## I YEAR I – SEMESTER

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## I YEAR II – SEMESTER

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Audit Course 1 & 2:
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
Prerequisite: Control Systems

Course Objectives:
1. To explain the concepts of basic and modern control system for the real time analysis and design of control systems.
2. To explain the concepts of state variables analysis.
3. To study and analyze non-linear systems.
4. To analyze the concept of stability for nonlinear systems and their categorization.
5. To apply the comprehensive knowledge of optimal theory for Control Systems.

Course Outcomes: Upon completion of this course, students should be able to:
1. Various terms of basic and modern control system for the real time analysis and design of control systems.
2. To perform state variables analysis for any real time system.
3. Apply the concept of optimal control to any system.
4. Able to examine a system for its stability, controllability, and observability.
5. Implement basic principles and techniques in designing linear control systems.
6. Formulate and solve deterministic optimal control problems in terms of performance indices.
7. Apply knowledge of control theory for practical implementations in engineering and network analysis.

UNIT I:

UNIT II:
Controllability and Observability: General concept of controllability – Controllability tests, different state transformations such as diagonalization, Jordan canonical forms and Controllability canonical forms for Continuous-Time Invariant Systems – General concept of Observability – Observability tests for Continuous-Time Invariant Systems – Observability of different State transformation forms.

UNIT III:
State Feedback Controllers and Observers: State feedback controller design through Pole Assignment, using Ackkermans formula– State observers: Full order and Reduced order observers.

UNIT IV:
UNIT V:

**TEXT BOOKS:**
1. M. Gopal, Modern Control System Theory by – New Age International - 1984

**REFERENCES:**
ESTIMATION OF SIGNAL AND SYSTEMS (Professional Core – II)

Course Objectives:
1. To expose students to different system identification concepts.
2. To make the use of random-process models to represent non-deterministic signals and noise
3. To extract the time-domain and frequency-domain structure of the signals and noise from the models

Course Outcomes: Upon the completion of this course, the student will be able to
1. Apply the concepts of developing mathematical models for industrial systems,
2. Develop models from first principles and data driven models.

UNIT I:

UNIT II:
Concept of estimation, Recursive least squares (RLS), Consistency of estimation, Weighted LS. Convergence analysis LS. Parametric models - LS estimation, bias - Generalized Least Squares (GLS)

UNIT III:
Parameters estimation using Instrumental Variable (IV) method. Persistently exciting input signal - Likelihood functions and Maximum Likelihood Estimation (MLE) - Singular Value Decomposition (SVD).

UNIT IV:

UNIT V:
Extended Kalman Filters (EKF), State and Parameter estimations of nonlinear systems using EKF.

TEXT BOOKS:

REFERENCES:
INTELLIGENT CONTROL (Professional Elective-I)

Course Objectives:
1. Gaining an understanding of the functional operation of a variety of intelligent control techniques and their bio-foundations
2. the study of control-theoretic foundations
3. learning analytical approaches to study properties

Course Outcomes: Upon the completion of this course, the student will be able to
1. Develop Neural Networks, Fuzzy Logic, and Genetic algorithms.
2. Implement soft computing to solve real-world problems mainly pertaining to control system applications

Unit-I

Unit-II
Concept of Artificial Neural Networks and its basic mathematical model, McCulloch-Pitts neuron model, simple perceptron, Adaline and Madaline, Feedforward Multilayer Perceptron. Learning and Training the neural network. Data Processing: Scaling, Fourier transformation, principal-component analysis.

Unit-III

Unit-IV
Genetic Algorithm: Basic concept of Genetic algorithm and detail algorithmic steps, adjustment of free parameters. Solution of typical control problems using genetic algorithm. Concept on some other search techniques like tabu search and ant-colony search techniques for solving optimization problems.

Unit-V

TEXT BOOKS:
REFERENCES:
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech – I Year – I Sem. (Control Engineering. / Control System.)

SYSTEM DYNAMICS AND CONTROL (Professional Elective - I)

Course Objectives:
1. To learn about dynamic behavior of nonlinear, distributed and other complex systems,
2. To design the various controllers based on Dynamic Models.

Course Outcomes: Upon the completion of this course, the student will be able to
1. After the completion of this course the student will be able to get the Knowledge of phase plane, Laplace domain, and frequency domain analysis of nonlinear distributed and multivariable systems for dynamic behavior and stability.
2. Able to design various controllers.
3. Analyze systems for advanced control strategies.

UNIT- I:
Concepts of dynamic and static systems, Physical models and system construction, Electrical behavior components, Concept of energetic systems, Electromechanical systems, Hybrid and integrated system examples, Degrees of freedom analysis, Solution of Dynamic Models and the Use of Digital Simulators.

UNIT- II:

UNIT- III:

UNIT- IV:

UNIT- V:
Introduction to feed forward Control, Ratio Control, and Feed forward Controller Design based on Steady - State Models, Controller Design based on Dynamic Models, Tuning Feed forward Controllers, Realization of microcomputer control systems, interfacing with external equipment, computer data acquisition, and control, illustration of a computer implementation: preliminaries, microcomputer realization of a liquid level/flow control system.

TEXT BOOKS:
2. System dynamics and control, Eronini Umez-Eronini, Published by PWS pub. Co. 1999
REFERENCE BOOK:
Course Objectives:
1. To understand the concepts of process model and control
2. To enable to develop model and simulation of process control

Course Outcomes: After the completion of this course, the student will be able to
1. Understand the fundamentals and overview of process control, the static and Dynamic analysis of instrumentation system,
2. Apply the concept of Simulation and Modeling,
3. Able to develop Advanced Control Schemes for real time applications
4. Able to Design Multi-loop Controllers and Digital controllers.
5. Analyze Real Time Control strategies.

UNIT- I:
Introduction to Modelling: Introduction to modeling, a systematic approach to model building, classification of models. Conservation principles, thermodynamic principles of process systems.

UNIT-II:
Steady State and Dynamic Models of Process Systems-I: Development of steady state and dynamic lumped and distributed parameter models based on first principles. Analysis of ill-conditioned systems.

UNIT–III:

UNIT-IV:

UNIT-V:

TEXT BOOK:
Course Objectives:
1. To provide knowledge of Instrumentation systems and their applications.
2. To provide knowledge of advanced control theory and its applications to engineering problems.
3. To have a comprehensive idea about P, PI, PD, PID controllers.

Course Outcomes: Upon the completion of this course, the student will be able to
1. To understand and analyze instrumentation systems and their applications to various industries.
2. To apply advanced control theory to practical engineering problems.

Unit-I
Instrumentation: Introduction to mechanical systems and their structure and function, Performance Characteristics – Static and Dynamic, Fundamentals of signals acquisition, conditioning and processing.

Unit-II
Measurement of temperature, pressure, flow, position, velocity, acceleration, force, torque etc.

Unit-III
Control: Introduction to control systems, mathematical model of physical systems in transfer function and state space forms, response of dynamic systems, concept of pole & zero of a system.

Unit-IV

Unit-V
Control components: Actuator (ac & dc servomotors, valve), AC, DC tacho-generators, servo amplifier.

TEXT BOOKS:
2. Alok Barua, “Fundamentals of Industrial Instrumentation” Wiley India, 2011

REFERENCES:
ADVANCED MICROPROCESSORS (Professional Elective - II)

Prerequisite: Microprocessor and its applications

Course Objectives:
1. To understand architectural features of 8086 microprocessors
2. To understand various peripheral devices and different components interfacing with it along with 8051 Microcontroller
3. To understand architectural features of advanced processors and microcontrollers
4. To learns necessary programming skills to develop applications.

Course Outcomes: After completion of this course the student
1. Develops knowledge and skills for programming of 8086 microprocessors and interfacing techniques for various peripheral devices.
2. Attains programming skills of 8051 microcontrollers and its applications through various case studies.

UNIT-I:
Intel 8086/8088: Architecture, its register organization, pin diagram, minimum and maximum mode system and timings, machine language instruction formats, addressing modes, instruction set, assembler directives and operators.

UNIT-II:
ALP AND Special Architecture Features: ALP, Programming with an assembler, stack structure, interrupts, and service subroutines and interrupt programming and Macros.

UNIT-III:

UNIT-IV:
Advanced Processors: Architectural features of 80836, 486 and Pentium processors their memory management, introduction to Pentium pro processors their features, RISC Vs CISC processors, RISC properties, evaluation, architectural features of DEC alpha AXP, power PC family, and sun SPARC family systems.

UNIT-V:
Microcontroller: Microcontrollers – 8051 architectures, hardware, interrupts, addressing modes, instruction set – programming-applications.

TEXT BOOKS:
1. BARRY B. Brey, Intel microprocessors, architecture, programming and interfacing 8086/8088, 80186,80836 and 80846-.PHI-5th edition-2001
3. A. K. Ray and K M Bhurchandani, Advanced microprocessors and peripherals, TMH
4. Nilesh B. Bahadure, Microprocessors, PHI Learning PVT. Ltd.

REFERENCES:
5. N. Mathivanan, Microprocessors, PC Hardware and Interfacing, PHI Learning PVT. Ltd.
DSP PROCESSOR ARCHITECTURE AND APPLICATIONS (Professional Elective - II)

Prerequisite: Microprocessor and its applications

Course Objectives:
1. To introduce various techniques of digital signal processing that are fundamental to various industrial applications.
2. To learn the basis of DSP systems, its theory and practical implementation of different kind of algorithms
3. To know third generation DSP architectures and interfacing of memory and I/O peripherals to the DSP processors.

Course Outcomes: After completion of this course the student
1. Gets an in-depth knowledge of DSP processors their architectures.
2. Knows programming language techniques, integration of DSP programmable devices with memories and I/O peripherals.

UNIT-I:
Introduction to Digital Signal Processing: Introduction, A Digital signal-processing system, The sampling process, Discrete time sequences, Discrete Fourier Transform (DFT) and Fast Fourier Transform (FFT), Linear time-invariant systems, Digital filters, Decimation and interpolation, Analysis and Design tool for DSP Systems MATLAB, DSP using ATLAB.

Computational Accuracy in DSP Implementations: Number formats for signals and coefficients in DSP systems, Dynamic Range and Precision, Sources of error in DSP implementations, A/D Conversion errors, DSP Computational errors, D/A Conversion Errors, Compensating filter.

UNIT-II:
Architectures for Programmable DSP Devices: Basic Architectural features, DSP computational Building Blocks, Bus Architecture and Memory, Data Addressing Capabilities, Address Generation Unit, Programmability and Program Execution, Speed issues Features for External interfacing.
EXECUTION CONTROL AND PIPELINING: Hardware looping, Interrupts, Stacks, Relative Branch Support, Pipelining and performance, Pipeline Depth, Interlocking, Branching effects, interrupt effects, pipeline Programming models.

UNIT-III:
Programmable Digital Signal Processors: Commercial Digital signal-processing Devices, Data Addressing modes of TMS320C54XX DSPs, Data Addressing modes of TMS320C54XX Processors, Memory space of TMS320C54XX Processors, Program Control, TMS320C54XX instructions and Programming, On-Chip peripherals, Interrupts of TMS320C54XX processors, Pipeline Operation of TMS320C54XX Processors.

UNIT-IV:
UNIT-V:
Interfacing Memory and I/O Peripherals to Programmable DSP Devices: Memory space organization, External bus interfacing signals, Memory interface, parallel I/O interface, Programmed I/O, Direct Memory access (DMA). A Multichannel buffered serial port (McBSP), McBSP Programming, a CODEC interface circuit, CODEC programming, A CODEC-DSP interface example.

TEXT BOOKS:
2. Lourens R Rebinar and Bernold, Theory, and applications of digital signal processing.
3. Auntoniam, Digital filter analysis and design - TMH.

REFERENCE BOOKS:
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 emphasis 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:

UNIT-V:
TEXT BOOKS:
2. Wayne Goddard and Stuart Melville, “Research Methodology: An Introduction”

REFERENCES:
Course Objectives:
1. To acquire knowledge on control aspects of an electrical system.
2. To become familiar with the use of simulation tools for the purpose of modeling, analysis and design of systems.

Course Outcomes: Student will be able to
1. Represent various discrete time systems.
2. Analyze the given system by Transfer function and state space approach using suitable software.
3. Design various controllers and compensators to improve system performance and test them in the laboratory as well as using suitable software.
4. To model a given system and its stability Analysis.

List of Experiments:
1. Development of schematic Model of a dynamical system (Motor/Generator/ Power System etc)
2. Obtain the dynamic response of a continuous system and comment on the effect of parameter variations.
3. Time-Domain Analysis, Error–Analysis, Stability Analysis in Continuous and Discrete domains.
4. Stability Analysis (Bode, Root Locus, Nyquist) Of Linear Time Invariant System in discrete domain.
8. Design of State Feedback Controllers and Observers.
9. Conversion of State Space Model into Classical Transfer Function and Vice Versa.
10. Simulation Of A Closed Loop System(Plant And Compensator) for discrete systems.
11. Obtain the phase portraits for non linear system represented by $\dot{x} = f(x)$ and comment on the aspects of stability for various initial conditions on phase plane.
12. Obtain the describing function for a given nonlinearity over the different sets of range amplitudes for a fixed frequency.
13. Obtain the limit cycle time response and phase plot for stable and unstable vanderpol’s equation.
15. For a given discrete plant representation in state space. Design a Kalman filter and time varying (extended) kalman filter to estimate the output $y$ based on the noisy measurements.
16. Based on the distribution of means from repeated random samples of an exponential distribution, with specified Population parameter, Sample size, number of samples.
17. Visualize the distribution of sample means together with the fitted normal distribution.

Note: The above problems are to be illustrated by considering a suitable system, and by using suitable software or hardware.

Note: Minimum of Ten experiments out of which six experiments related to core courses are to be conducted.
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech – I Year – I Sem. (Control Engg. / Control Sys.)

MODELING AND SIMULATION LAB – I (Lab – II)

WRITING PROGRAMS AND DEMONSTRATION
1. Declination of earth, hour angle, day length, local apparent time
3. Power generation from a wind turbine, Variation of wind velocity and power with altitude
4. Solution of ordinary differential equations-4th order R K Method
5. Solution of one-dimensional steady state heat conduction equation
6. Solution of two-dimensional steady state PDE
7. Solution of one-dimensional transient PDE

FINITE ELEMENT ANALYSIS
8. Two-dimensional heat conduction
9. One dimensional transient heat conduction
10. Transient analysis of a casting process

CFD ANALYSIS
11. Flow through a pipe bend
12. Flow through a nozzle
Prerequisite: None

Course Objectives: Students will be able to:
- Understand 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:

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:
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:

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:

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:
2. Sahni, Pardeep Et. Al. (Eds.),” Disaster Mitigation Experiences and Reflections”, Prentice Hall of India, New Delhi.
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
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:

UNIT-II:

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

UNIT-IV:

UNIT-V:

TEXT BOOKS/ REFERENCES:
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:

UNIT-II:

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:

UNIT-V:
TEXT BOOKS/ REFERENCES:
1. The Constitution of India, 1950 (Bare Act), Government Publication.
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:

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 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.

TEXT BOOKS/ REFERENCES:
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 Tarining-Part-I": Janardan Swami Yogabhyasi Mandal, Nagpur
2. "Rajayoga or conquering the Internal Nature" by Swami Vivekananda, Advaita Ashrama
   (Publication Department), Kolkata
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 Neetisatakam 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 (don’ts)
- 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: Chapter 2-Verses 56, 62, 68
- Chapter 12 -Verses 13, 14, 15, 16,17, 18
- Personality of Role model. Shrimad Bhagwad Geeta:

UNIT-V:
- Chapter 2-Verses 17, Chapter 3-Verses 36,37,42,
- Chapter 4-Verses 18, 38,39
- Chapter 18 – 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, Rashtra Sanskrit Sansthanam, New Delhi.