

CS 2016: Web Development

Teaching Scheme			Evaluation Scheme	
Lectures	3		Test 1	15 Marks
			Test 2	15 Marks
Tutorials			Teacher Assessment	10 Marks
Total Credits	3		End-Semester Examination	60 Marks

Total Hours required for this course: 60 Hours.

Course Educational Objectives:

- Explain the basics of WWW & Internet + hardware involved
- Explain basic concepts in HTML & CSS
- Enable Students on how to make use of Internet Marketing
- Demonstrate on various ways of Securing own website
- Demonstrate importance of E-Commerce and Mobile Websites

Course Outcomes Expected:

After completion of course students will be able to

CO1: Differentiate Network Hardware, Internet and how it works

CO2: Create a simple web pages using HTML & CSS

CO3: Promote themselves on Internet using Internet Marketing

CO4: Secure their online presence

CO5: Monetize their skills using E-Commerce solution.

UNIT-1 World Wide Web: Introduction, History, Internet v/s WWW, Internet v/s Intranet, Introduction to Networking, LAN, MAN, WAN, PAN
Introduction to Network Hardware: Switches, Routers, Hubs, Gateways, Other Hardware

UNIT-2 Introduction to HTML: Introduction, HTML Editors, Creating a Simple Web Page, HTML Tags/Elements, Formatting Tags, Presentation Tags and HTML Attributes
Cascaded Style Sheets: Introduction to Style Sheets, Properties, Style by ID/Class & Tag Name

UNIT-3 Online Marketing: Tracking Website performance with Google Analytics, Using Google AdWords and AdSense, Social Media Marketing, Email Marketing
Search Engine Optimization: Introduction, SEO best practices, Online Reputation Management, Web Master Tools, Registering to Major Search Engines

UNIT-4 Web Security: Introduction, Network Security Model, Symmetric Cipher Models, Digital Signature, PGP, S-MIME, Web Security Considerations, Secure Electronic Transactions
Safety precautions: Firewall, Virus and its related threats and countermeasures

UNIT-5 Domain & Hosting: Introduction, **E-Commerce:** Payment Gateways
Mobile Compatible website: Introduction, Introduction to HTML5 & CSS3

TEXT AND REFERENCE BOOKS

1. Thomas Powell, "HTML & CSS: The Complete Reference", Fifth Edition by.
2. Jon Duckett, "Beginning HTML, XHTML, CSS, and JavaScript". – Wrox Publication.
3. Head First HTML with CSS & XHTML – O'Reilly Publication.
4. HTML, CSS, JavaScript for Dummies.

CS2017: Introduction to C & C++

Teaching Scheme		Evaluation Scheme	
Lectures	3 Hrs/Week	Test 1	15 Marks
		Test 2	15 Marks
		Teacher Assessment	10 Marks
Total Credits	3	End-Semester Examination	60 Marks

Total Hours required for this course: 60 Hours.

Course Description: One important practical objective for this course is to help to learn basics of C Programming and the Object Oriented programming language concepts. This course introduces basic skills in C & C++. C++ is a superset of the C language. It was designed with a bias toward system programming and embedded, resource-constrained and large systems, with performance, efficiency and flexibility of use as its design highlights. .

Course Objectives:

- To introduce concept of pointers in C
- To understand concept of Object Oriented Paradigm.
- To discuss when and how to use the appropriate concepts available in the C++ language.
- To discuss concept of File and how to Handle various exceptions.
- To elaborate & execute simple and complex C++ programs by using different c features.

Course Outcomes:

After completion of this course students will be able to:

CO1: Write & execute C Programs using basic C constructs. K2

CO2: Solve real time problems using C programming Language .K3

CO3: Describe Principles of Object Oriented Paradigm like Abstraction, Encapsulation, Inheritance, Polymorphism. K1

CO4 : Apply the concept of Constructor, Destructor, Friend Function, Dynamic Memory Allocation. K2

Detailed Syllabus:

UNIT 1	<p>Introduction to C Language fundamentals, The C character set, variables and constants, data types, keywords, expressions, statements, operators- arithmetic operators , unary operators, relational & logical operators, conditional operators, type conversions , type casting.</p>
UNIT 2	<p>Conditional execution - if, nested if, it else, switch, goto statement, Loop execution - For loop, While loop, Do while loop, break, and continue statements.</p> <p>Functions - Defining a function, passing arguments to functions, returning values from function, command line arguments, Recursion, Local & Global</p>

	variables concept.	
UNIT 3	Arrays- definition, passing array to the function, Multidimensional array, String operation- String copy, String length, String concatenation, String compare. Introduction to structure and union. Array of structure, Passing structure as an object to function. Structure as an return type of function.	
UNIT 4	Introduction: Introducing Object-Oriented Approach related to other paradigms (functional, data decomposition), Characteristics of Object-Oriented Languages. Basic terms and ideas: Abstraction, Encapsulation, Information hiding, Inheritance, Polymorphism, Review of C, Difference between C and C++, cin, cout, new, delete operators.	
UNIT 5	Classes and Objects: Abstract data types, Object & classes, attributes, methods, C++ class declaration, State identity and behavior of an object, Constructors and destructors, instantiation of objects, Default parameter value, Copy Constructor, Static Class Data, Constant and Classes, C++ garbage collection, dynamic memory allocation.	
<p>TEXT BOOKS:</p> <ol style="list-style-type: none"> 1.. E. Balagurusamy; <i>Programming in C, Third Edition, Tata McGraw Hill.</i> 2.K. R.Venugopal, Rajkumar B., T.Ravishankar; <i>Mastering C, Tata McGraw Hill.</i> 3..A.R.Venugopal, Rajkumar, T. Ravishanker “Mastering C++”, TMH, 1997. 4.R. Lafore, “Object Oriented Programming using C++”, BPB Publications, 2004. 5.Schildt Herbert, “C++ Programming”, 2nd Edition, Wiley DreamTech. <p>REFERENCE BOOKS:</p> <ol style="list-style-type: none"> 1. Dennis Ritchie; <i>C Programming Language, Pearson Education Asia.</i> 2.D . Parasons, “Object Oriented Programming with C++”, BPB Publication, 1999. 3.Steven C. Lawlor, “The Art of Programming Computer Science with C++”, Vikas Publication, 2002. 4.Yashwant Kanethkar, “Object Oriented Programming using C++”, BPB, 2004. 		

CS3019: Enterprise Information System

Teaching Scheme

Lectures 3 Hrs/Week

Total Credits 3

Evaluation Scheme

Test 1 15 Marks

Test 2 15 Marks

Teacher Assessment 10 Marks

End-Semester Examination 60 Marks

Total Hours required for this course: 45 Hours.

Prerequisites: NIL

Course Description:

This course describes importance of information management, various strategies to manage information for an Enterprise. This course also describes methods for defining, describing and specifying various processes and their execution and testing techniques.

Course Objectives:

- Discuss the terminologies of Information Management System.
- Demonstrate Information Management System for Enterprises.
- Develop solutions for designing IMS.
- Discuss the techniques to analyze , test IMS.

Course Outcomes:

After completion of this course students will be able to:

CO1: Describe an Information Management System.(K1)

CO2: Illustrate strategies to gather information, analyze it and specify requirements for a system.(K2)

CO3: Construct & evaluate solutions for decided Goal and construct DFD's.(K3)

CO4: Optimize the process via decision table by correcting errors and eliminating redundancy.(K3)

CO5: List & Explain various standards for security of information system. (K1)

Detailed Syllabus

UNIT 1 Information and Management

Types of information, why do we need a computer based information system? Management structure, Management and information requirements, qualities of information.

Examples of Information Systems

Various functions in organizations, Information processing for a store- An overview, Varieties of information systems.

Information Systems Analysis & Design Overview:

Overview of design of an information system. The role and tasks of a systems analysts, Attributes of a systems analyst, Tools used by system analyst, System Development Life Cycle

Unit 2 Information Gathering

Strategy to gather information, Information sources, Methods of searching for information, Interviewing techniques, Questionnaires, Other methods of information search, Case example-Hostel information system.

System Requirements Specification:

System requirements specification: Example, Data dictionary, Steps in Systems Analysis, Modularizing requirements specifications, Conclusions.

Unit 3 Feasibility Analysis, Data flow diagrams:

Deciding on project goals, Examining alternative solutions, Evaluating proposed solution, Cost-benefit analysis, Payback period, Feasibility report, System proposal. Symbols used in DFD's Describing a system with a DFD, Good conventions in developing DFDs Leveling of DFDs, Logical and Physical DFDs. Process Specifications - Process specification methods, structured English Some examples of process specification.

Unit 4 Decision Making

Decision table terminology and development, Extended entry decision tables, Establishing the logical correctness of decision tables, Use of Karnaugh maps to detect logical errors in decision tables, Eliminating redundant specifications.

Unit 5 Control, audit and security of information systems

Review of following standards – CMM, ISO 17799, ISO 27001, BS 7799

TEXT BOOKS

1. Kenneth C. Laudon, Jane P. Laudon, " Management Information Systems ", 9th Ed. Pearson

Mapping of Course outcome with Program Outcomes

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
			M					M				M
CO1			M									
CO2			H									
CO3			H									
CO4			H									L
CO5								H				

H – High M – Medium L - Low

Teacher's Assessment: Teachers Assessment of 20 marks is based on one of the / or combination of few of following

- 1) Question answer based Theoretical Assignment
- 2) “ Think More Write Less” Based (observation based) Assignment
- 3) Power point presentation of Topic which is related but out of syllabus
- 4) Class room Question & answer
- 5) Overall approach towards learning, creativity.

Assessment Pattern

Assessment Pattern Level No.	Knowledge Level	Test	Teachers Assessment/ Assignment	End Semester Examination
K1	Remember	10	05	25
K2	Understand	10	00	20
K3	Apply	00	15	15
K4	Analyze	00	00	00
K5	Evaluate	00	00	00
K6	Create	00	00	00
Total Marks 100		20	20	60

Assessment table

Assessment Tool	K1	K2	K3	K3	K1
	C01	C02	C03	CO4	CO5
Class Test (20 Marks)	10	10	00	00	00
Teachers Assessment (20 Marks)	00	00	05	10	05
ESE Assessment (60 Marks)	15	20	10	05	10

Special Instructions if any: Nil

Designed by

CS3020: Advance C & C++ Programming

Teaching Scheme		Evaluation Scheme	
Lectures	3 Hrs/Week	Test 1	15 Marks
		Test 2	15 Marks
		Teacher Assessment	10 Marks
Total Credits	3	End-Semester Examination	60 Marks

Total Hours required for this course: 60 Hours.

Course Description: One important practical objective for this course is to help learn advanced C & the Object Oriented programming language concepts. This course introduces advance skills in C & C++. C++ is a superset of the C language. It was designed with a bias toward system programming and embedded, resource-constrained and large systems, with performance, efficiency and flexibility of use as its design highlights

Course Objectives:

- To introduce concept of pointers in C
- To understand concept of Object Oriented Paradigm.
- To discuss when and how to use the appropriate concepts available in the C++ language.
- To discuss concept of File and how to Handle various exceptions.
- To elaborate & execute simple and complex C++ programs by using different C++ features.

Course Outcomes:

After completion of this course students will be able to:

CO1: Apply the concept of pointers and functions for problem solving. K3

CO2: Describe general Principals of Object Oriented Paradigm like Abstraction, Encapsulation, Inheritance, Polymorphism. K1

CO3 : Demonstrate how these principles are implemented in the C++ programming language.K3

CO4 : Apply the concept of Constructor, Destructor, Friend Function, Dynamic Memory Allocation. K2

CO5: Apply the concept of Files and Exception Handling. K2

Detailed Syllabus:

UNIT 1	Pointers in C- Pointer as a variable, Pointer to array, Pointers and String , Pointers to Functions, Pointers and Structures.	
UNIT 2	File Operations , Working with Memory, Advanced Preprocessors & Macros,	
UNIT 3	Recursion & Searching & Sorting Techniques	
UNIT 4	Inheritance and Polymorphism: Inheritance, Types of Inheritance, Class hierarchy, derivation – public, private & protected, Aggregation, composition vs classification hierarchies, Polymorphism, Type of Polymorphism – Compile time and runtime, Method polymorphism, Polymorphism by parameter, Operator overloading,	

	Parametric polymorphism, Generic function – template function, function name overloading, Overriding inheritance methods	
UNIT 5	<p>Files and Exception Handling: Persistent objects, Streams and files, Namespaces, Exception handling, Generic Classes</p> <p>Standard Template Library: Standard Template Library, Overview of Standard Template Library, Containers, Algorithms, Iterators, Other STL Elements, The Container Classes, General Theory of Operation, Vectors.</p>	
<p>TEXT BOOKS:</p> <ol style="list-style-type: none"> 1. E. Balagurusamy; <i>Programming in C, Third Edition, Tata McGraw Hill.</i> 2.K. R.Venugopal, Rajkumar B., T.Ravishankar; <i>Mastering C, Tata McGraw Hill.</i> 3..A.R.Venugopal, Rajkumar, T. Ravishanker “Mastering C++”, TMH, 1997. 4.R. Lafore, “Object Oriented Programming using C++”, BPB Publications, 2004. 5.Schildt Herbert, “C++ Programming”, 2nd Edition, Wiley DreamTech. <p>REFERENCE BOOKS:</p> <ol style="list-style-type: none"> 1. Dennis Ritchie; <i>C Programming Language, Pearson Education Asia.</i> 2.D . Parasons, “Object Oriented Programming with C++”, BPB Publication, 1999. 3.Steven C. Lawlor, “The Art of Programming Computer Science with C++”, Vikas Publication, 2002. 4.Yashwant Kanethkar, “Object Oriented Programming using C++”, BPB, 2004. 		

CS 4004 : Java Programming

Teaching Scheme

Lectures 3 Hrs/Week

Total Credits 3

Evaluation Scheme

Test 1 15 Marks

Test 2 15 Marks

ESE 60 Marks

Total Hours required for this course: 30 Hours.

Prerequisites: CS3020: Adv C & C++ Programming

Course Outcome:

After completion of this course student will be able to

CO1: Write and resolve programming problems using Java Language

CO2: Build Java Application and Java Applet, Java Servlet

CO3: Identify Java standard libraries and classes

CO4: Understand and utilize Java Graphical User Interface in the program writing.

CO5: Develop and write Advanced Object Oriented Java Programs.

Syllabus

- UNIT-1 Introduction to Java:** History and evolution of Java, Java features, Java vs other popular languages, Java programming environment, Installing Java, Exploring the IDE, JVM, command line arguments, Bytecodes And The Java Virtual Machine, Application And Applets, Classes And Objects, The Java Class Libraries, The Java Development Kit (Jdk), Identifiers, Keywords & Types–Variables And Assignments, Strings And Characters, Arithmetic Operators And Expressions, Type Conversion and Casting, Comments, Arrays–One-Dimensional Arrays, Multidimensional Arrays; arithmetic operators, bit wise operators, relational, Boolean expressions, statements and blocks, control flow statements selection, iteration and jump statements
- UNIT-2 Java Fundamentals and Classes:** Objects and classes, declaring objects, constructors, The General Form Of A Class, Creating Simple Classes, Method Overloading, Adding Constructors, The This Keyword, Instance Variables And Methods, Static Variables And Methods, Local Variables And Variable Scope, Argument Passing, Introduction to Inner Classes **Inheritance**–Subclasses, Inheritance And Variables, Method Overriding, Inheritance And Methods, inheritance And Constructors, Class Modifiers, Variable Modifiers, Constructor Modifiers, Method Modifiers, Interface And Packages, Interfaces, Interface References, Interface Inheritance, The Instance Of Operator, Packages, Classpath, The Import Statement, Access Control And Packages, Exception Handling, Binary I/O, file handling
- UNIT-3 The Collection Framework in Java:** Collection Class, Array List & linked list Classes, Inserting elements, HashSet and TreeSet Classes. Algorithm Support to Collection Classes.
J2EE: Introduction to Java Enterprise Edition 6, Need for JEE 6, Advantages of JEE 6,

Types of Enterprise Architecture, JEE6 Best Practices, Introduction to Eclipse and its Integrated Development Environment

UNIT-4 Networking in Java: Java.Net Package, Socket Fundamentals and Sockets in Java, **Java Database Connectivity (JDBC):** Understanding JDBC Classes, Performing CRUD (create, read, update and delete) Operations, Joining, Manipulating Databases with JDBC, Transaction Processing, Stored Procedures

Remote Method Invocation [RMI] :

Introduction To Distributed Computing, RPC, Client Side And Server Side Proxies, Introduction To RMI, Stubs And Skeletons, The Process Of Creating A Simple RMI Application, Callbacks, Bootstrap Server, RMI With JDBC, RMI Packages

UNIT-5 Servlets: Servlet Overview and Architecture, Introduction to Tomcat 7 Servlet container, Interface Servlet and the Servlet Life Cycle, Handling HTTP get Requests, Handling HTTP post Requests, Redirecting Requests to Other Resources

Java Server Pages (JSP): Introduction, Java Server Pages Overview, A First Java Server Page Example, Implicit Objects, Scripting, Standard Actions, Directives, Custom Tag Libraries

AJAX: Introduction, Understanding Synchronous vs Asynchronous, Technologies, Examples, Operations, How AJAX works?

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		H			H				H			
CO2		H			M				H			
CO3		H			M				H			
CO4		H			H				H			
CO5		H			H				H			

H – High M – Medium L – Low

Suggestions if any:

Designed By:

CS4005: Internet of Things			
Teaching Scheme		Evaluation Scheme	
Lectures	3 Hrs/Week	Test 1	15 Marks
		Test 2	15 Marks
		Teacher Assessment	10 Marks
Total Credits	3	End-Semester Examination	60 Marks
<p>Course Educational Objectives:</p> <ol style="list-style-type: none"> 1. Describe IoT and its applications 2. Understanding various IoT Platforms 3. Learn Python language 4. Understand Technology and Protocols and build apps using Raspberry Pi 5. Understand Threats and Apply security to IOT Apps 			
<p>Course Outcomes Expected: After Completing the course student will be able to</p> <ol style="list-style-type: none"> 1. Identify applicability of IoT in given scenario 2. Install and Work on IoT platform 3. Write Programs using Python Language 4. Write programs for Raspberry Pi 5. Secure their IoT App 			
UNIT 1	<p>Unit- 1: What Is the Internet of Things (IoT) Introduction to IOT, Current technological trends and near future prospects, M2M communication and automation history, General introduction to Arduino, Raspberry Pi and smartWIFI boards and its Sensors,</p> <p>Understanding IOT Ecosystem What is IOT application? What are basic elements / building blocks of IOT app? How are these blocks connected together? The systematic method to design IOT application, Architecture of IOT Ecosystem</p>		
UNIT 2	<p>Unit- 2 IOT Platforms Software's, programs and stacks required, preliminary installations, Installation of various packages necessary for project and list of tools. Understanding MQTT Protocol Basics How it works, Broker and client terminologies, Publisher and subscriber model</p>		
UNIT 3	<p>Unit- 3 Introduction to Python: History, Features, Setup & Installation, Basic Syntax, Data Types, Arithmetic Operators, Conditional Operators, Looping, Control Structures, Functions, Exception Handling</p>		
UNIT 4	<p>Unit- 4 Technology and Protocols NFC and RFID, Low-Energy Bluetooth, Low-Energy Wireless, Radio Protocols, LTE-A, WiFi-Direct, BUILDING IOT WITH RASPBERRY PI</p> <p>Physical device, Raspberry Pi Interfaces, Programming, APIs / Packages, Web services</p>		
UNIT 5	<p>Unit- 5 Securing IoT Apps- Introduction to Wireless Hacking, Security Model and Threat Taxonomy for Internet of Things (IoT), Privacy Issues in Smart Devices, Introduction to Lightweight Symmetric Cryptosystem, Public Key Cryptography for IoT</p>		
<p>TEXT BOOKS:</p>			

HS3007: Psychology			
Teaching Scheme		Evaluation Scheme	
Lectures	2 Hrs/Week	Teacher Assessment	20 Marks
Total Credits	2	End-Semester Examination	30 Marks
Course Outcomes Expected: After Completing the course student will be able to			
Unit 1	Psychology of Health Understanding stress and its various causes. Stress and psychologically-oriented and physically-manifested disorders [Psychosomatic disorders] Manic depressive tendencies, socialization problems, eating disorders. Depression and other related psychological states that are also manifest in the technological/industrial environment. Stress and adjustment : Occupational, social, marital, sexual and environmental aspects. Technology and subjective well-being (SWB)		
UNIT 2	Community Psychology Concept of community and their implications for community psychology. Community processes and orientations toward change. Examinations of the models; the mental health model; the organizational model; the social action model; the ecological model. Implications for a psychology of the community: the study of community life, interaction strategies; implications for manpower and training; family therapy and the community; crisis intervention; advocacy and community psychology		
Unit 3	Psychological Factors in Work Design Approaches to work design. Historical perspective. Human information processing, Natural and man-made environment effect, psychology of work. The living environments, physical features, psychological dimensions of work. Job enrichment, quality of working life. Future of work designs.		
<p>TEXT BOOKS:</p> <p>Andrew W. Baum, Jerome E. Singer & Tracey A. Revenson. Handbook of Health Psychology. Lawrence Erlbaum Associates. 2001.</p> <p>Edward P. Sarafino. Health Psychology: Biopsychosocial Interactions. 4th Edition. John Wiley and Sons. 2001.</p> <p>Linda Brannon & Jess Feist. Health Psychology ♦ An Introduction to Health and Behaviour. 4th Ed. Wadsworth. 1999.</p> <p>Virginia Ann Price. Type-A Behaviour Pattern. A model for Research and Practice. Academic Press. 1982.</p>			