Semester VIII (Fourth year]

CE(HS)801	**Professional Practice, Law & Ethics**	2L + 0T	2 Credits
Module 1 A	Professional Practice – Respective roles of various stakeholders: Government(constituting regulatory bodies and standardization organizations, prescribing norms to ensure safetyof the citizens); Standardization Bodies (ex. BIS, IRC)(formulating standards of practice);professional bodies (ex. Institution of Engineers(India), Indian Roads Congress, IIA/ COA, ECI,Local Bodies/ Planning Authorities) (certifying professionals and offering platforms for interaction);Clients/ owners (role governed by contracts); Developers (role governed by regulations such asRERA); Consultants (role governed by bodies such as CEAI); Contractors (role governed bycontracts and regulatory Acts and Standards); Manufacturers/ Vendors/ Service agencies (rolegoverned by contracts and regulatory Acts and Standards)		2 L
Module 1 B	Professional Ethics – Definition of Ethics, Professional Ethics, Business Ethics,Corporate Ethics, Engineering Ethics, Personal Ethics; Code of Ethics as defined in the website ofInstitution of Engineers (India); Profession, Professionalism, Professional Responsibility,Professional Ethics; Conflict of Interest, Gift Vs Bribery, Environmental breaches, Negligence,Deficiencies in state-of-the-art; Vigil Mechanism, Whistleblowing, protected disclosures.		2 L
Module 2	General Principles of Contracts Management: Indian Contract Act, 1972 andamendments covering General principles of contracting; Contract Formation & Law; Privacy ofcontract; Various types of contract and their features; Valid & Voidable Contracts; Prime and subcontracts;Joint Ventures & Consortium; Complex contract terminology; Tenders, Request ForProposals, Bids & Proposals; Bid Evaluation; Contract Conditions & Specifications; Critical /"RedFlag" conditions; Contract award & Notice To Proceed; Variations & Changes in Contracts;Differing site conditions; Cost escalation; Delays, Suspensions & Terminations; Time extensions &Force Majeure; Delay Analysis; Liquidated damages & Penalties; Insurance & Taxation;Performance and Excusable Non-performance; Contract documentation; Contract Notices; Wrongpractices in contracting (Bid shopping, Bid fixing, Cartels); Reverse auction; Case Studies: Build-Own-Operate & variations; Public- Private Partnerships; International Commercial Terms;		18 L
Module 3	Arbitration, Conciliation and ADR (Alternative Dispute Resolution) system: Arbitration – meaning, scope and types – distinction between laws of 1940 and 1996; UNCITRAL model law –Arbitration and expert determination; Extent of judicial intervention; International commercialarbitration; Arbitration agreements – essential and kinds, validity, reference and interim measures bycourt; Arbitration tribunal – appointment, challenge, jurisdiction of arbitral tribunal, powers, groundsof challenge, procedure and court assistance; Award including Form and content, Grounds for settingaside an award, Enforcement, Appeal and Revision; Enforcement of foreign awards – New York andGeneva Convention Awards; Distinction between conciliation, negotiation, mediation andarbitration, confidentiality, resort to judicial proceedings, costs; Dispute Resolution Boards; LokAdalats.		5 L
Module 4	Engagement of Labour and Labour & other construction-related Laws: Role of Labourin Civil Engineering; Methods of engaging labour- on rolls, labour sub-contract, piece rate work;Industrial Disputes Act, 1947; Collective bargaining; Industrial Employment (Standing Orders) Act,1946; Workmen's Compensation Act, 1923; Building & Other Construction Workers (regulation ofemployment and conditions of service) Act (1996) and Rules (1998); RERA Act 2017, NBC 2017		2 L
Module 5	Law relating to Intellectual property: Introduction – meaning of intellectual property, main forms of IP, Copyright, Trademarks, Patents and Designs, Secrets; Law relating to Copyright in India including Historical evolution of Copy Rights Act, 1957, Meaning of copyright – computer programs, Ownership of copyrights and assignment, Criteria of infringement, Piracy in Internet – Remedies and procedures in India; Law relating to Patents under Patents Act, 1970 including Concept and historical perspective of patents law in India, Patentable inventions with special reference to biotechnology products, Patent protection for computer programs, Process of obtaining patent – application, examination, opposition and sealing of patents, Patent cooperation treaty and grounds for opposition, Rights and obligations of patentee, Duration of patents – law and policy considerations, Infringement and related remedies;		1 L
	1. B.S. Patil, Legal Aspects of Building and Engineering Contracts, 1974. 2. The National Building Code, BIS, 2017 3. RERA Act, 2017 4. Meena Rao (2006), Fundamental concepts in Law of Contract, 3rd Edn. Professional Offset 5. NeelimaChandiramani (2000), The Law of Contract: An Outline, 2nd Edn. Avinash PublicationsMumbai 6. Avtarsingh (2002), Law of Contract, Eastern Book Co. 7. Dutt (1994), Indian Contract Act, Eastern Law House 8. Anson W.R. (1979), Law of Contract, Oxford University Press 9. Kwatra G.K. (2005), The Arbitration & Conciliation of Law in India with case law on UNCITRALModel Law on Arbitration, Indian Council of Arbitration 10. Wadhera (2004), Intellectual Property Rights, Universal Law Publishing Co. 11. T. Ramappa (2010), Intellectual Property Rights Law in India, Asia Law House 12. Bare text (2005), Right to Information Act		

	13. O.P. Malhotra, Law of Industrial Disputes, N.M. Tripathi Publishers 14. K.M. Desai(1946), The Industrial Employment (Standing Orders) Act 15. Rustamji R.F., Introduction to the Law of Industrial Disputes, Asia Publishing House 16. Vee, Charles &Skitmore, Martin (2003) Professional Ethics in the Construction Industry, Engineering Construction and Architectural management, Vol.10, Iss2,pp 117-127, MCB UP Ltd 17. American Society of Civil Engineers (2011) ASCE Code of Ethics – Principles Study and Application 18. Ethics in Engineering- M.W.Martin&R.Schinzinger, McGraw-Hill 19. Engineering Ethics, National Institute for Engineering Ethics, USA 20. www.ieindia.org 21. Engineering ethics: concepts and cases – C. E. Harris, M.S. Pritchard, M.J.Rabins 22. CONSTRUCTION CONTRACTS, http://www.jnormanstark.com/contract.htm 23. Internet and Business Handbook, Chap 4, CONTRACTS LAW, http://www.laderapress.com/laderapress/contractslaw1.html 24. Contract & Agreements http://www.tco.ac.ir/law/English/agreements/General/Contract%20Law/C.htm 25. Contracts, http://206.127.69.152/jgretch/crj/211/ch7.ppt 26. Business & Personal Law. Chapter 7. "How Contracts Arise", http://yucaipahigh.com/schristensen/lawweb/lawch7.ppt 27. Types of Contracts, http://cmsu2.cmsu.edu/public/classes/rahm/meiners.con.ppt 28. IV. TYPES OF CONTRACTS AND IMPORTANT PROVISIONS, http://www.worldbank.org/html/opr/consult/guidetxt/types.html 29. Contract Types/Pricing Arrangements Guideline- 1.4.G (11/04/02), http://www.sandia.gov/policy/14g.pdf	

CE(PE)801A	**Structural Dynamics**	2L + 1T	3 Credits
	Analysis of the dynamic response of structures and structural components to transient loads and foundation excitation; single-degree-of-freedom and multi-degree-of-freedom systems; response spectrum concepts; simple inelastic structural systems; and introduction to systems with distributed mass and flexibility.		42L

CE(PE)801B	**Contracts Management**	2L + 1T	3 Credits
	Contract Management – Introduction, Importance of Contracts,Overview of Contract Management, Overview of Activities in Contract Management; Planning andPeople-Resource Management; Types of Contracts, Parties to a Contract; Contract Formation, Formulation of Contract, Contract Start-Up, Managing Relationships; Common contract clauses(Notice to proceed, rights and duties of various parties, notices to be given, Contract Duration andPrice. Performance parameters; Delays, penalties and liquidated damages; Force Majeure,Suspension and Termination. Changes & variations, Notices under contracts; Conventional andAlternative Dispute Resolution methods. Various Acts governing Contracts; Contract Administrationand Payments- Contract Administration, Payments; Contract Management in Various Situations Contract Management in NCB Works, Contract Management in ICB Works Contracts, Contract ofSupply of Goods- Design, Supply and Installation Contracts, Contract Management in Consultancy,;Managing Risks and Change-Managing Risks, Managing Change; Contract Closure and Review-Ending a Contract, Post-Implementation Review; Legal Aspects in Contract Management- ContractManagement Legal View, Dispute Resolution, Integrity in Contract Management; ManagingPerformance-Introduction, Monitoring and Measurement		40L

CE(PE)801C	**Traffic Engineering and Management**	2L + 1T	3 Credits
	Traffic Forecast: General travel forecasting principles,different methods of traffic forecast - Mechanical and analytical methods, Demand relationships,methods for future projection; Design Hourly Volume For Varying Demand Conditions: Concept ofDesign vehicle units and determination of PCU under mixed traffic conditions, Price-volumerelationships, demand functions. Determination of design hourly volume; critical hourconcept;Highway Capacity: Factors affecting capacity, level of service; Capacity studies – Capacityof different highway facilities including unsignalised and signalised intersections. Problems in MixedTraffic flow; Case studies; Accident Analysis: Analysis of individual accidents and statistical data;Methods of representing accident rate; Factors in traffic accidents; influence of roadway and trafficconditions on traffic safety; accident coefficients; Driver strains due to roadway and trafficconditions; Traffic Flow Theory: Fundamental flow relationship and their applications, Traffic flowtheories and applications; Shock waves; Queuing theory and applications; Probabilistic Aspects OfTraffic Flow: Vehicle arrivals, distribution models, gaps and headway distribution models; gapacceptance merging parameters, delay models,		42L

	applications; Simulation: Fundamental principle,application of simulation techniques in traffic engineering - formulation of simulation models, Casestudies. Formulation of system models.	

ROCK MECHANICS
Code – CE(PE)801D
Contact – 2L+1T
Credits-3

Module	Details of Course Content	Hours	Total
1	Composition of rocks, Engineering classification and Limitation of Geologic classification of rocks.	6	32
2	Rock coming, various methods of obtaining rock cores, Engineering Properties of rock, stress -strain relations, elastic theory application to design in rock.	6	
3	Strength and failure of rocks, Uniaxial and triaxial strength of rocks, failure theories of rocks and propagation of cracks, Griffith Chack theory -Water in rock, Structural feature of mass rocks and their effects on engineering properties.	8	
4	Measurement of stresses -rock mass, various types of measuring devices, evaluation of properties of rocks in the field.	6	
5	Strain and displacement of the rock mass, rock reinforcement and support, subsidence.	6	

Text Books:

1. Engineering Rock Mechanics: An Introduction to the Principles by J. A. Hudson and J. P. Harrison
2. Rock Mechanics: For Underground Mining by Barry H.G.
3. Empirical Rock Failure Criteria, P.R. Sheorey, Balkema, Rotterdam, 1997
4. Rock Mechanics in Engineering Practice, K.G.Stagg and O.C.Zienkiewicz, John Wiley and Sons, London.
5. Hand Book on Mechanical Properties of Rocks. V.S. Vutukuri and R D Lama,
6. Rock Mechanics for Engineers,, B.P Verma,
7. Engineering Behavior of Rocks, W. Farmer, Chapman and Hall Ltd.
8. Brady Introduction to Rock Mechanics, R. E. Goodman,
9. Fundamentals of Rock Mechanics, 4th Edition, John Conrad Jaeger, Neville G. W. Cook, Robert Zimmerman

CE(PE)801E	**Physico-Chemical Process for Water & Wastewater Treatment**	2L + 1T	3 Credits
	The Objective of this course is to provide an in depth understanding of physical and physico-chemical processes used for water and wastewater treatment systems and to provide capability to design such systems. Water purification in natural systems, physical processes, chemical processes and biological processes. Primary, secondary and tertiary treatment. Unit operations, unit processes. Aeration and gas transfer. Sedimentation, different types of settling, sedimentation tank design. Coagulation and flocculation, coagulation processes, stability of colloids, destabilization of colloids, destabilization in water and wastewater treatment, transport of colloidal particles, design aspects. Filtration: filtration processes, Hydraulics of flow through porous media, Rate control patterns and methods, Filter effluent quality parameters, mathematical model for deep granular filters, slow sand filtration, rapid sand filtration, pre-coat filtration, design aspects. Disinfection: Types of disinfectants, Kinetics of disinfection, chlorination and its theory, Design of Chlorinators. Precipitation: Hardness removal, Iron, Mn, and heavy metal removal; Adsorption, adsorption equilibria and adsorption isotherm, rates of adsorption, Sorption kinetics in batch reactors, continuous reactors, factors affecting adsorption. Ion Exchange-exchange processes, materials and reactions, methods of operation, Application, design aspects. Membrane Processes, Reverse		

	osmosis, Ultrafiltration, Electrodyalisis	

CE(PE)802A	**Reliability Analysis of Structures**	2L + 0T	2 Credits
	Role of reliability in civil engineering; Historical background,random events, random variables, model uncertainty; Common probabilistic models; Importantstatistical parameters and their estimations, normal, lognormal, extreme value distribution;Fundamental concept of structural reliability; Derivation of stress-strength interface equation,graphical representation, Cornel reliability index, reliability and failure probability computations forsimple linear functions; Second moment concepts, First order second moment theory, Hasofer-Lindtransformation, Linear and non-linear limit state functions, Solution schemes, geometricinterpretation of solution scheme, Rackwitz-Fiessler transformation, First order reliability method;Stochastic models for material strength and loads, Reliability assessment of structural componentand simple civil engineering structures.		32L

CE(PE)802B	**Railway Engineering**	2L + 0T	2 Credits
	Railway track gauge, alignment of railway lines,engineering surveys andconstruction of new lines, tracksand track stresses; rails, sleepers; ballast; subgrade and formation, rack fittings and fastenings, creep of rails, geometric design of track, curves and super-elevation,points and crossings, track junctions and simple track layouts; rail joints and welding of rails; track maintenance, track drainage; modern methods of track maintenance, rehabilitation and renewal oftrack; tractive resistance and power, railway stations and yards; railway tunneling; signaling and interlocking; maintenance of railways and high speed trains.		32L

CE(PE)802C	**Environmental Laws and Policy**	2L + 0T	2 Credits
	Overview of environment, nature and eco system, Concept oflaws and policies, Origin of environmental law, Introduction to environmental laws and policies,Environment and Governance, sustainable development and environment, understanding climatechange, carbon crediting, carbon foot print etc., Introduction to trade and environment. Internationalenvironmental laws, Right to Environment as Human Right, International Humanitarian Law andEnvironment, environment and conflicts management, Famous international protocols like Kyoto.		30L

ENVIRONMENTAL GEOTECHNOLOGY.
Code – CE(PE)802D
Contact – 2L
Credits-2

Module	Details of Course Content	Hours	Total
1	Soil and ground water pollutants -their sources, nature, composition and polluting effects.	6	32
2	The physico-chemical aspects of soils contaminated by various pollutants.	4	
3	Effects of environment and wastes on the properties of soils.	4	
4	Solid and liquid wastes disposal method and management, land treatment systems.	6	
5	Man made changes in geotechnical environment -mining, embankments, pumping, reservoir, landfills and reclamation effects and control.	6	
6	Control of contamination with use of clay barriers, geosynthetics, cut-off walls, leachate collection systems. Stabilization -different materials and techniques in control of ground pollution and treatment.	6	

CE(OE)801A	**Human Resource Development and Organizational Behaviour**	3L + 0T	3 Credits
Module 1	Introduction to HRM and Organizational Behaviour (OB): Human resource management (HRM) at work: Definition – HR Challenge –Management process, Changing environment of Human Resource Management: Work force diversity, Technological trends – Globalization, Strategic planning and HR today: Nature of strategic planning – Building competitive advantage – Human resource as a source of competitive advantage, Definition of organizational behavior (OB) and historical development: Definition –Goals of OB – Challenges and opportunities, OB in a global context: The global economy – Facing the international challenge – Behaviour across cultures		6L
Module 2	Understanding and managing individual behavior: Foundation of individual behaviour: Biographical characteristics – Ability – Learning – Implication for performance and satisfaction, Values and attitudes: Importance of values – Types of values – Types of attitude –Attitude and consistency, Perception: Defining perception and its importance – Factors influencing perception, Personality & emotions: Personality determinants – Personality traits – Major personality attributes influencing OB, Emotional intelligence: Defining emotions – The six universal emotions – Emotions and national culture – OB applications, Individual decision making: The rational decision-making process – Improving creativity in decision making – Identifying problems – Ethics in decision making		6L
Module 3	Understanding and managing group behaviour: Defining & classifying groups: Formal group Informal group Command group Task group – Interest group, Basic group concepts: Roles – Norms – Cohesiveness – Size – Composition – Status, Group decision making: Individual vs. group – Group decision making techniques, Understanding work teams: Team versus groups – Types of teams – Cross functional teams – Creating effective teams, Conflict and inter-group behaviour: Definition of conflict – Transitions in conflict thought – The conflict process – Intergroup relations		4L
Module 4	Recruitment and placement: Nature of job analysis: Definition – Uses of job analysis information, Steps in job analysis, Methods of collecting job analysis information: Interview – Questionnaires –Observation – Quantitative job analysis techniques, Job description and specification: Job identification – Responsibilities and duties – Specification for trained versus untrained personnel, Recruitment and selection process: Introduction – Advertising – Employment agencies – Selection process – Basic testing concepts, Human resource planning and forecasting: Employment planning and forecasting – Factors in forecasting personnel needs – Forecasting supply of inside candidates – Recruiting job candidates		4L
Module 5	Training and development:Building employee commitment – Orientation and socialization, Training needs analysis: Task analysis – Performance analysis – Setting training objectives, Training techniques: On-the-job training – Job instruction training – Audiovisual techniques – Programmed learning, Information technology and HR – Training via the internet, Nature and purpose of management development: Definition – Succession planning, Job rotation and management: Coaching – Action learning – Advantage, Performance management & appraisal: Appraisal process – Appraisal methods – Problems and solutions – Role of appraisals in managing performance, Using HR to build a responsive learning organization: HR and systematic problem solving – Learning from experience – Transferring knowledge		6L
Module 6	**Compensation and retention:** Basic aspects of compensation: Compensation at work – Legal considerations in Compensation, Pricing managerial and professional jobs: Basic compensation elements – Compensating professional employees, Current trends and issues in compensation: Skill-based pay – Broad banding, Comparable worth – Pay secrecy – Inflation and salary compression, Financial incentives: Use of financial incentives – Types of incentive plans, Retirement benefits: Social security – Pension plans – Other retirement benefits, Employee service benefits: Job-related service benefits – Executive perquisites – Law for working women, Retention of employees: Definition – Strategy – Benefits		4L
Module 7	Labour relations & legislation:The labour movement, unions and the law: Introduction – Why do workers organize – Background – Labour law today, Guaranteed fair treatment and employee discipline: GFTP at work – Fairness in disciplining – Discipline guidelines – Discipline without punishment, Managing dismissals: Definition – Grounds for dismissal – Dismissal procedure, Salient provisions under Indian Factories Act: Labour issues – Factory Act 1948, Industrial Disputes Act: Objective – Applicability, Employees State Insurance Act: Definition – Commencement		4L

	and application, Workmen's Compensation Act: Definition – Employer's liability for compensation, Payment of Bonus Act: Applicability – Eligibility – Benefits	
Module 8	Global HRM & Organizational development (OD): Nature of global HRM: Strategic overview – HR and the international business – HR challenges of international business, Multinational and global corporations: Market imperfections – International power –Criticisms of multinationals, The expatriate manager in multinational corporations: Introduction – Selecting the expatriate manager – Training, OD values and outcomes: Respect for people – Trust and support – Power equalization – Confrontation, Implementation issues in OD and difference in organizational cultures: Improved organizational effectiveness – Greater commitment and involvement – Increased personal and organizational awareness	4L
Reference	1. Organizational Behavior-Stephen P. Robbins, Prentice-Hall of India, New Delhi 2. Human Resource Management- Gary Dessler, Pearson Education 3. Human Resource Management- Cynthia D. Fisher, Schoenfeldt& Shaw, Biztantra, New Delhi	

CE(OE)801B	**History of Science & Engineering**	3L + 0T	3 Credits
Module 1	**Science and Technology- The Beginning:** Development in different branches of Science in Ancient India: Astronomy, Mathematics, Engineering and Medicine; Developments in metallurgy: Use of Copper, Bronze and Iron in Ancient India; Development of Geography: Geography in Ancient Indian Literature		8L
Module 2	Developments in Science and Technology in Medieval India:Scientific and Technological Developments in Medieval India; Influence of the Islamic world and Europe; The role of maktabs, madrasas and karkhanas set up; Developments in the fields of Mathematics, Chemistry, Astronomy and Medicine; Innovations in the field of agriculture - new crops introduced new techniques of irrigation etc		8L
Module 3	Developments in Science and Technology in Colonial and Independent India:Early European Scientists in Colonial India- Surveyors, Botanists, Doctors, under the Company's Service; Indian Response to new Scientific Knowledge, Science and Technology in Modern India; Development of research organizations like CSIR and DRDO; Establishment of Atomic Energy Commission; Launching of the space satellites and Development of ISRO		12L
Module 4	Prominent scientist of India since beginning and their achievement:Mathematics and Astronomy: Baudhayan, Aryabhtatta, Brahmgupta, Bhaskaracharya, Varahamihira, Nagarjuna; Medical Science of Ancient India (Ayurveda & Yoga): Susruta, Charak, Yoga &Patanjali; Scientists of Modern India: Srinivas Ramanujan, C.V. Raman, Jagdish Chandra Bose, Acharya Prafulla Chandra Roy, SatyendraNath Bose, MeghnadSaha, HomiJehangirBhabha and Dr.Vikram Sarabhai		14L
Reference	1. Binod Bihari Satpathy. "History of Science and Technology in India". Development. Volume 29. 2. G. Kuppuram. 1990. "History of Science and Technology in India". South Asia Books. 3. M. Bhardwaj. 2010. "History of Science and Technology in Ancient India". Bookwin		

CE(OE)802A	**Economic Policies in India**	2L + 0T	2 Credits
Module 1	**Framework of Indian Economy:** National Income: Trends and Structure of National Income; Demographic Features and Indicators of Economic Growth and Development Rural-Urban Migration and issues related to Urbanization; Poverty debate and Inequality, Nature, Policy and Implications; Unemployment-Nature, Central and State Government's policies, policy implications, Employment trends in Organized and Unorganized Sector		6L
Module 2	Development Strategies in India:Agricultural- Pricing, Marketing and Financing of Primary Sector; Economic Reforms- Rationale of Economic Reforms, Liberalization, Privatization and Globalization of the Economy; Changing structure of India's Foreign Trade; Role of Public Sector- Redefining the role of Public Sector, Government Policy towards Public Sector, problems associated with Privatization, issues regarding Deregulation-Disinvestment and future of Economic Reforms		8L
Module 3	The Economic Policy and Infrastructure Development: Energy and Transport; Social Infrastructure- Education, Health and Gender related issues, Social Inclusion; Issues and policies in Financing Infrastructure Development; Indian Financial System- issues of Financial Inclusion, Financial Sector Reforms-review of Monetary Policy of R.B.I. Capital Market in India.		12L
Module 4	The Economic Policy and Industrial Sector:Industrial Sector in Pre-reforms period, Growth and Pattern of Industrialization; Industrial Sector in Post-reform period- growth and pattern of Micro, Small, Medium Enterprises s, problems of India's Industrial Exports; Labour Market-issues in Labour Market Reforms and approaches to Employment Generation		6L

Reference	1. Brahmananda, P.R. and V.A. Panchmukhi.[2001], Ed. 'Development Experience in Indian Economy, Inter-state Perspective,' Bookwell, New Delhi. 2. Gupta,S.P.[1989],'Planning and Development in India: A Critique,' Allied Publishers Private Limited, New Delhi. 3. Bhagwati, Jagdish.[2004],'In Defense of Globalization,' Oxford University Press, U.K. 4. Dhingra, Ishwar //C.[2006],'Indian Economy,' Sultan Chand and Sons, New Delhi. 5. Datt, Ruddar and Sundaram, K.P.M.[Latest edition] ,'Indian Economy,' S. Chand and Co, New Delhi.	

CE(OE)802B	**Cyber Law and Ethics** 2L + 0T	2 Credits
Module 01	Introduction: Basics of Law, Understanding Cyber Space, Defining Cyber Laws, Scope and Jurisprudence, Concept of Jurisdiction, Cyber Jurisdiction, Overview of Indian Legal System, Introduction to IT Act 2000, Amendments in IT Act, Cyber Laws of EU – USA – Australia - Britain, other specific Cyber laws	6L
Module 02	Computer Ethics, Privacy and Legislation: Computer ethics, moral and legal issues, descriptive and normative claims, Professional Ethics, code of ethics and professional conduct. Privacy, Computers and privacy issue, Digital Evidence Controls, Evidence Handling Procedures, Basics of Indian Evidence ACT, Legal Policies, legislative background	8L
Module 03	Intellectual Property Rights Issues: Copyrights, Jurisdiction Issues and Copyright Infringement, Multimedia and Copyright issues, WIPO, Intellectual Property Rights, Understanding Patents, Understanding Trademarks, Trademarks in Internet, Domain name registration, Software Piracy, Legal Issues in Cyber Contracts, Authorship, Document Forgery	8L
Module 04	Indian IT Act and Standards: Indian IT ACT, Adjudication under Indian IT ACT, IT Service Management Concept, IT Audit standards, ISO/IEC 27000 Series, COBIT, HIPPA, SOX, System audit, Information security audit, ISMS, SoA (Statement of Applicability), BCP (Business Continuity Plan), DR (Disaster Recovery), RA (Risk Analysis/Assessment)	6L
Module 05	International Laws governing Cyber Space: Introduction to International Cyber Law, UNCITRAL, Cyber Laws: Legal Issues and Challenges in India, Net neutrality, Role of INTERPOL.	4L
Reference	1. Computer Ethics-Deborah G. Johnson, Pearsons Education 2. Cyber Law Simplified-VivekSood, McGraw Hill Education 3. Cyber frauds, cybercrimes & law in India- Pavan Duggal, Saakshar Law Publications 4. The Internet Law of India: Indian Law Series- Shubham Sinha, CreateSpace Independent Publishing Platform 5. Principles of Information Security- Michael E. Whitman, Herbert J. Mattord, Course Technology	