

COMPUTER SCIENCE AND ENGINEERING
FOUR YEAR B.TECH DEGREE COURSE
Scheme of Instruction and Examination
(Effective from 2020-2021)

V Semester CSE

(Scheme-2020)

S.No	Category	Course Title	Credits	Scheme of Instruction periods/week			Scheme of Examination Maximum Marks		
				L	T	P	End Exam Marks	Internal Assessment Marks	Total Marks
I Theory									
1.	PCC	Data Communication and Computer Networks	3	3	0	0	60	40	100
2.	PCC	Formal Languages and Automata Theory	3	3	0	0	60	40	100
3.	PCC	Artificial Intelligence	3	3	0	0	60	40	100
4.	PEC	Professional Elective – I	3	3	0	0	60	40	100
5.	OEC	Open Elective – I	3	3	0	0	60	40	100
6.	MC	Professional Ethics	0	2	0	0	0	100	100
II Practical									
7.	PCL	Data Communication and Computer Networks Lab	1.5	0	0	3	60	40	100
8.	PCL	Artificial Intelligence Lab	1.5	0	0	3	60	40	100
9.	SC	Multimedia and Application Lab	2	0	0	4	60	40	100
10.	INT	Summer Internship - I	1.5	0	0	0	0	100	100
			21.5						

VI Semester CSE

(Scheme-2020)

S.No	Category	Course Title	Credits	Scheme of Instruction periods/week			Scheme of Examination Maximum Marks		
				L	T	P	End Exam Marks	Internal Assessment Marks	Total Marks
I Theory									
1.	PCC	Compiler Design	3	3	0	0	60	40	100
2.	PCC	Big Data Technologies	3	3	0	0	60	40	100
3.	PCC	Foundations of Machine Learning	3	3	0	0	60	40	100
4.	PCC	Microprocessors and Microcontrollers	3	3	0	0	60	40	100
5.	PEC	Professional Elective – II	3	3	0	0	60	40	100
6.	OEC	Open Elective – II	3	3	0	0	60	40	100
7.	MC	Essence of Indian Traditional Knowledge	0	2	0	0	0	100	100
II Practical									
8.	PCL	Compiler Design Lab	1.5	0	0	3	60	40	100
9.	PCL	Big Data Technologies Lab	1.5	0	0	3	60	40	100
10.	PCL	Machine Learning Lab	1.5	0	0	3	60	40	100
11.	SC	Android App development Lab	2	0	0	4	60	40	100
			24.5						

DATA COMMUNICATION AND COMPUTER NETWORKS (DCCN)

V Semester: CSE						Scheme: 2020		
Course Code	Category	Hours/Week			Credits	Maximum Marks		
CS301	PCC	L	T	P	C	Continuous Internal Assessment	End Exam	TOTAL
		3	0	0	3	40	60	100
Sessional Exam Duration: 1½ Hrs						End Exam Duration: 3 Hrs		

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

CO1: Understand Data Communication Systems, Network models and its Protocols

CO2: Understand concepts of Transmission media and techniques of Data link layer.

CO3: Understand the routing strategies for an IP based networking infrastructure.

CO4: Study of congestion control and internetworking concepts.

CO5: Understand connection establishment and services provided by TCP and UDP

UNIT - I

Introduction: Data Communication, Components, Data Representations, Dataflow, Network Topologies, categories of networks, Internet, protocols and standards.

Network Models - Layered tasks, OSI Reference model, layers in OSI model, TCP/IP Protocol suite Addressing – Physical address, Logical address, port addresses.

UNIT - II

Physical layer and Transmission Media: Analog and digital signals, Digital signals – Bit rate, Bit length, Transmission of digital signals, Transmission Impairments – Attenuation, Distortion and Noise, Performance – Bandwidth, Throughput, Latency, Jitter.

Data Link Layer: Error detection – Introduction, Block coding – error detection, error correction, hamming distance and minimum hamming distance, CRC codes, Checksum.

UNIT - III

Network layer: Design Issues: store-and-forward,

Services to transport layer: Connection less and Connection oriented services

Routing Algorithms: The optimality principle, shortest path routing, Flooding, Distance vector and Link state, Multicast Routings.

UNIT - IV

Congestion Control: Principles, congestion prevention policies, congestion control in virtual circuits and datagram subnets, load shedding, jitter control.

Internetworking: Tunneling, Internet work routing, Fragmentation. The IP protocol, IP address, Gateway routing protocols: OSPF, BGP.

UNIT - V

Transport Layer: UDP, TCP- service model, protocol, segment header, connection management, Transmission Policy.

Application Layer: The DNS Name Space, Resource Records, Name Servers.

Text Books :

1. Behrouz A. Forouzan [2006][4th Edition], Data communications and Networking, MGH.

2. Andrew S. Tenenbaum [2007], [4th Edition], Computer Networks, Pearson Education.

Reference Books :

1. William Stallings ,Data and Computer Communications, Seventh Edition or Eighth Edition
2. An Engineering Approach to Computer Networks, S.Keshar, [II Edition], Pearson Education.
3. Computer Networking: A Top-Down Approach Featuring the Internet, James F, Keith W.Ross, [V Edition], Pearson Education.
4. Computer networks and internets, Douglas E Comer [6th Edition], Pearson Education.

Web References:

- 1.https://www.tutorialspoint.com/data_communication_computer_network/index.htm

Question Paper Pattern:**Sessional Examination:**

The question paper for sessional examination shall be for 25 marks, covering half of the syllabus for first sessional and remaining half for second sessional exam. The question paper shall consist of three sections with Two Questions (EITHER/ OR Type) in each section. The student shall answer one question from each section.

End Examination:

The question paper for End examination shall be for 60 marks. The Question paper shall contain Five Units with Two Questions (Either or Type) from each unit. Each of these questions may contain sub question and the student should answer any one question from each unit. Each Question carries 12 marks.

FORMAL LANGUAGES AND AUTOMATA THEORY (FLAT)

V Semester : CSE

Scheme : 2020

Course Code	Category	Hours/Week			Credits	Maximum Marks		
CS302	PCC	L	T	P	C	Continuous Internal Assessment	End Exam	TOTAL
		3	0	0	3	40	60	100

Sessional Exam Duration 1½ Hrs

End Exam Duration: 3 Hrs

Course Outcomes : At the end of the course the student will be able to

CO1: Design the finite automata for a given regular language.

CO2: Understand the regular expressions and pumping lemma of regular languages.

CO3: Understand the regular grammar, Context Free Grammar and pumping lemma for CFL.

CO4: Design push down automata and context free grammar for a given context free language.

CO5: Design the Turing Machine for the given formal language.

UNIT – I

Introduction- Alphabets, Strings and Languages; Automata and Grammars, Deterministic finite Automata (DFA)-Formal Definition, Simplified notation: State transition graph, Transition table, Language of DFA, Nondeterministic finite Automata (NFA), NFA with epsilon transition, Language of NFA, Equivalence of NFA and DFA, Minimization of Finite Automata, Distinguishing one string from other, Myhill-Nerode Theorem.

UNIT – II

Regular Expression (RE)- Regular expression (RE) Definition, Operators of regular expression and their precedence, Algebraic laws for Regular expressions, Kleen's Theorem, Regular expression to FA, DFA to Regular expression, Arden Theorem, Non Regular Languages, Pumping Lemma for regular Languages. Application of Pumping Lemma, Closure properties of Regular Languages, Decision properties of Regular Languages, FA with output: Moore and Mealy machine, Equivalence of Moore and Mealy Machine, Applications and Limitation of FA.

UNIT – III

Context Free Grammar (CFG) and Context Free Languages (CFL)- Definition, Examples, Derivation, Derivation trees, Ambiguity in Grammar, Inherent ambiguity, Ambiguous to Unambiguous CFG, Useless symbols, Simplification of CFGs, Normal forms for CFGs: CNF and GNF, Closure properties of CFLs, Decision Properties of CFLs: Emptiness, Finiteness and Membership, Pumping lemma for CFLs.

UNIT – IV

Push Down Automata (PDA)- Description and definition, Instantaneous Description, Language of PDA, Acceptance by Final state, Acceptance by empty stack, Deterministic PDA, Equivalence of PDA and CFG, CFG to PDA and PDA to CFG.

UNIT – V

Turing Machines (TM)- Basic model, definition and representation, Instantaneous Description, Language acceptance by TM, Variants of Turing Machine, TM as Computer of Integer functions, Universal TM, Recursive and recursively enumerable languages, Halting problem.

Text Books:

1. Hopcroft and Ullman, "Introduction to Automata Theory, Languages and Computation", Pearson Education, 3rd edition, 2006

Reference Books:

1. Martin J. C., "Introduction to Languages and Theory of Computations", TMH, 4th edition, 2010
2. Peter Linz, "An Introduction to Formal Language and Automata", Narosa Pub. House, 2011
3. Papadimitriou, C. and Lewis, C. L., "Elements of the Theory of Computation", PHI, 1997

Question Paper Pattern:**Sessional Examination:**

The question paper for sessional examination shall be for 25 marks, covering half of the syllabus for first sessional and remaining half for second sessional exam. The question paper shall consist of three sections with Two Questions (EITHER/ OR Type) in each section. The student shall answer one question from each section.

End Examination:

The question paper for End examination shall be for 60 marks. The Question paper shall contain Five Units with Two Questions (Either or Type) from each unit. Each of these questions may contain sub question and the student should answer any one question from each unit. Each Question carries 12 marks.

ARTIFICIAL INTELLIGENCE (AI)

Scheme : 2020

V Semester : Common for CSE & CST

Course Code	Category	Hours/Week			Credits	Maximum Marks		
CS303	PCC	L	T	P	C	Continuous Internal Assessment	End Exam	TOTAL
		3	0	0	3	40	60	100
Sessional Exam Duration : 1½ Hrs					End Exam Duration: 3 Hrs			

Course Outcomes : At the end of the course the student will be able to

CO1: Understand the fundamental concepts of Artificial Intelligence.

CO2: Solve problems by applying suitable search method.

CO3: Solve problems by applying heuristic search method.

CO4: Understand constraint satisfaction problems.

CO5: Understand the Knowledge Representation techniques.

UNIT – I

Introduction: What Is AI? Risk and benefits of AI. **Intelligent Agents:** Agents and Environments, Good Behavior: The Concept of Rationality, The Nature of Environments and the Structure of Agents.

UNIT – II

Solving Problems by Searching: Problem-Solving Agents, Example Problems, Searching for Solutions.

Uninformed Search Strategies: BFS, DFS, Depth –limited search, IDA, Bidirectional search.

UNIT – III

Informed (Heuristic) Search Strategies: Greedy best-first search, A* search, Memory-bounded heuristic search, learning to search better. Heuristic Functions.

UNIT – IV

Constraint satisfaction problem: Defining Constraint Satisfaction Problems, Constraint Propagation: Inference in CSPs, Backtracking Search for CSPs, Backtracking Search for CSPs, The Structure of Problems.

UNIT – V

Knowledge Representation: Ontological Engineering, Categories and Objects, Events, Mental Objects and Modal Logic, Reasoning Systems for Categories, Reasoning with Default Information.

Text Books:

- RussellStuart, and Peter Norvig. "Artificial intelligence: a modern approach." (2002).

Reference Books:

- Artificial Intelligence, Ritch & Knight, TMH
- Artificial Intelligence, Saroj Kaushik.
- Introduction to Artificial Intelligence, Philip C Jackson
- Artificial Intelligence: The Basics, Kevin Warwick

Question Paper Pattern:**Sessional Examination:**

The question paper for sessional examination shall be for 25 marks, covering half of the syllabus for first sessional and remaining half for second sessional exam. The question paper shall consist of three sections with Two Questions (EITHER/ OR Type) in each section. The student shall answer one question from each section.

End Examination:

The question paper for End examination shall be for 60 marks. The Question paper shall contain Five Units with Two Questions (Either or Type) from each unit. Each of these questions may contain sub question and the student should answer any one question from each unit. Each Question carries 12 marks.

PROFESSIONAL ETHICS (PE)

V Semester: Common to all Branches					Scheme: 2020			
Course Code	Category	Hours/Week		Credit s	Maximum Marks			
MC104	MC	L	T	P	C	Continuous Internal Assessment	End Exam	TOTAL
		2	-	-	-	100	-	100

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

CO1: Understand the importance of Ethics & Human Values and become Humane.

CO2: Know the moral autonomy and uses of Ethical theories.

CO 3: Know the responsibilities of the Engineer towards the society.

CO 4: Assess environmental issues to take Protective measures to evade risks.

CO 5: Determine various roles of Engineer and help them make the world a better place.

UNIT-I

Human Values

Morals – Values - Ethics – Morals vs Laws - Integrity - Work Ethics - Respect for Others - Peaceful Life - Honesty - Courage - Valuing Time- Empathy - Character - Spirituality

UNIT-II

Engineering Ethics: Definition of Engineering Ethics - Varieties of Morals - Types of Inquiry – Kohlberg’s Theory –Gilligan’s Theory - Consensus & Controversy - Models of Professional Roles - Customs and Religion - Uses of Ethical Theories

UNIT-III

Engineering As Social Experimentation: Engineering as Social Experimentation - Engineers as responsible experimenters - Codes of Ethics - A balanced Outlook on Law -The Challenger case study

UNIT-IV

Safety, Responsibilities & Rights: Safety and Risk - Risk Benefit Analysis and Reducing Risk - Collegiality and Loyalty - Respect for Authority - Confidentiality - Occupational Crime - Professional Rights - Employee Rights - Intellectual Property Rights (IPR)

UNIT-V

Global Issues

Multinational Corporations - Environmental Ethics - Computer Ethics -Engineers as Managers - Consulting Engineers - Moral Leadership - Sample Code of Ethics like ASME, ASCE, IEEE, Institute of Engineers, Indian Institute of Materials Management, IETE etc.,

Text Books:

1. Jayashree Suresh, B.S.Raghavan, “Human Values and Professional Ethics”, S. Chand Publications

Reference Books:

1. Mike Martin and Roland Schinzinger, "Ethics in Engineering", McGraw Hill, New York., 1996

2. Charles D.Fleddermann , "Engineering Ethics", prentice Hall, New Mexico., 1999.

3. S. Dinesh Babu, “Professional Ethics & Human Values”, Laxmi publications.

MULTIMEDIA AND APPLICATIONS LAB (MAA (P))

V Semester : Common for CSE, CST,
CSE(AIML),CSE(DS) & CSBS

Scheme : 2020

Course Code	Category	Hours/Week			Credits	Maximum Marks		
SCCS02	SC	L	T	P	C	Continuous Internal Assessment	End Exam	TOTAL
		0	0	4	2	40	60	100

Sessional Exam Duration: 2Hrs

End Exam Duration: 3 Hrs

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

CO1: Design the web based multimedia components

CO2: Create time-based and interactive multimedia components.

CO3: Create Animation Projects from its Conceptual Stage to the final Product.

CO4: Apply Audio and Video Production Techniques to an Animation Project.

List of Experiments

1. Design a web page to display student education details in a tabular format.
2. Write an HTML code to display the CV on a web page.
3. Design a Registration Form which includes a multimedia content. On submitting the form, the user should navigate to Home page.
4. Write an HTML code to create a Home page having three links: About Us, Our Services and Contact Us. Create separate web pages for the three links.
5. Design a web page which includes text, graphics, sound, video, and animation create your Institute website, Department Website and Tutorial website for specific subject.
6. Procedure to create an animation to change a Circle into a Square using flash.
7. Procedure to create an animation for a Boy playing with a Football.
8. Procedure to create an animation to show the ripple effect.
9. Procedure to create a scene to show the sunrise and sunset (using multiple layers and motion tweening)
10. Procedure to Create an animation for bus, car race in which both starts from the same origin point and the car winning the race.
11. Procedure for creating a Banner using Photoshop.
12. Procedure for creating a Audio file using free open source tools.
13. Procedure for creating a video: Editing, Mixing, Adding Sound to a video.
14. Procedure for Editing an Image using Photoshop/free open source tool.
15. Procedure for working with text using Microsoft power point.

Additional Experiments

1. Procedure to create an Animation to indicate a ball bouncing on the steps.
2. Procedure to create a simulation Animation of Moving Clouds.
3. Procedure to draw the fan blades and to give proper Animation.
4. Procedure to create an Animation with the following features:
*Letters should Appear one by one
*The fill color of the text should change to a different color after the display of full word
5. Procedure to simulate a ball hitting another ball.

COMPILER DESIGN (CD)

Scheme : 2020

VI Semester : Common for CSE, CSE(AIML) & CSE(DS)

Course Code	Category	Hours/Week			Credits	Maximum Marks		
CS306	PCC	L	T	P	C	Continuous Internal Assessment	End Exam	TOTAL
		3	0	0	3	40	60	100

Sessional Exam Duration 1½ Hrs

End Exam Duration: 3 Hrs

Course Outcomes : At the end of the course the student will be able to

CO1: Understand the phases of compiler and lexical analyzer.

CO2: Construct the parse trees using Top down and bottom up parsing methods.

CO3: Build a type system, syntax directed translation and symbol table.

CO4: Develop intermediate code generation and code optimization techniques.

CO5: Understand target code generation using flow graph and DAG representation Three address code.

UNIT – I

Introduction: Language Processors, Phases of compiler, Phases vs Passes, Frontend and backend of compiler, Compiler Vs Interpreter, Compiler construction Tools.

Lexical Analysis: Introduction to Lexical Analyzer, Role of lexical analyzer, Specialized Input buffering Techniques, Specification of tokens, Recognition of tokens, A language for specifying Lexical analyzer, Design of Lexical analyzer generator.

UNIT – II

Syntax Analysis: Role of parser, Context free grammars, Derivations, Parse Tree, Writing a Grammar, Left most and rightmost Derivations, Elimination of left recursion, Left factor a grammar.

Top Down Parsing: Introduction, Top Down Parsing, Recursive decent parser, Predictive parser, Non Recursive predictive parser, First and Follow Functions, Construction of LL parsing Table.

Bottom up parsing: Shift reduce parsing using stack, Handles, Operator precedence parsing, Construction Precedence Table, SLR parser, LR(0) items, Constructing SLR parsing Table.

UNIT – III

Semantic Analysis: Role of Semantic Analyzer, Type Checking, Type conversions, Type system, Type expressions, Basic Types and Constructor Types, a simple type checker, equivalence of type expressions.

Run time environments: Activation Trees, Control Stacks, Storage Organization, Run time memory, Activation Records, Storage Allocation Strategies - Static Allocation, Stack Allocation, Heap Allocation.

UNIT – IV

Intermediate Code Generation: Intermediate languages, Threes address code - Postfix notations, Syntax trees, Directed Acyclic graphs, Translation into Three Address Code, Implementation of three address code-Quadruples, Triples, Indirect Triples.

Code Optimization: Criteria for code improving transformations, An Organization for an Optimizing Compiler, Principal sources of code optimization-Common sub expressions, Copy propagation, Dead code elimination, Loop Optimizations, Peephole optimization, Optimization of basic blocks.

UNIT – V

Code Generation: Issues in the design of code generator, Target machine, Basic blocks and flow graphs,

Next use information, A simple code generator, DAG representation of basic blocks, Generating code from DAG- Labeling Algorithm.

Text Books:

1. *Compilers: Principles, Techniques and Tools*, Second Edition, PHI, V. Aho, R. Sethi and J. Ullman.

Reference Books:

1. *Lex & Yacc*, Levine R. John, Tony Mason and Doug Brown

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End Examination:

The question paper for End examination shall be for 60 marks. The Question paper shall contain Five Units with Two Questions (Either or Type) from each unit. Each of these questions may contain sub question and the student should answer any one question from each unit. Each Question carries 12 marks.

4. Big Data Now: 2012 Edition Publisher: O'Reilly Media.

Question Paper Pattern:

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Unsupervised Learning Techniques

Clustering algorithms - K-Means, DB Scan

Text Books:

1. Aurelian Geron, "Hands-On Machine Learning with Scikit-Learn and Tensor Flow: Concepts, Tools, and Techniques to build Intelligent Systems", O'Reilly Publications, First Edition, 2017
2. Ethem Alpaydin, "Introduction to Machine Learning", The MIT Press, Third Edition, 2014

Reference Books:

1. Tom M. Mitchell, "Machine Learning", Mc Graw Hill Education, Indian Edition, 2013
2. Oliver Theobald, "Machine Learning for Absolute Beginners", Second Edition, 2017
3. Machine Learning with python Tutorial Point.

Question Paper Pattern:

Sessional Examination:

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End Examination:

The question paper for End examination shall be for 60 marks. The Question paper shall contain Five Units with Two Questions (Either or Type) from each unit. Each of these questions may contain sub question and the student should answer any one question from each unit. Each Question carries 12 marks.

MICROPROCESSORS AND MICROCONTROLLERS (MMC)

VI Semester : Common for CSE & CST

Scheme : 2020

Course Code	Course Category	Hours/Week			Credits	Maximum Marks		
EC320	PCC	L	T	P	C	Continuous Internal Assessment	End Exam	TOTAL
		3	0	0	3	40	60	100

Sessional Exam Duration 1½ Hrs

End Exam Duration: 3 Hrs

Course Outcomes : At the end of the course the student will be able to

CO1: Understand the pin structure, architecture of 8086 microprocessor.

CO2: Understand the operations and internal block description l of 8086 microprocessor.

CO3: Apply the programming model of 8086 microprocessor for Assembly language programs.

CO4: Understand the pin structure, architecture and operations of 8051 microcontroller.

CO5: Apply the programming model of 8051 microcontroller for Assembly language programs.

UNIT - I

Basics of Microprocessors: Block Diagram and Features of 8085 microprocessor, 8086 CPU architecture, Pin Diagram of 8086 microprocessor, comparison of 8085 and 8086 microprocessors.

UNIT - II

8086 Operations: Segmented memory, Physical Memory Organization, Operating modes, Addressing modes, 8086 instruction set

UNIT - III

Programming and Interfacing using 8086: Simple programs on Arithmetic operations, Sorting, Searching. Introduction to 8255 (Programmable Peripheral Interface) and it's CWR, 8251(USART), 8259 (Programmable Interrupt Controller).

UNIT - IV

Introduction to 8051 Microcontroller: Pin Diagram, Architecture, Input / Output ports and circuits, External memory, counters and Timers, Serial data input/output, interrupts.

UNIT - V

8051 Programming: Addressing Modes, Instruction set. Basic Programming with 8051 Micro controller. Interfacing LEDs, Switches.

Text Books :

1. A K Ray, K M Bhurchandi, *Advanced Microprocessors and Peripherals*, 2nd Edition, Tata McGraw Hill Education Private Ltd, 2010.
2. Mazidi Muhammad Ali, Mazidi Janice Gillespie & McKinlay Rolin D, *The 8051 Microcontroller and Embedded Systems*, 2nd Edition, Pearson Education, 2008.

Reference Books :

1. John Uffenbeck, *The 8086/8088 Family: Design, Programming, and Interfacing*, 3rd Edition, Pearson Ed, 2006.
2. Barry B. Brey, *The Intel Microprocessors-Architecture, Programming and Interfacing*, 8th Edition, Princeton Hall India, 2009.
3. Kenneth J. Ayala, *The 8051 Microcontroller*, Penram International Publication Ltd, 2006.
4. Gaonkar Ramesh, *Microprocessors Architecture, Programming & Applications with 8085/8080A*, 5th Edition, Penram International publication Ltd, 2010.
5. N. Senthil Kumar, M. Saravanan, S. Jeevananthan, *Microprocessors and Interfacing*, OUP India, 2012.

Web References:

1. www.nptel.onlineteachers.ac.in/microprocessorsandmicrocontrollers

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End Examination:

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ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE (EITK)							
VI Semester: Common to all Branches					Scheme:2020		
Course Code	Category	Hours/Week		Credits	Maximum Marks		
MC105	MC	L	T	P	C	Continuous Internal Assessment	End Exam
		2	0	0		100	-
						TOTAL	

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

CO1: Understand the concept of Traditional knowledge and its importance.

CO2: Explain the need and importance of protecting traditional knowledge.

CO 3: Illustrate the various enactments related to the protection of traditional knowledge.

CO 4: Interpret the concepts of Intellectual property to protect the traditional knowledge.

CO 5: Understand the traditional knowledge in different sectors.

UNIT-I

Introduction To Traditional Knowledge

Define traditional knowledge, nature and characteristics, scope and importance, kinds of traditional knowledge, the physical and social contexts in which traditional knowledge develop, the historical impact of social change on traditional knowledge systems. Indigenous Knowledge (IK), characteristics, traditional knowledge vis-à-vis indigenous knowledge, traditional knowledge Vs western knowledge traditional knowledge vis-à-vis formal knowledge

UNIT-II

Protection Of Traditional Knowledge

Protection of traditional knowledge: The need for protecting traditional knowledge Significance of TK Protection, value of TK in global economy, Role of Government to harness TK.

UNIT-III

Legal Frame Work And Tk

- A. The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, The Protection of Plant Varieties and Farmers' Rights Act, 2001 (PPVFR Act).
 - B. The Biological Diversity Act 2002 and Rules 2004, the protection of traditional knowledge bill, 2016. Geographical indicators act 2003.

UNIT-IV

Traditional Knowledge And Intellectual Property

Systems of traditional knowledge protection, Legal concepts for the protection of traditional knowledge, Certain non IPR mechanisms of traditional knowledge protection, Patents and traditional knowledge, Strategies to increase protection of traditional knowledge, global legal FORA for increasing protection of Indian Traditional Knowledge.

UNIT-V

Traditional Knowledge In Different Sectors

Traditional knowledge and engineering, Traditional medicine system, TK and biotechnology, TK in agriculture, Traditional societies depend on it for their food and healthcare needs, Importance of conservation and sustainable development of environment, Management of biodiversity, Food security of the country and protection of TK. 139.

TextBooks:

1. 'Traditional Knowledge System in India' by Amit Jha, 2009.

ReferenceBooks:

1. 'Traditional Knowledge System and Technology in India' by Basanta Kumar Mohanta and Vipin Kumar Singh, Pratibha Prakashan 2012.
2. 'Traditional Knowledge System in India' by Amit Jha Atlantic publishers, 2002.
3. 'Knowledge Traditions and Practices of India' by Kapil Kapoor and Michel.

Web References:

1. www.youtube.com/watch?v=LZP1StpYEPM
2. <https://nptel.ac.in/courses/121106003>

