typing in Devanagari Scripts, Typing Tools and Software, Text Processing and Preservation Tools, Text Processing, Preservation, Techniques, Text Processing and Preservation, Tools and Techniques, Survey

Suggested reading

1. "Abhyaspustakam" – Dr.Vishwas, Samskrita-Bharti Publication, New Delhi
2. "Teach Yourself Sanskrit" Prathama Deeksha-Vempati Kutumbshastri, Rashtriya Sanskrit Sansthanam, New Delhi Publication
3. "India's Glorious Scientific Tradition" Suresh Soni, Ocean books (P) Ltd., New Delhi.
4. Bharti A., R. Sangal, V. Chaitanya, "NL, Complexity Theory and Logic" in Foundations of Software Technology and Theoretical Computer Science, Springer, 1990.
5. Tools developed by Computational Linguistics Group, Department of Sanskrit, University of Delhi, Delhi-110007 available at: http://sanskrit.du.ac.in
6. Basic concept and issues of multimedia: http://www.newagepublishers.com/samplechapter/001697.pdf.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

VALUE EDUCATION

(Audit Course)

Course Code: GR24D5056 **L/T/P/C: 2/0/0/0**

I Year II Semester

Course Outcomes:

1. Knowledge of self-development
2. Learn the importance of Human Values
3. Developing the Professionalism Ethics, Risks, Responsibilities and Life Skills.
4. Student will be able to realize the significance of ethical human conduct and self-development
5. Students will be able to inculcate positive thinking, dignity of labor and religious tolerance.

UNIT I

Values and self-development –Social values and individual attitudes. Work ethics, Indian vision of humanism. Moral and non- moral valuation. Standards and principles. Value judgements

UNIT II

Importance of cultivation of values, Sense of duty. Devotion,Self-reliance. Confidence, Concentration. Truthfulness, Cleanliness. Honesty, Humanity. Power of faith, National Unity. Patriotism. Love for nature, Discipline

UNIT III

Personality and Behaviour Development - Soul and Scientific attitude. Positive Thinking. Integrity and discipline. Punctuality, Love and Kindness. Avoid fault Thinking. Free from anger, Dignity of labour. Universal brotherhood and religious tolerance. True friendship. Happiness Vs suffering, love for truth. Aware of self-destructive habits. Association and Cooperation. Doing best for saving nature

UNIT IV

Character and Competence –Holy books vs Blind faith. Self-management and Good health. Science of reincarnation. Equality, Nonviolence, Humility, Role of Women. All religions and same message. Mind your Mind, Self-control. Honesty, Studying effectively

UNIT V

Introduction to Professional Ethics: Basic Concepts, Governing Ethics, Personal & Professional Ethics, Ethical Dilemmas, Life Skills, Emotional Intelligence, Thoughts of Ethics, Value Education, Dimensions of Ethics, Profession and professionalism, Professional Associations, Professional Risks, Professional Accountabilities, Professional Success, Ethics and Profession.

Suggested reading

1. Chakroborty, S.K. “Values and Ethics for organizations Theory and practice”, Oxford University Press, New Delhi
2. Jagdish Chand, “Value Education”
3. N. Venkataiah, “ Value Education”, APH Publishing, 1998 - Education

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY
INDIAN CONSTITUTION
(Audit Course)

Course Code: GR24D5057 **L/T/P/C: 2/0/0/0**
I Year II Semester
Course Outcomes:

1. Discuss the growth of the demand for civil rights in India for the bulk of Indians before the arrival of Gandhi in Indian politics.
2. Discuss the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India.
3. Discuss the circumstances surrounding the foundation of the Congress Socialist Party [CSP] under the leadership of Jawaharlal Nehru and the eventual failure of the proposal of direct elections through adult suffrage in the Indian Constitution.
4. Discuss the passage of the Hindu Code Bill of1956.
5. Discuss the significance of Election Commission of India.

UNIT I
History of Making of the Indian Constitution: History Drafting Committee, (Composition & Working)

UNIT II
Philosophy of the Indian Constitution: Preamble Salient Features

UNIT III
Contours of Constitutional Rights & Duties: Fundamental Rights, Right to Equality, Right to Freedom, Right against Exploitation, Right to Freedom of Religion, Cultural and Educational Rights, Right to Constitutional Remedies, Directive Principles of State Policy, Fundamental Duties.

UNIT IV
Organs of Governance and composition of judiciary: Parliament- Composition, Qualifications and Disqualifications, Powers and Functions, Executive, President, Governor, Council of Ministers, composition of judiciary, Appointment and Transfer of Judges, Qualifications, Powers and Functions

UNIT V
Local Administration and Election Commission: District's Administration head: Role and Importance, Municipalities: Introduction, Mayor and role of Elected Representative, CEO of Municipal Corporation. Pachayati raj: Introduction, PRI: Zila Pachayat. Elected officials and their roles, CEO Zila Pachayat: Position and role. Block level: Organizational Hierarchy (Different departments), Village level: Role of Elected and Appointed officials, Importance of grass root democracy
Election Commission: Election Commission: Role and Functioning, Chief Election Commissioner and Election Commissioners, State Election Commission: Role and Functioning

Suggested reading

1. The Constitution of India, 1950 (Bare Act), Government Publication.
2. Dr. S. N. Busi, Dr. B. R. Ambedkar framing of Indian Constitution, 1st Edition, 2015.
3. M. P. Jain, Indian Constitution Law, 7th Edn., Lexis Nexis, 2014.
4. D.D. Basu, Introduction to the Constitution of India, Lexis Nexis, 2015.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

PEDAGOGY STUDIES

(Audit Course)

Course Code: GR24D5058 **L/T/P/C: 2/0/0/0**

I Year II Semester

Course Outcomes:

1. What pedagogical practices are being used by teachers in formal classrooms in developing countries?
2. What pedagogical practices are being used by teachers in informal classrooms in developing countries?
3. Synergy from the work force.
4. What is the evidence on the effectiveness of these pedagogical practices, in what conditions, and with what population of learners?
5. How can teacher education (curriculum and practicum) and the school curriculum and guidance materials best support effective pedagogy?

UNIT I

Introduction and Methodology: Aims and rationale, Policy background, Conceptual framework and terminology Theories of learning, Curriculum, Teacher education. Conceptual framework, Research questions**.** Overview of methodology and searching.

UNIT II

Thematic overview: Pedagogical practices are being used by teachers in formal and informal classrooms in developing countries. Curriculum, Teacher education.

UNIT III

Evidence on the effectiveness of pedagogical practices, Methodology for the in-depth stage: quality assessment of included studies. How can teacher education (curriculum and practicum) and the school curriculum and guidance materials best support effective pedagogy? Theory of change. Strength and nature of the body of evidence for effective pedagogical practices. Pedagogic theory and pedagogical approaches. Teachers' attitudes and beliefs and Pedagogic strategies.

UNIT IV

Professional development: alignment with classroom practices and follow- up support, Peer support, Support from the head teacher and the community, Curriculum and assessment, Barriers to learning: limited resources and large class sizes

UNIT V

Research gaps and future directions: Research design, Contexts, Pedagogy, Teacher education, Curriculum and assessment, Dissemination and research impact.

Suggested reading

1. Ackers J, Hardman F (2001) Classroom interaction in Kenyan primary schools, Compare, 31 (2): 245-261.
2. Agrawal M (2004) Curricular reform in schools: The importance of evaluation, Journal of Curriculum Studies, 36 (3): 361-379.
3. Akyeampong K (2003) Teacher training in Ghana - does it count? Multi-site teacher education research project (MUSTER) country report 1. London: DFID.
4. Akyeampong K, Lussier K, Pryor J, Westbrook J (2013) Improving teaching and learning of basic maths and reading in Africa: Does teacher preparation count? International Journal Educational Development, 33 (3): 272–282.
5. Alexander RJ (2001) Culture and pedagogy: International comparisons in primary education. Oxford and Boston: Blackwell.
6. Chavan M (2003) Read India: A mass scale, rapid, 'learning to read' campaign.
7. www.pratham.org/images/resource%20working%20paper%202.pdf.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY
STRESS MANAGEMENT & YOGA
(Audit Course)

Course Code: GR24D5059 **L/T/P/C: 2/0/0/0**

I Year II Semester

Course Outcomes:

1. Develop healthy mind in a healthy body thus improving social health also improve efficiently.
2. Develop body awareness. Learn how to use their bodies in a healthy way. Perform well in sports and academics.
3. Will balance, flexibility, and stamina, strengthen muscles and connective tissues enabling good posture.
4. Manage stress through breathing, awareness, meditation and healthy movement.
5. Build concentration, confidence and positive self-image

UNIT I

Definitions of Eight parts of yoga. (Ashtanga)- Ashtanga, the eight limbs of yoga, is Patanjali's classification of classical yoga, as set out in his Yoga Sutras. He defined the eight limbs as yama (abstinences), niyama (observances), asana (postures), pranayama (breathing), pratyahara (withdrawal), dharana (concentration), dhyana (meditation) and Samadhi (absorption).

UNIT II

Orientation to Patanjala Yoga sutra:Introduction to Yoga sutra - Nature of Yoga science, Definition of yoga, the nature of seer in pure and modified state, Vrittis - Nature, classification, definition, method to control of chitta vrittis. Samprajnata Samadhi and its classification, Iswarapranidhana - a means to attain Samadhi, definition and quality of Iswara. Astanga yoga-Vama, Niyama, Asana, Pranayama, Ratyahara-Bahiranga Yoga, Dharana, Dhyana, Samadhi-Antaranga Yoga, Powers Introduction.

UNIT III

Orientation of Hath yoga pradipika :Hath yoga - Introduction, relationship of Hath yoga and Raja yoga, greatness of Hath yoga, Hath yogi parampara, importance of Hath and its secrecy, place of Hath yoga Practice, Destructives and constructive of yoga, Yama and Niyama, Asana, methods of Hath yoga Practice, Mitahara, Pathya and Apathya. Rules in food taking, Hath yoga achievements. Paranayama - Benefits of Pranayama, Nadishuddi and Pranayama. Duration and time for pranayama practice, Gradation of Pranayama, Sweat and Pranayama, Food during pranayama practice, Yukta and Ayukta pranayama, Nadishuddi, Satkriya-Neti, Dhouti, Basti, Nauli, Trataka, Kapalbhati, Gajakarani, Importance of Pranayama practice. Symtoms of Nadishuddhi, Manonnani, Varieties of Kumbhaka-Methods of practice, Classification of their benefits, Hathayogasiddhilakshanam. Kundalini as base for all yoga, Results of Kundalini prabyodha, Synonyms for Susumna, Mudras Bandhas-classification, benefits and methods of practice, Nadanusandhana.

UNIT IV

Yam and Niyam. Do`s and Don'ts in life. Ahinsa, satya, astheya, bramhacharya & aparigrahaShaucha, santosh, tapa, swadhyay, ishwarpranidhan

UNIT V

Asan and Pranayam - Various yoga poses and their benefits for mind & body. Regularization of breathing techniques and its effects-Types of pranayam

Suggested reading

1. 'Yogic Asanas for Group Training - Part-I" : Janardan Swami Yogabhyasi Mandal,Nagpur
2. "Rajayoga or conquering the Internal Nature" by SwamiVivekananda, AdvaitaAshrama (Publication Department),Kolkata
3. Rajayoga - Swami Vivekananda - Ramakrishna Ashrama Publications.
4. Hathayoga Pradipika of Swatmarama - Kaivalyadhama, Lonavala
5. The Science of Yoga - Taimini - Theosophical Publishing House, Adyar, Madras.
6. Yogasutras of Patanjali - Hariharananda Aranya, University of Calcutta Press, Calcutta.
7. Patanjal Yoga Pradeepa Omananda Tirtha- Geeta Press, Gorakhpur.
8. Gherandasamhita - Bihar School of Yoga, Munger, Bihar.
9. Shivayogadipika - Sadashivabrahmendra, Ananda Ashramagranthavali, Choukhamba Press
10. Yoga Darshan : Swami Niranjanananda-Sri Panchadashanam Paramahamsa Alakh Bara, Deoghar.
11. Four chapters on Freedom (commentary on the Yoga sutras of Patanjali), Swami Satyananda (1983), Bihar School of Yoga, Munger.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

PERSONALITY DEVELOPMENT THROUGH LIFE ENLIGHTENMENT SKILLS

(Audit Course)

Course Code: GR24D5060 **L/T/P/C: 2/0/0/0**

I Year II Semester

Course Outcomes

1. Study of Shrimad- Bhagwad-Gita wiil help the student in developing his personality and achieve the highest goal in life
2. The person who has studied Geeta will lead the nation and mankind to peace and prosperity
3. Study of Neethishatakam will help in developing versatile personality of students
4. To develop self-developing attitude towards work without self-aggrandizement and to develop suffering free meditative mind
5. To develop tranquil attitude in all favorable and unfavorable situations and to develop high spiritual intelligence

UNIT I: Neetisatakam-Holistic development of personality

- Verses- 19,20,21,22 (wisdom)
- Verses- 29,31,32 (pride & heroism)
- Verses- 26,28,63,65 (virtue)

UNIT II: Neetisatakam-Holistic development of personality

- Verses- 52,53,59 (dont's)
- Verses- 71,73,75,78 (do's)

UNIT III: Approach to day to day work and duties.

- Shrimad Bhagwad Geeta: Chapter 2-Verses 41, 47,48,
- Chapter 3-Verses 13, 21, 27, 35, Chapter 6-Verses 5,13,17, 23, 35,
- Chapter 18-Verses 45, 46, 48.

UNIT IV: Statements of basic knowledge.

- Shrimad Bhagwad Geeta: Chapter2-Verses 56, 62, 68
- Chapter 12 -Verses 13, 14, 15, 16,17, 18
- Personality of Role model. Shrimad Bhagwad Geeta:

UNIT V:

- Chapter2-Verses 17, Chapter 3-Verses 36,37,42,
- Chapter 4-Verses 18, 38,39
- Chapter18 – Verses 37,38,63

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1. "Srimad Bhagavad Gita" by Swami Swarupananda Advaita Ashram (Publication Department), Kolkata.
2. Bhartrihari's Three Satakam (Niti-sringar-vairagya) by P.Gopinath, Rashtriya Sanskrit Sansthanam, New Delhi.