

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH. (INDUSTRIAL ENGINEERING AND MANAGEMENT)**

EFFECTIVE FROM ACADEMIC YEAR 2021-22 ADMITTED BATCH

R19 COURSE STRUCTURE AND SYLLABUS

I Year I Semester

Course Code	Course Title	L	T	P	Credits
Professional Core-I	Industrial Engineering Practices	3	0	0	3
Professional Core-II	Statistical Quality Control	3	0	0	3
Professional Elective - I	1. Optimization Techniques & Applications 2. Materials Management	3	0	0	3
Professional Elective - II	1. Management Information Systems 2. Management Theory and Practices	3	0	0	3
	Research Methodology & IPR	2	0	0	2
Lab - I	Industrial Engineering Practices Lab	0	0	4	2
Lab - II	Statistical Quality Control System Lab	0	0	4	2
Audit - I	Audit Course - I	2	0	0	0
	Total	16	0	8	18

Audit Course I & II:

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. TECH. I Year I Sem. (IEM)

INDUSTRIAL ENGINEERING PRACTICES (Professional Core - I)

UNIT- I

Work Study: Introduction – Introduction – definition – objectives – steps in work study

Method study – definition – objectives steps of method study.

Work Measurement – purpose – types of study – stop watch methods – steps – key rating – allowances – standard time calculations – work sampling.

UNIT- II

Work Place Design: Anthropometry. Structural body dimensions, use of anthropometry data, work space dimensions – work space for personal when seated – minimum requirement for restricted spaces work surfaces, horizontal work surfaces, work surfaces when seated, standing science of seating, principles of seat design.

Nature of Man – Machine system – Fundamental man – Machine system assumptions – types of Systems – Data base if human factors – Human performance – types of human error in system tasks – task data –empirical task data – Judgmental task data.

UNIT- III

Visual displays – Process of seeing – types of visual activity – conditions that affect visual discriminations – Quantitative visual display – Basic design of dynamic quantitative displays – specific features of quantitative scales – Quantitative visual display – Strategy indicators – signal and warning lights.

Job design – job evaluation – methods of job evaluation – simple routing objective systems – classification method – factor comparison method – point method – benefits of job evaluation and limitations.

Merit rating – job evaluation Vs merit rating – objectives of merit rating – method for merit rating – ranking method – paid company method – checklist method.

UNIT- IV

Wage incentive scheme – wages – objectives of a good wage incentive plan – basis of good wage – incentive plan – plan- types of wage – incentive plans – time method – straight piece rate method – differential piece rate method – Hasley premium plan – Emerson efficiency plan – Bedeaux point plan.

UNIT- V

Estimating and Costing, Estimation: Importance – Aims – functions – Qualities of estimator, Cost – definition Aims standard cost – difference between estimating and costing – costing methods –elements of costs – mensuration. Estimating of material cost – machine shop – sheet metal shop – forging – welding shop.

REFERENCE BOOKS:

1. Motion and time Study / Ralph M Barnes/ John Willey & Sons.
2. Works Study / ILo
3. Human factors in Engineering & Design / Ernest J Mc Cormick/TMH
4. Production Operation management / Paneer Selvam/PH1
5. Industrial Engineering Management / Ravi Shankar/Galgotia
6. Mechanical Estimating Costing / T. T Banga & S.C Sharma/Khanna Publishers
7. Industrial Engineering Hand Book/ Maynard.

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M. TECH. I Year I Sem. (IEM)

STATISTICAL QUALITY CONTROL (Professional Core - II)

UNIT - I

Quality – definition, difference between quality control and inspection, variable, attribute, assignable and non-assignable causes.

Description of patterns of variation, averages, measures of desparations, sampling statistics, universe parameters, normal curves, theory of probability, random variables, there distributions, standard distributions, binomial hyper geometry, estimator, properties of estimator, estimate, point estimate, confidence interval, limits.

UNIT - II

X and R Charts, necessary steps, decisions preparatory to charts, making and recording, trail control limits calculations drawings of preliminary conclusions, relations between processes out of control and specifications limits use of charts, process capability, definition in analysis of process capability, sources of variability.

UNIT - III

Charts for fraction rejected need for charts for attributes, control limits for the P chart, necessary steps, decision preparation to control, decision on the selection of sub groups, choice between charts P and Chart for NP interpretation of lack of causes, reports and action, sensitivity of P charts.

UNIT - IV

Control charts for non-conformities, conditions favorable, control limits for C and U charts, U charts for non-conformities.

Aspects of specification and tolerance, purpose and content, design and inspection, statistical methods setting better specification limit, establishment of tolerance limit by pilot runs, two statistical theorems precisions.

UNIT - V

Acceptance sampling, need concept, economics, symbols and terminology, formation of lot for acceptance, lot-by-lot Don roaming system for lot by lot, acceptance sampling by attributes.

An AQL system for lot by-lot acceptance, sampling by attributes, selection of acceptance sampling system, determining the sample size code letter, probability of acceptance of lot having AQL percent defective, O.C. curves under normal, tightened and reduced inspections, calculating probability of switching N.T.N.

REFERENCE BOOKS:

1. Statistical Quality Control / Shewart
2. Statistical Quality Control / E. L. Grant / McGraw – Hill.
3. Statistical Quality Control/ M. Mahajan / Dhanpat Rai & Co.
4. Statistical Quality Control / Douglas.C Montgomery / Wiley / 2012.
5. Statistical Quality Control / M. Jeya Chandra / CRC Press / 2010.
6. Statistical Quality Control / Richad S. Leavenworth / Tata McGraw Hill.

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M. TECH. I Year I Sem. (IEM)

OPTIMIZATION TECHNIQUES AND APPLICATIONS (Professional Elective - I)

UNIT - I

SINGLE VARIABLE NON-LINEAR UNCONSTRAINED OPTIMIZATION: One dimensional Optimization methods: Uni-modal function, elimination method, Fibonacci method, golden section method, interpolation methods- quadratic & cubic interpolation methods.

UNIT - II

MULTI VARIABLE NON-LINEAR UNCONSTRAINED OPTIMIZATION: Direct search method – Univariate Method – pattern search methods – Powell’s – Hook – Jeeves, Rosenbrock search methods – gradient methods, gradient of function, steepest decent method, Fletcher reeves method. Variable metric method.

UNIT - III

GEOMETRIC PROGRAMMING: Polynomials – arithmetic – geometric inequality – unconstrained G.P –constrained G.P

DYNAMIC PROGRAMMING: Multistage decision process, principles of optimality, examples, conversion of final problem to an initial value problem, application of dynamic programming, production inventory. Allocation, scheduling replacement.

UNIT IV

LINEAR PROGRAMMING: formulation – Sensitivity analysis. Change in the constraints, cost coefficients, coefficients of the constraints, addition and deletion of variable, constraints. Simulation – Introduction – Types – Steps – application – inventory – queuing – thermal system.

UNIT V

INTEGER PROGRAMMING: Introduction – formulation – Gomory cutting plane algorithm – Zero or one algorithm, branch and bound method.

STOCHASTIC PROGRAMMING: Basic concepts of probability theory, random variables – distributions – mean, variance, Correlation, covariance, joint probability distribution – stochastic linear, dynamic programming.

REFERENCE BOOKS:

1. Optimization theory & Applications/ S.S Rao/ New Age International
2. Introductory to operation research/Kasan & Kumar/Springer
3. Optimization Techniques theory and practice / M.C Joshi, K.M Moudgalya/ Narosa Publications.
4. Operation Research/H.A. Taha/TMH
5. Optimization in operations research/R.L Rardin
6. Optimization Techniques/Benugundu & Chandraputla/Person Asia.

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M. TECH. I Year I Sem. (IEM)

MATERIALS MANAGEMENT (Professional Elective - I)

UNIT- I

Introduction to Integrated Materials Management - need, scope, functions, objectives and Importance of Materials Management, Purchasing function - Objectives and scope of purchasing - purchase budget and materials budget - purchase order cycle - Source selection and development - Negotiations In purchasing - public buying - Just in Time concept.

UNIT – II

Imports - Import trade control, foreign trade (Development and Regulations) Act and Rules -Import Procedures - Importation cycle, Inventory Management- Functions - Associated Coats - Classification – ABC VED - FSN analysis - Basic BOQ model.

UNIT -III

Inventory control systems - Periodic Review - P system and Continuous review systems – Q systems - Lead-time analysis - Reorder point level Calculations, MRP - Introduction - Terminology - Types of demand input to the MRP -Working Principle of MRP - Output of MRP - advantages and disadvantages.

UNIT-IV

Stores Management- Stores function - types of stores - storage procedures- stock Verification and stock accounting - stores records - Disposal of Surplus, scrap, reclamation and salvage of materials.

UNIT-V

Material Handling: layout, selection of equipment, principles of materials handling - Packaging, types of material handling equipment.

REFERENCE BOOKS:

1. Purchasing and Materials Management/ P Gopalakrisnan / TMH
2. Industrial Engineering and Management/ Ravi Shankar / Galgotia Publications / 2003
3. Production & Operations Management/ Chase / McGraw Hill
4. Purchasing and Materials Management/ Lamar Lee & Donald W. Dobler / McGraw Hill
5. Materials Management / Chittle A. K / PHI Learning

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M. TECH. I Year I Sem. (IEM)

MANAGEMENT INFORMATION SYSTEMS (Professional Elective - II)

UNIT - I:

Introduction to information systems, Need for having corporate information systems, conceptual Foundations of MIS.

Management of information resources: process of decision – making and value of information.

UNIT - II:

Generations of Information Systems: information systems development life cycle, various phases and user involvement. On-line information systems: Distributed processing systems.

UNIT - III:

Integrated Information Systems in Organization: Use of database for integration, integration across functional areas. Latest trends in information technology including, Data communication for MIS Networking – current trends in computing – Client server, GUI front ends like power builder, visual C – RDBMS servers like Sybase, Oracle, Unify.

UNIT - IV:

Introduction to decision support systems and end user computing, Expert systems and Artificial intelligence.

UNIT - V:

Top Management and MIS: Corporate planning for MIS, the MIS strategic grid, growth of MIS in an organization, issues related to centralization/decentralization of MIS, impact of information technology on organization. Current trends in Hardware and Software with reference to Information Technology.

REFERENCE BOOKS:

1. Analysis and design of information systems / James A Senn / McGraw Hill.
2. Systems Analysis and Design / E. M. Award / Galgotia Publications.
3. Information systems Concepts for Management / Lucas, Henry C / 3rd ed. / New York McGraw Hill/ 1986.
4. Information systems for modern management / Murdick Robert G. Ross, Joel E Claggert, James C/ 3rd ed / New Delhi / PHI / 1988.
5. Introduction to system Analysis and design / Hawryz Kiewyez / 2nd ed / PHI.
6. Analysis and Design of information systems / V. Rajaraman / PHI.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. TECH. I Year I Sem. (IEM)

MANAGEMENT THEORY AND PRACTICE (Professional Elective - II)

UNIT - I:

Introduction to Management – definitions, types of managers, managerial roles and functions, science or Arts? – Administration Vs Management, External environment – Managing people and organization in the context of New Era – Managing for competitive advantage – the challenges of management – corporate social responsibility – Managerial Ethics.

UNIT - II:

Perspectives on Management: Scientific Management (Fredrick W.Taylor, Frank and Lillial Gilbreth) Human Relations (Elton Mayo, Douglas McGregor's Theory X and Theory Y, William quchi's Theory Z), the systems Approach, the contingency Approach, the Mckinsey 7-S Framework.
Planning: Nature of planning, steps in planning, types of planning, Levels of planning, The planning. Process – planning practice in USA, Japan and China.

UNIT - III

Decision Making: Problems and Opportunity finding, the nature of managerial Decision Making, the Rational Model of Decision Making, Challenges to the Rational Model, Improving the Effectiveness of Decision-Making Tools and Techniques, Roles of Board and Committees in Decision Making – Decision Making practices abroad.

Organizing: Nature of organizing, organization levels and span of management – Factors determining Span – Organizational design and structure – department, line and staff concepts, staffing - delegation, decentralization and recentralization of authority – responsive organizations – Global organizing.

UNIT - IV:

Leading: Leading Vs Managing – Trait approach and Contingency approaches to leadership – Dimensions of Leadership – Leadership Behavior and styles – developing leadership skills – transformational leaders – Leadership in Cross cultural environment – Evaluating Leader – Women and Corporate leadership – Motivational theories – Building Groups into teams inter group Behavior, conflictand negotiation – Global leading.

Communication: Importance of Communication, Interpersonal communication Barrier of Effective communication, communication in organization, Using communication skills to manage conflicts, Communicating for understanding and results, creating productive interpersonal relationships, Guidelines to improve written and oral communication – communication practices in India and Abroad.

UNIT-V:

Controlling: Basic control process – control as a feedback system – Feedback Forward control – Requirements for effective control – control techniques – overall controls and preventive controls – Global controlling.

REFERENCE BOOKS:

1. Management: Competing in the New Era,5/e / Bateman and Snell / TMH / 2003.
2. Modern Management 9/e / Samuel C. Certo / PHI / 2003.
3. Management A Global Perspective, 10/e / Heinz Wehrich, Harold Koontz / Tata Mc Graw Hill /2002.
4. Management / Stoner, Freeman and Gilbert Jr. / Pearson Education/ New Delhi, 2002.
5. Principles of Management / Koontz, Wehrich & Arysri / TMH / New Delhi, 2004.
6. Daft, Management, Thompson, New Delhi, 2003.

7. Case studied in Management / Prem Vrat, K.K. Ahuja, P.K. Jain / Vikas Publishing House Pvt. Ltd.,2002.
8. Leadership Theory & Practice / Peter G. Northouse / Response Books, New Delhi, 2003.

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M. TECH. I Year I Sem. (IEM)

RESEARCH METHODOLOGY AND IPR

Prerequisite: None

Course Objectives:

- To understand the research problem
- To know the literature studies, plagiarism and ethics
- To get the knowledge about technical writing
- To analyze the nature of intellectual property rights and new developments
- To know the patent rights

Course Outcomes: At the end of this course, students will be able to

- Understand research problem formulation.
- Analyze research related information
- Follow research ethics
- Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.
- Understanding that when IPR would take such important place in growth of individuals & nation, it is needless to emphasize the need of information about Intellectual Property Right to be promoted among students in general & engineering in particular.
- Understand that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to creation of new and better products, and in turn brings about, economic growth and social benefits.

UNIT -I:

Meaning of research problem, Sources of research problem, Criteria Characteristics of a good research problem, Errors in selecting a research problem, Scope and objectives of research problem. Approaches of investigation of solutions for research problem, data collection, analysis, interpretation, Necessary instrumentations

UNIT -II:

Effective literature studies approaches, analysis, Plagiarism, Research ethics

UNIT -III:

Effective technical writing, how to write report, Paper Developing a Research Proposal, Format of research proposal, a presentation and assessment by a review committee

UNIT -IV:

Nature of Intellectual Property: Patents, Designs, Trade and Copyright. Process of Patenting and Development: technological research, innovation, patenting, development. International Scenario: International cooperation on Intellectual Property. Procedure for grants of patents, Patenting under PCT.

UNIT -V:

Patent Rights: Scope of Patent Rights. Licensing and transfer of technology. Patent information and databases. Geographical Indications. New Developments in IPR: Administration of Patent System. New developments in IPR; IPR of Biological Systems, Computer Software etc. Traditional knowledge Case Studies, IPR and IITs.

TEXT BOOKS:

1. Stuart Melville and Wayne Goddard, "Research methodology: an introduction for science & engineering students"
2. Wayne Goddard and Stuart Melville, "Research Methodology: An Introduction"

REFERENCE BOOKS:

1. Ranjit Kumar, 2nd Edition, "Research Methodology: A Step by Step Guide for beginners"
2. Halbert, "Resisting Intellectual Property", Taylor & Francis Ltd ,2007.
3. Mayall, "Industrial Design", McGraw Hill, 1992.
4. Niebel, "Product Design", McGraw Hill, 1974.
5. Asimov, "Introduction to Design", Prentice Hall, 1962.
6. Robert P. Merges, Peter S. Menell, Mark A. Lemley, "Intellectual Property in New Technological Age", 2016.
7. T. Ramappa, "Intellectual Property Rights Under WTO", S. Chand, 2008

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M. TECH. I Year I Sem. (IEM)

INDUSTRIAL ENGINEERING PRACTICES LAB (Lab - I)

List of Experiments:

1. Design of initial layout by using ALDEP
2. Development of existing layout by using CRAFT & CORLEP
3. Conducting of Method study
4. Conducting of Time study
5. Conducting of Work Sampling
6. Study of assembly process
7. Micro motion studies
8. Ergonomics studies – Measurement of oxygen level & stress distribution in body
9. Design of Visual system
10. Design of Audio system
11. Office Seat & car seat design
12. Bear game for driving supply chain concepts
13. Computation of wage incentive schemes
14. SAP/ABAP fundamentals – Manufacturing system & Inventory system
15. ERP
16. Computation of sales forecasting techniques and validation
17. Computation of lot sizing methods used in MRP
18. Development of Bill of Materials for MRP (product structure – development of mother, children & Brother relationship development)
19. Using LINGDO package for solving of L.P. models.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. TECH. I Year I Sem. (IEM)

STATISTICAL QUALITY CONTROL SYSTEM LAB (Lab - II)

List of Experiments:

1. Construction of X and R charts
2. Construction of P Chart
3. Construction of C Chart
4. Construction of NC Chart
5. Construction of Single Sampling Plan, given $N = 1000$, $n = 10$ and $c = 2$.
6. Construction of Double Sampling plan, given $N = 1000$, $n_1 = 100$, $c_1 = 0$, $n_2 = 50$, $c_2 = 2$.
7. Construction of Single sampling plan and Double Sampling plan for specified design and find out customer risk and producer risk.
8. Drawing of Quality Control
9. Drawing of Cause and Effect (Fish Bone) diagram.
10. Drawing Pareto diagram.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech. (IEM)

ENGLISH FOR RESEARCH PAPER WRITING (Audit Course - I & II)

Prerequisite: None

Course objectives: Students will be able to:

- Understand that how to improve your writing skills and level of readability
- Learn about what to write in each section
- Understand the skills needed when writing a Title Ensure the good quality of paper at very first-time submission

UNIT-I:

Planning and Preparation, Word Order, Breaking up long sentences, Structuring Paragraphs and Sentences, Being Concise and Removing Redundancy, Avoiding Ambiguity and Vagueness

UNIT-II:

Clarifying Who Did What, Highlighting Your Findings, Hedging and Criticizing, Paraphrasing and Plagiarism, Sections of a Paper, Abstracts. Introduction

UNIT-III:

Review of the Literature, Methods, Results, Discussion, Conclusions, The Final Check.

UNIT-IV:

key skills are needed when writing a Title, key skills are needed when writing an Abstract, key skills are needed when writing an Introduction, skills needed when writing a Review of the Literature,

UNIT-V:

skills are needed when writing the Methods, skills needed when writing the Results, skills are needed when writing the Discussion, skills are needed when writing the Conclusions. useful phrases, how to ensure paper is as good as it could possibly be the first- time submission

TEXT BOOKS/ REFERENCES:

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

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech. (IEM)

DISASTER MANAGEMENT (Audit Course - I & II)

Prerequisite: None

Course Objectives: Students will be able to

- learn to demonstrate a critical understanding of key concepts in disaster risk reduction and humanitarian response.
- critically evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.
- develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations.
- critically understand the strengths and weaknesses of disaster management approaches,
- planning and programming in different countries, particularly their home country or the countries they work in

UNIT-I:

Introduction:

Disaster: Definition, Factors and Significance; Difference Between Hazard and Disaster; Natural and Manmade Disasters: Difference, Nature, Types and Magnitude.

Disaster Prone Areas in India:

Study of Seismic Zones; Areas Prone to Floods and Droughts, Landslides and Avalanches; Areas Prone to Cyclonic and Coastal Hazards with Special Reference to Tsunami; Post-Disaster Diseases and Epidemics

UNIT-II:

Repercussions of Disasters and Hazards:

Economic Damage, Loss of Human and Animal Life, Destruction of Ecosystem. Natural Disasters: Earthquakes, Volcanisms, Cyclones, Tsunamis, Floods, Droughts and Famines, Landslides and Avalanches, Man-made disaster: Nuclear Reactor Meltdown, Industrial Accidents, Oil Slicks and Spills, Outbreaks of Disease and Epidemics, War and Conflicts.

UNIT-III:

Disaster Preparedness and Management:

Preparedness: Monitoring of Phenomena Triggering A Disaster or Hazard; Evaluation of Risk: Application of Remote Sensing, Data from Meteorological and Other Agencies, Media Reports: Governmental and Community Preparedness.

UNIT-IV:

Risk Assessment Disaster Risk:

Concept and Elements, Disaster Risk Reduction, Global and National Disaster Risk Situation. Techniques of Risk Assessment, Global Co-Operation in Risk Assessment and Warning, People's Participation in Risk Assessment. Strategies for Survival.

UNIT-V:

Disaster Mitigation:

Meaning, Concept and Strategies of Disaster Mitigation, Emerging Trends In Mitigation. Structural Mitigation and Non-Structural Mitigation, Programs of Disaster Mitigation in India.

TEXT BOOKS/ REFERENCES:

1. R. Nishith, Singh AK, "Disaster Management in India: Perspectives, issues and strategies "New Royal book Company.
2. Sahni, Pardeep Et. Al. (Eds.)," Disaster Mitigation Experiences and Reflections", Prentice Hall of India, New Delhi.
3. Goel S. L., Disaster Administration and Management Text and Case Studies", Deep &Deep Publication Pvt. Ltd., New Delhi.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech. (IEM)

SANSKRIT FOR TECHNICAL KNOWLEDGE (Audit Course - I & II)

Prerequisite: None

Course Objectives:

- To get a working knowledge in illustrious Sanskrit, the scientific language in the world
- Learning of Sanskrit to improve brain functioning
- Learning of Sanskrit to develop the logic in mathematics, science & other subjects enhancing the memory power
- The engineering scholars equipped with Sanskrit will be able to explore the huge knowledge from ancient literature

Course Outcomes: Students will be able to

- Understanding basic Sanskrit language
- Ancient Sanskrit literature about science & technology can be understood
- Being a logical language will help to develop logic in students

UNIT-I:

Alphabets in Sanskrit,

UNIT-II:

Past/Present/Future Tense, Simple Sentences

UNIT-III:

Order, Introduction of roots,

UNIT-IV:

Technical information about Sanskrit Literature

UNIT-V:

Technical concepts of Engineering-Electrical, Mechanical, Architecture, Mathematics

TEXT BOOKS/ REFERENCES:

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.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech. (IEM)

VALUE EDUCATION (Audit Course - I & II)

Prerequisite: None

Course Objectives: Students will be able to

- Understand value of education and self- development
- Imbibe good values in students
- Let the should know about the importance of character

Course outcomes: Students will be able to

- Knowledge of self-development
- Learn the importance of Human values
- Developing the overall personality

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 Behavior Development - Soul and Scientific attitude. Positive Thinking. Integrity and discipline, Punctuality, Love and Kindness.

UNIT-IV:

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-V:

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

TEXT BOOKS/ REFERENCES:

1. Chakroborty, S.K. "Values and Ethics for organizations Theory and practice", Oxford University Press, New Delhi

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CONSTITUTION OF INDIA (Audit Course - I & II)

Prerequisite: None

Course Objectives: Students will be able to:

- Understand the premises informing the twin themes of liberty and freedom from a civil rights perspective.
- To address the growth of Indian opinion regarding modern Indian intellectuals' constitutional role and entitlement to civil and economic rights as well as the emergence of nationhood in the early years of Indian nationalism.
- To address the role of socialism in India after the commencement of the Bolshevik Revolution in 1917 and its impact on the initial drafting of the Indian Constitution.

Course Outcomes: Students will be able to:

- Discuss the growth of the demand for civil rights in India for the bulk of Indians before the arrival of Gandhi in Indian politics.
- Discuss the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India.
- 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.
- Discuss the passage of the Hindu Code Bill of 1956.

UNIT-I:

History of Making of the Indian Constitution: History Drafting Committee, (Composition & Working),
Philosophy of the Indian Constitution: Preamble, Salient Features.

UNIT-II:

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-III:

Organs of Governance: Parliament, Composition, Qualifications and Disqualifications, Powers and Functions, Executive, President, Governor, Council of Ministers, Judiciary, Appointment and Transfer of Judges, Qualification, Powers and Functions.

UNIT-IV:

Local Administration: 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.

UNIT-V:

Election Commission: Election Commission: Role and Functioning. Chief Election Commissioner and Election Commissioners. State Election Commission: Role and Functioning. Institute and Bodies for the welfare of SC/ST/OBC and women.

TEXT BOOKS/ REFERENCES:

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.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech. (IEM)

PEDAGOGY STUDIES (Audit Course - I & II)

Prerequisite: None

Course Objectives: Students will be able to:

- Review existing evidence on the review topic to inform programme design and policy making undertaken by the DfID, other agencies and researchers.
- Identify critical evidence gaps to guide the development.

Course Outcomes: Students will be able to understand:

- What pedagogical practices are being used by teachers in formal and informal classrooms in developing countries?
- What is the evidence on the effectiveness of these pedagogical practices, in what conditions, and with what population of learners?
- 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 indepth stage: quality assessment of included studies. How can teacher education (curriculum and practicum) and the scho 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.

TEXT BOOKS/ REFERENCES:

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. Akyeamong 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.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech. (IEM)

STRESS MANAGEMENT BY YOGA (Audit Course - I & II)

Prerequisite: None

Course Objectives:

- To achieve overall health of body and mind
- To overcome stress

Course Outcomes: Students will be able to:

- Develop healthy mind in a healthy body thus improving social health also
- Improve efficiency

UNIT-I:

Definitions of Eight parts of yog. (Ashtanga)

UNIT-II:

Yam and Niyam.

UNIT-III:

Do's and Don't's in life.

- i) Ahinsa, satya, astheya, bramhacharya and aparigraha
- ii) Shaucha, santosh, tapa, swadhyay, ishwarpranidhan

UNIT-IV:

Asan and Pranayam

UNIT-V:

- i) Various yog poses and their benefits for mind & body
- ii) Regularization of breathing techniques and its effects-Types of pranayam

TEXT BOOKS/ REFERENCES:

1. 'Yogic Asanas for Group Training-Part-I': Janardan Swami Yogabhyasi Mandal, Nagpur
2. "Rajayoga or conquering the Internal Nature" by Swami Vivekananda, Advaita Ashrama (Publication Department), Kolkata

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech. (IEM)

PERSONALITY DEVELOPMENT THROUGH LIFE ENLIGHTENMENT SKILLS
(Audit Course - I & II)

Prerequisite: None

Course Objectives:

- To learn to achieve the highest goal happily
- To become a person with stable mind, pleasing personality and determination
- To awaken wisdom in students

Course Outcomes: Students will be able to

- Study of Shrimad-Bhagwad-Geeta will help the student in developing his personality and achieve the highest goal in life
- The person who has studied Geeta will lead the nation and mankind to peace and prosperity
- Study of Neetishatakam will help in developing versatile personality of students

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

TEXT BOOKS/ REFERENCES:

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.