Silver Oak College of Engineering and Technology
Information Technology Department
Mid Semester 1 Syllabus (Summer-2019)

6th IT

Subject Code	Subject Name	Syllabus(According to GTU)
2160711	**.NET TECHNOLOGY**	**Unit 1: Introduction to .NET Framework.** NET framework, MSIL, CLR, CLS, CTS, Namespaces, Assemblies The Common Language Implementation, Assemblies, Garbage Collection, The End to DLL Hell - Managed Execution. **Unit 2 : C# - The Basics and Console Applications in C#.** Name Spaces - Constructor and Destructors, Function Overloading & Inheritance, Operator Overloading, Modifiers - Property and Indexers , Attributes & Reflection API, When to use Console Applications - Generating Console Output, Processing Console Input. **Unit 8 : ASP .NET.** ASP.NET: Introduction to ASP.NET, Working with Web and HTML Controls, Using Rich Server Controls, Login controls, Overview of ASP.NET Validation Controls, Using the Simple Validations, Using the Complex Validators Accessing Data using ADO.NET, Using the Complex Validators Accessing Data using ADO.NET, Configuration Overview. **Unit 9 : Themes and Master Pages.** Creating a Consistent Web Site, ASP.NET 2.0 Themes - Master Pages, Displaying Data with the GridView Control Introducing the GridView Control, Filter Data in the GridView Control, Allow Users to Select from a DropDownList in the Grid, Add a Hyperlink to the Grid, Deleting a Row and Handling Errors.
2160701	**SOFTWARE ENGINEERING**	**Unit 1: Introduction to Software and Software Engineering.** The Evolving Role of Software, Software: A Crisis on the Horizon and Software Myths, Software Engineering: A Layered Technology, Software Process Models, The Linear Sequential Model, The Prototyping Model, The RAD Model, Evolutionary Process Models, Agile Process Model, Component-Based Development, Process, Product and Process. **Unit 2: Agile Development.** Agility and Agile Process model, Extreme Programming, Other process models of Agile Development and Tools. **Unit 4: Requirement Analysis and Specification.** Understanding the Requirement, Requirement Modeling, Requirement Specification (SRS), Requirement Analysis and Requirement Elicitation, Requirement Engineering. **Unit 5: Software Design.** Design Concepts and Design Principal, Architectural Design, Component Level Design (Function Oriented Design).
2160707	**ADVANCE JAVA**	**Unit 1: Java Networking.** Network Basics and Socket overview, TCP/IP client sockets, URL, TCP/IP server sockets, Datagrams, java.net package Socket, ServerSocket, InetAddress, URL, URL Connection.

		Unit 2: JDBC Programming. The JDBC Connectivity Model, Database Programming: Connecting to the Database, Creating a SQL Query, Getting the Results, Updating Database Data, Error Checking, and the SQLException Class, The SQLWarning Class, The Statement Interface, PreparedStatement, CallableStatement The ResultSet Interface, Updatable Result Sets, JDBC Types, Executing SQL Queries, ResultSetMetaData, Executing SQL Updates, Transaction Management. **Unit 3: Servlet API and Overview.** Servlet Model: Overview of Servlet, Servlet Life Cycle, HTTP Methods Structure and Deployment descriptor. **Unit 4: Java Server Pages.** JSP Overview: The Problem with Servlets, Life Cycle of JSP Page, JSP Processing, JSP Application Design with MVC, Setting Up the JSP Environment, JSP Directives, JSP Action, JSP Implicit Objects.
2161603	**DATA COMPRESSION AND DATA RETRIVAL**	**Unit 1: Compression Techniques.** Lossless Compression , Lossy Compression,Measures of Performance U**nit 2: Mathematical Preliminaries for Lossless Compression Models.** Physical Models, Probability Models, Markov Models, Composite Source Model, Coding, Uniquely Decodable Codes, Prefix Codes, Algorithmic Information Theory, Minimum Description Length Principle. **Unit 3: Huffman Coding.** The Huffman Coding Algorithm 41, Minimum Variance Huffman Codes, Adaptive Huffman Coding,Update Procedure, Encoding Procedure, Decoding Procedure, Golomb Codes, Rice Codes, Tunstall Codes Applications of Huffman Coding-Lossless Image Compression, Text Compression, Audio Compression.
2160708	**WEB TECHNOLOGY**	**Unit 1: Introduction.** Concept of WWW, Internet and WWW, HTTP Protocol : Request and Response, Web browser and Web servers, Features of Web 2.0. **Unit 2: Web Design.** Concepts of effective web design, Web design issues including Browser, Bandwidth and Cache, Display resolution, Look and Feel of the Website, Page Layout and linking, User centric design, Sitemap, Planning and publishing website, Designing effective navigation. **Unit 3: HTML.** Basics of HTML, formatting and fonts, commenting code, color, hyperlink, lists, tables, images, forms, XHTML, Meta tags, Character entities, frames and frame sets, Browser architecture and Web site structure. Overview and features of HTML5. **Unit 7: PHP.** Introduction and basic syntax of PHP, decision and looping with examples, PHP and HTML, Arrays, Functions.

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4th IT

Subject Code	Subject Name	Syllabus(According to GTU)
2140702	**OPERATING SYSTEM**	**Unit 1:Introduction:** Basics of Operating Systems: Definition – Generations of Operating systems – Types of Operating Systems, OS Service, System Calls, OS structure: Layered, Monolithic, Microkernel Operating Systems – Concept of Virtual Machine **Unit 2:Process Management** Processes: Definition , Process Relationship , Process states , Process State transitions , Process Control Block ,Context switching – Threads – Concept of multithreads , Benefits of threads – Types of threads **Process Scheduling:** Definition , Scheduling objectives ,Types of Schedulers ,Scheduling criteria : CPU utilization, Throughput, Turnaround Time, Waiting Time, Response Time (Definition only) , Scheduling algorithms : Pre emptive and Non , pre emptive , FCFS – SJF – RR , Multiprocessor scheduling : Types , Performance evaluation of the scheduling. **Unit 3: Interprocess Communication** Race Conditions, Critical Section, Mutual Exclusion.
2140705	**OBJECT ORIENTED PROGRAMMING WITH C++**	**Unit 1 Concepts of OOP :** Introduction OOP, Procedural Vs. Object Oriented Programming, Principles of OOP, Benefits and applications of OOP **Unit 2 C++ Basics:** Overview, Program structure, namespace, identifiers, variables, constants, enum, operators, typecasting, control structures **Unit 3 C++ Functions :** Simple functions, Call and Return by reference,Inline functions, Macro Vs. Inline functions, Overloading of functions, default arguments, friend functions, virtual functions. **Unit 4 Objects and Classes :** Basics of object and class in C++, Private and public members, static data and function members, constructors and their types, destructors, operator overloading, type conversion.

2140706	**NUMERICAL & STATISTICAL METHODS FOR COMPUTER ENGINEERING**	**Unit-1** Mathematical modeling and engineering problem Solving. Approximations and errors. Significant figures, accuracy and precision, Errors, round-off and truncation errors, error propagation. **Unit-2** Roots of Equations: Mathematical background, Bisection, Regula Falsi, NR method, Secant, Successive approximation method, Budan's Theorem, Bristow's method, case studies. **Unit-3** Systems of linear algebraic equations: Mathematical background, Gauss elimination; pitfalls and techniques for improvement, matrix inversion and Gauss-Seidel methods, ill- conditional Equations. **Unit-4** Interpolation:Interpolation with equal Intervals:Newton forward, Newton Backward , Interpolation with unequal Intervals: Lagrange's Interpolation, Newton Divided Difference Interpolation formulae.
2140707	**COMPUTER ORGANIZATION**	**Unit 1 : Computer Data Representation :** Basic computer data types, Complements, Fixed point representation,Register Transfer and Micro-operations:Floating point representation, Register Transfer language, RegisterTransfer, Bus and Memory Transfers (Tree-State Bus Buffers,Memory Transfer), Arithmetic Micro-Operations, Logic Micro-Operations, Shift Micro-Operations, Arithmetic logical shift unit. **Unit 2 Basic Computer Organization and Design:** Instruction codes, Computer registers, computer instructions, Timingand Control, Instruction cycle, Memory-Reference Instructions, Input-output and interrupt, Complete computer description, Design of Basic computer, design of Accumulator Unit. **Unit 3 Programming The Basic Computer:** Introduction, Machine Language, Assembly Language, assembler, Program loops, Programming Arithmetic and logic operations,subroutines, I-O Programming. **Unit 4 Micro programmed Control:** Control Memory, Address sequencing, Micro program Example, design of control Unit.
2140709	**COMPUTER NETWORK**	**Unit 1 Introduction to computer networks and Internet :** Understanding of network and Internet, The network edge, The network core, Understanding of Delay, Loss and Throughput in the packet-switching network, protocols layers and their service model, History of the computer network. **Unit 2 Application Layer:** Principles of computer applications, Web and HTTP **Unit 3 Transport Layer:** Introduction and transport layer services, Multiplexing and Demultiplexing, Connectionless transport (UDP)