PROGRAM OUTCOME (POs), PROGRAM SPECIFIC OUTCOMES (PSOs) & COURSE OUTCOMES (COs) MAPPING

FOR

B.Sc. COMPUTER SCIENCE
PROGRAMME (Honours)

Under CBCS

RUNNING UNDER
THE DEPARTMENT OF COMPUTER SCIENCE

PRAGJYOTISH COLLEGE

Department of Computer Science

One of the most important benefits of taking computer courses is that the students will have more jobs available to them. The types of new jobs that will be available depend on what kind of courses they take, but every group of courses will open up new opportunities. Almost all jobs require that a worker has some computer skills. The number of positions available to those **who aren't comfortable using computers gets smaller each day**.

Bachelor of Computer Science (B.Sc. CSC, Honours) Programme : (**CBCS** System under Gauhati University) :	
Program Outcome (PO)	**PO1. Disciplinary Knowledge**: Demonstrate comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.
	PO2. Social Interaction: express thoughts and ideas effectively in writing and orally; listen and communicate with others using appropriate media. Work effectively and respectfully with diverse teams; act together as a group or a team in the interests of a common cause; Elicit views of others, mediate disagreements and help reach conclusions in group settings.
	PO3. Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and act with an informed awareness of issues and participate in civic life through volunteering; embrace moral/ ethical values in conducting one's life, possess knowledge of the values and beliefs of multiple cultures and a global perspectives; engage in a multicultural society and interact respectfully with diverse groups.
	PO4. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
	PO5. Information and Digital Literacy: Use ICT in a variety of learning situations; demonstrate ability to access, evaluate and use a variety of relevant information sources; and use appropriate software for analysis of data.
	PO6. Research–related skills: Critically evaluate practices, policies and theories by following scientific approach to knowledge development. Have a sense of inquiry and capability for asking relevant/ appropriate questions, problematizing, synthesizing and articulating; ability to recognize cause- and-effect relationships, define problems, formulate hypotheses, interpret and draw conclusions from data, ability to plan, execute and report the results of an experiment or investigation; ability to apply one's learning to real life situations. //

Program Specific Outcomes (PSOs)	Completion of **B.Sc. Computer Science (Honours) Programme** (under **CBCS**) shall enable a student :–
	PSO1. Understand the core theoretical concept of Computer Science: Understand the core theoretical principles of Computer Science and its Applications.
	PSO2. Acquire analytical and logical skill for higher Education : Acquire the ability to analyse critical problems logically.
	PSO3. Excel in the field of Computer Science & Applications and learn good laboratory practices particularly in terms of Programming and security of data : Learn to handle Computer Programming experiments to solve certain mathematical and logical problems perfectly, accurately and safely.
	PSO4. Take up jobs in allied fields: Use the knowledge of Computer Science & Application to seek opportunities in other allied fields (i.e., sister concerns) like Mathematics, Physics, Statistics, Commerce and Management. //

Paper Name : Programming Fundamentals using C/C++

Paper Code : CSC-HC-1016

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to:	Unit-1: Introduction to C and C++	Remember, Understand.
CO-1: Understand the basic terminology used in computer programming. [understand]	Unit-2: Data Types, Variables, Constants, Operators and Basic I/O	Remember, Understand.
CO-2: Interpret the problem in hand to get the solution using the logical design such as Algorithms and Flowcharts. [apply]	Unit-3: Expressions, Conditional Statements and Iterative Statements	Remember, Understand, Apply.
CO-3: Interpret the logical design into its equivalent Programming code (using C/C++ language) [apply]	Unit-4: Functions and Arrays	Remember, Understand, Apply.
CO-4: Interpret the logical design into its equivalent Object Oriented Programming code (OOPs using C/C++ language) [apply]	Unit-5: Derived Data Types (Structures and Unions)	Remember, Understand, Apply.
	Unit-6: Pointers and References in C++	Remember, Understand.
	Unit-7: Memory Allocation in C++	Remember, Understand, Apply.
	Unit-8: File I/O, Preprocessor Directives	Remember, Understand, Apply.
	Unit-9: Using Classes in C++	Remember, Understand, Apply.
	Unit-10: Overview of Function Overloading and Operator Overloading.	Remember, Understand, Apply.
	Unit-11: Inheritance and Exception Handling.	Remember, Understand, Apply.

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	M	H	L	M		M		L	L	M
CO-3	M	L	M		L	M		M		M
CO-4		M		M	L		M	M	L	

Paper Name : Computer System Architecture
Paper Code : CSC-HC-1026

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to:	Unit-1: Introduction	Remember, Understand
	Unit-2: Data Representation and Basic Computer Arithmetic	Remember, Understand
	Unit-3: Basic Computer Organization and Design	Remember, Understand
CO-1: Understand the binary and hexadecimal number systems including computer arithmetic. [understand]	Unit-4: Central Processing Unit	Remember, Understand
CO-2: Understand the fundamentals of different instruction set architectures and their relationship to the CPU design. [understand]	Unit-5: Memory Organization	Remember, Understand Apply.
CO-3: Knowledge about Primary and Secondary storage System as well as the Organization of the Input and Output. [apply] //	Unit-6: Input-Output Organization	Remember, Understand Apply

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M
CO-3	L	M	M		L	L		M		M

CORE PAPERS

Paper Name : Programming in JAVA

Paper Code : CSC-HC-2016

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to:	Unit- 1: Introduction to Java	Remember, Understand.
	Unit- 2: Arrays, Strings and I/O	Remember, Understand.
CO-1: Understand the basic terminology used in Java programming. [understand]	Unit- 3: Object-Oriented Programming Overview	Remember, Understand.
CO-2: Interpret the problem in hand to get the solution using the logical design such as Algorithms and Flowcharts. [apply]	Unit- 4: Inheritance, Interfaces, Packages, Enumerations, Autoboxing and Metadata.	Remember, Understand.
CO-3: Interpret the logical design into its equivalent Programming code (using Java language) [apply]	Unit- 5: Exception Handling, Threading, Networking and Database Connectivity.	Remember, Understand, Apply.
CO-4: Apply the Concepts of Exception Handling, Event Handling Networking and Database Connectivity and uses of Applet [apply]. //	Unit- 6: Applets and Event Handling	Remember, Understand, Apply.

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M
CO-3	L	M	M		L	L		M		M
CO-4	M	L		M	L	H		M	L	L

Paper Name : Discrete Structures

Paper Code : CSC-HC-2026

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to:	Unit- 1: Introduction to the Structure of Discrete Mathematic	Remember, Understand
	Unit- 2: Growth of Functions	Remember, Understand
CO-1: Understand the basic of discrete structures such as Numbers, Sets, used in computer science. [understand]	Unit- 3: Recurrences	Remember, Understand
CO-2: Familiarity with Growth of Functions, Recurrences, Graph Theory and Prepositional Logic.[understand]	Unit- 4: Graph Theory	Remember, Understand Apply.
CO-3: Use the basic of discrete structures such as Numbers, Sets, used in computer science.[apply]	Unit- 5: Prepositional Logic	Remember, Understand

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	M	L	M	M	H		H	
CO-2	L	M	M	M		L	M	L	M	L
CO-3	L	L	M		M	L		L		M

3rdSemester (Honours)
CORE PAPERS

Paper Name : Data Structure

Paper Code : CSC-HC-3016

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Implement the linear and non-linear data structure, determine and analyze the complexity of give algorithm **CO-2:** Know about the basic concepts of Function, Recursion, Array and Link-list. **CO-3:** Understand how several fundamental algorithms work particularly those concerned with Stack, Queues, Trees, various Sorting algorithms and Hashing. //	Unit- 1: Arrays	Remember, Understand, Analysis, Evaluate
	Unit- 2: Stacks	Remember, Understand, Analysis, Evaluate
	Unit- 3: Linked Lists	Remember, Understand, Analysis, Evaluate
	Unit- 4: Queues	Remember, Understand, Analysis, Evaluate
	Unit- 5: Recursion	Remember, Understand, Analysis, Evaluate
	Unit- 6: Trees	Remember, Understand, Analysis, Evaluate
	Unit- 7: Searching and Sorting	Remember, Understand, Analysis, Evaluate
	Unit- 8: Hashing	Remember, Understand, Analysis, Evaluate

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	M	M			M	M	M	L	H	L
CO-2	H	H	L		M	H	L		H	
CO-3	L	M	M	M		L	M	L	L	M

Paper Name : Operating System

Paper Code : CSC-HC-3026

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Make students able to learn different types of operating systems along with concept of file systems, Directory structure and CPU scheduling algorithms used in operating system. **CO-2:** Provide students' knowledge of Process management, Memory management, I/O management and deadlock handling algorithms. **CO-3:** Protection and Security is enforced by introducing Policy mechanism, Authentication, Internal access Authorization. **CO-4:** Implement various algorithms required for management, scheduling, allocation and communication used in Operating System. //	Unit- 1: Introduction	Remember, Understand, Analysis, Evaluate
	Unit- 2: Operating System Organization	Remember, Understand, Analysis, Evaluate
	Unit- 3: Process Management	Remember, Understand, Analysis, Evaluate
	Unit- 4: File and I/O Management	Remember, Understand, Analysis, Evaluate
	Unit- 5: Protection and Security	Remember, Understand, Analysis, Evaluate

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M
CO-3	M	M	L	H	L	L		M	M	L
CO-4		M		H	M		M	H		L

Paper Name : Computer Networks

Paper Code : CSC-HC-3036

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Help to get the knowledge on Networking concepts and the underlying technologies including the Wired (Guided) and Wireless (Unguided) media **CO-2:** Explain how communication works in computer networks and to understand the basic terminology of computer networks **CO-3:** Explain the role of protocols in networking and to analyze the services and features of the various layers in the protocol stack. **CO-4:** Understand the working various internetworking devices such as Repeaters, Hubs, Switches, Bridges, Router and Gateways. **CO-5:** Overview of the Application Layer protocols visible by the User such as Domain Name system (DNS), WWW and HTTP. //	Unit- 1: Introduction to Computer Networks	Remember, Understand, Analysis, Evaluate
	Unit- 2: Data Communication Fundamentals and Techniques	Remember, Understand, Analysis, Evaluate
	Unit- 3: Networks Switching Techniques and Access mechanisms	Remember, Understand, Analysis, Evaluate
	Unit- 4: Data Link Layer Functions and Protocol	Remember, Understand, Analysis, Evaluate
	Unit- 5: Multiple Access Protocol and Networks	Remember, Understand, Analysis, Evaluate
	Unit- 6: Networks Layer Functions and Protocols	Remember, Understand, Analysis, Evaluate
	Unit- 7: Transport Layer Functions and Protocols	Remember, Understand, Analysis, Evaluate
	Unit- 8: Overview of Application layer protocol	Remember, Understand, Analysis, Evaluate

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M
CO-3	M	M	L	H	L	L		M	M	L
CO-4		M		H	M		M	H		L
CO-5	M	M	L	H		M		M		L

SKILL ENHANCEMENT COURSE (SEC)

Paper Name : HTML Programming
Paper Code : CSC-SE-3034

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Understood the fundamentals of Web design and how to program using Hypertext Markup Language (HTML), and Cascading Style sheets (CSS). **CO-2:** Use knowledge of HTML and CSS code and an HTML editor to create personal and/or business websites following current professional and/or industry standards. **CO-3:4** Students will demonstrate competency in the use of common HTML code. **CO-4:** Use critical thinking skills to design and create websites. //	Unit- 1: The Basics	Remember, Understand, Analysis, Evaluate
	Unit- 2: HTML Formatting	Remember, Understand, Analysis, Evaluate
	Unit- 3: Links	Remember, Understand, Analysis, Evaluate
	Unit- 4: Images	Remember, Understand, Analysis, Evaluate
	Unit- 5: Tables	Remember, Understand, Analysis, Evaluate
	Unit- 6: Forms	Remember, Understand, Analysis, Evaluate

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M
CO-3	M	M	L	H	L	L		M	M	L
CO-4		M		H	M		M	H		L

4thSemester (Honours)
CORE PAPERS

Paper Name : Design and Analysis of Algorithms

Paper Code : CSC-HC-4016

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Basic Design and Analysis techniques of Algorithms, Correctness of Algorithm. **CO-2:** Algorithm Design Techniques such as Iterative techniques, Divide and Conquer, Dynamic Programming, Greedy Algorithms. **CO-3:** Various types of Sorting and Searching Techniques along with their complexity analysis. **CO-4:** Graphs Algorithms such as Breadth First Search (BFS), Depth First Search (DFS) and its Applications, as well as Minimum Spanning Trees. **CO-5:** String Processing including String Matching, KMP Technique.//	Unit- 1: Introduction	Remember, Understand, Analysis, Evaluate
	Unit- 2: Algorithm Design Techniques	Remember, Understand, Analysis, Evaluate
	Unit-3: Sorting and Searching Techniques	Remember, Understand, Analysis, Evaluate
	Unit- 4: Balanced Trees	Remember, Understand, Analysis, Evaluate
	Unit- 5: Graphs	Remember, Understand, Analysis, Evaluate
	Unit- 6: String Processing	Remember, Understand, Analysis, Evaluate

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M
CO-3	L	L	M	M	M	M		L	M	L
CO-4		M	L	L	M	L	M	H	L	L
CO-5	L	L	M	H	L	M		M	L	L

Paper Name : Software Engineering

Paper Code : CSC-HC-4026

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Understand how the basic application of engineering discipline is Applied to create better quality software with optimum effort in terms of resource, time and money [Understand]. **CO-2:** Be responsible, (as a software engineer) for developing and/or implementing the new features to improve the existing programs and software. [Apply] //	Unit- 1: Introduction to Software Engineering and the study of various models of Software development life cycle (SDLF)	Remember, Understand.
	Unit- 2: Requirement Analysis	Remember, Understand.
	Unit- 3: Software Project Management	Remember, Understand.
	Unit- 4: Risk Management	Remember, Understand.
	Unit- 5: Quality Management	Remember, Understand.
	Unit- 6: Design Engineering	Remember, Understand, Apply.
	Unit- 7: Testing Strategies & Tactics	Remember, Understand, Apply.

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	M	M	M	H	M	M	L	M	M
CO-2	M	M	H	M	H	M	M	L	M	M

Paper Name : Database Management System

Paper Code : CSC-HC-4036

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Acquaint practical knowledge about creating and manipulating data in the Database. Student gets the knowledge create and populate a RDBMS for a real life applications with constrains and keys, using SQL. **CO-2:** Gain a good understanding of the architecture and functioning of database management systems as well as associated tools and techniques, principles of data modeling using entity relationship and develop a good database design and normalization techniques to normalize a database.//	Unit- 1: Introduction	Remember, Understand, Analysis, Evaluate
	Unit- 2: Entity Relationship(ER) Modeling	Remember, Understand, Analysis, Evaluate
	Unit- 3: Relation data model	Remember, Understand, Analysis, Evaluate
	Unit- 4: Database design	Remember, Understand, Analysis, Evaluate
	Unit- 5: Transaction processing	Remember, Understand, Analysis, Evaluate
	Unit- 6: File Structure and Indexing	Remember, Understand, Analysis, Evaluate

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M

SKILL ENHANCEMENT COURSE (SEC)

Paper Name : PHP Programming

Paper Code : CSC-SE-4024

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Front end Designing of the Website. **CO-2:** Understood the features like functions, forms in PHP, Files handling, **CO-3:** OOPs concepts, Cookies, Sessions and Data base, draw images on the server with AJAX. Acquired skills to write PHP programs. //	Unit- 1: Introduction to PHP	Remember, Understand, Analysis, Evaluate
	Unit- 2: Handling HTML form with PHP	Remember, Understand, Analysis, Evaluate
	Unit- 3: PHP conditional events and Loops	Remember, Understand, Analysis, Evaluate
	Unit- 4: PHP Functions	Remember, Understand, Analysis, Evaluate
	Unit- 5: String Manipulation and Regular Expression	Remember, Understand, Analysis, Evaluate
	Unit- 6: Array	Remember, Understand, Analysis, Evaluate

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	L	L	M	M	H		L	M	H	
CO-2	M	H	M	M		M	M	M	L	M
CO-3	M	M	M	L	L	L		L	M	L

5ᵗʰSemester (Honours)
CORE PAPERS

Paper Name :Internet Technologies

Paper Code :CSC-HC-5016

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Inculcate knowledge in two domains : Web Technological concepts and Functioning of the Internet. **CO-2:** Implement interactive Web Pages using HTML, Java-Script (Client-side programming), Java Server Pages (JSP), Java Beans, Java Database connectivity (JDBC) fundamentals and protocols in the workings of the web and web applications. //	Unit- 1: Fundamentals	Remember, Understand, Analysis, Evaluate
	Unit- 2: JavaScript	Remember, Understand, Analysis, Evaluate
	Unit- 3: Java	Remember, Understand, Analysis, Evaluate
	Unit- 4: JDBC	Remember, Understand, Analysis, Evaluate
	Unit- 5: JSP	Remember, Understand, Analysis, Evaluate
	Unit- 6: Java Beans	Remember, Understand, Analysis, Evaluate

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M

Paper Name : Theory of Computation
Paper Code : CSC-HC-5026

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Understand the basic properties of formal languages and grammars. **CO-2:** Differentiate regular, context-free and recursively enumerable languages. **CO-3:** Make grammars to produce strings from a specific language. **CO-4:** Acquire concepts relating to the theory of computation and computational models including decidability and intractability.//	Unit- 1: Languages	Remember, Understand, Analysis, Evaluate
	Unit- 2: Finite Automata and Regular Languages	Remember, Understand, Analysis, Evaluate
	Unit- 3: Context free languages	Remember, Understand, Analysis, Evaluate

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	L	H	H	H		H	L	M	H	
CO-2	H	M	L	M		L	M	L	H	M
CO-3	H	L	L	H	H	M		H	M	L
CO-4		M	L	L	M	L	M	H	L	L

DISCIPLINE SPECIFIC ELECTIVES (DSE)

Paper Name : Microprocessor
Paper Code : CSC-HE-5016

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Understand the Intel 8085 microprocessor concepts, the basic Architecture, Addressing Modes, Instruction sets, and various types of available Interrupts for interfacing with other Internal and External I/O devices. [Understand] **CO-2:** Learn the basic Application of the Assembly Language Programming of the Intel 8085 microprocessor Kit. [Apply] //	Unit- 1: Internal Organization of 8085A microprocessor	Remember, Understand.
	Unit- 2: 8085A microprocessor architecture	Remember, Understand.
	Unit- 3: Assembly language programming in 8085A microprocessor	Remember, Understand, Apply.
	Unit- 4: Interfacing	Remember, Understand.
	Unit- 5: Interrupt	Remember, Understand.

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M

Paper Name : Project Work / Dissertation

Paper Code : CSC-HE-5036

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Understand the basic design for properly using and utilizing the hardware and software systems, necessary data, and processes to meet the desired needs for making a Customized Software Application for the intended User. [Apply] **CO-2:** Students are provided to work on multidisciplinary Problems. [Evaluate] **CO-3:** Students should be able to work as professionals, with portfolio ranging from data management, network configuration, utilizing hardware, database and software design to management and administration of entire systems. [Create] //	• <u>No Units Specified in this Paper</u> _**Guidelines**_ : • The students will be allowed to work on any project based on the concepts studied in core / elective or skill based elective courses. • The group size should be maximum of three (03) students. Each group will be assigned a teacher as a supervisor who will handle both their theory as well lab classes. • A maximum of Four (04) projects would be assigned to one teacher.	Remember, Understand, Apply, Analysis, Evaluate, Create.

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	M	M	H	H	H	H	H	H
CO-2	M	M	M	M	M	M	M	M	M	M
CO-3	M	M	M	M	M	M	M	H	H	H

6thSemester (Honours)
CORE PAPERS

Paper Name : Artificial Intelligence

Paper Code : CSC-HC-6016

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Conceptualize the basic ideas and techniques underlying the design of intelligent systems. [Understand] **CO-2:** Understand and explore the mechanism of mind that enables intelligent thought and action. [Apply] **CO-3:** Understand advanced representation formalism and search techniques. [Analyze] **CO-4:** Understand how to deal with uncertain and incomplete information. [Analyze] //	Unit- 1: Introduction	Remember, Understand.
	Unit- 2: Problem Solving and Searching Techniques	Remember, Understand, Apply, Analyze, Evaluate
	Unit- 3: Knowledge Representation	Remember, Understand.
	Unit- 4: Dealing with Uncertainty and Inconsistencies	Remember, Understand, Analysis, Evaluate.
	Unit- 5: Understanding Natural Languages	Remember, Understand, Apply.

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M
CO-3	H	L	M	M	M	M		L	M	L
CO-4		M	L	L	M	L	M	H	L	L

Paper Name : Computer Graphics

Paper Code : CSC-HC-6026

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
After the completion of this course, the students will be able to: **CO-1:** Understand the basics theoretical concepts of Computer Graphics and their fundamental elements. [Understand] **CO-2:** Overview, working and the functions of the Graphics Hardware [Apply] **CO-3:** Fundamental Algorithms of Computer Graphics and their Applications. [Apply] //	Unit- 1: Introduction	Remember, Understand.
	Unit- 2: Graphics Hardware	Remember, Understand, Apply, Analysis, Evaluate.
	Unit- 3: Fundamental Techniques in Graphics	Remember, Understand, Apply, Analysis.
	Unit- 4: Geometric Modeling	Remember, Understand, Apply, Analysis.
	Unit- 5: Visible Surface determination	Remember, Understand.
	Unit- 6: Surface rendering	Remember, Understand.

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M

DISCIPLINE SPECIFIC ELECTIVES (DSE)

Paper Name : Network Programming

Paper Code : CSC-HE-6016

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
Upon completion of the course students will be able to: **CO-1:** Understand the basics concept of Computer Networks, particularly the Transport Layer. [Understand]. **CO-2:** Demonstrate advanced knowledge of Network Programming for network communications using the Socket and Ports. [Apply] **CO-3:** Have a detailed knowledge of the TCP/UDP Sockets. [Apply] //	Unit- 1: Transport Layer Protocols	Remember, Understand, Apply.
	Unit- 2: Socket Programming	Remember, Understand, Apply.
	Unit- 3: Network Applications	Remember, Understand, Apply.

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	M	M	M	M	H	H	M	M	H	L
CO-2	M	M	M	M	M	M	M	M	M	L
CO-3	M	L	M	M	M	L	M	L	M	L

Paper Name : System Programming

Paper Code :CSC-HE-6036

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
Upon completion of the course students will be able to: **CO-1:** Understand the basics concept of System Programming including Assemblers, Loaders, Linkers and Compilers. [Understand] **CO-2:** Apply the theoretical as well as the practical aspects of computer System Programming. Such as Lexical Analysis using LEX Tool and Parsing using YACC Tool [Apply] **CO-3:** Analyse the various phases of the Compiler. [Analyze] //	Unit-1: Assemblers & Loaders, Linkers.	Remember, Understand, Apply.
	Unit-2: Introduction to and Overview of compilation.	Remember, Understand, Apply, Analyze.
	Unit-3: Lexical Analysis including LEX.	Remember, Understand, Apply.
	Unit-4: Parsing including YACC.	Remember, Understand, Apply.
	Unit-5: Intermediate representations.	Remember, Understand.
	Unit-6: Storage organization.	Remember, Understand.
	Unit-7: Object code generation	Remember, Understand.

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	M	L	L	M	M	L	M	L	M	M
CO-2	M	L	L	L	M	M	M	H	H	M
CO-3	M	L	M	M	M	L	L	L	M	M

Paper Name : Data Mining

Paper Code : CSC-HE-6046

Course Outcome	Unit / Topic	Bloom's Taxonomy Level
Upon completion of the course students will be able to: **CO-4:** Identify the scope and essentiality of Data Mining. [Understand] **CO-4:** Identify appropriate data mining algorithms to solve real world problems [Analyze] **CO-4:** Compare and evaluate different data mining techniques like classification, prediction, clustering and association rule mining. [Analyze] **CO-4:** To analyze data, choose relevant models and algorithms for respective applications. [Analyze] //	Unit- 1: Overview	Remember, Understand.
	Unit- 2: Association Rule Mining	Remember, Understand, Apply, Analysis.
	Unit- 3: Clustering	Remember, Understand.
	Unit- 4: Classification and regression technique	Remember, Understand, Apply, Analysis.

MAPPING	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	H	H	L		M	H	L		H	
CO-2	L	M	M	M		L	M	L	L	M
CO-3	L	L	M	M	M	M		L	M	L
CO-4		M	L	L	M	L	M	H	L	L

---------------- ● --------------------