

Silver Oak College of Engineering and Technology
Computer Engineering Department
Mid Semester 1 Syllabus, A. Y. 2018-19
4th CE

Subject Code	Subject Name	Syllabus (As Per GTU)	Subject Co-ordinators
2140702	Operating System	<p>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.</p> <p>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</p> <p>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.</p> <p>Unit 3: Interprocess Communication: Race Conditions, Critical Section, Mutual Exclusion</p>	Prof. Dhara Jani
2140705	Object Oriented Programming With C++	<p>Unit 1-Concepts of OOP : Introduction OOP, Procedural Vs. Object Oriented Programming, Principles of OOP, Benefits and applications of OOP</p> <p>Unit 2-C++ Basics : Overview, Program structure, namespace, identifiers, variables, constants, enum, operators, typecasting, control structures</p> <p>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</p> <p>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</p>	Prof. Hemal Patel
2140706	Numerical and Statistical Methods for Computer Engineering	<p>Unit 1(Mathematical modeling and engineering problem Solving. Approximations and errors. Significant figures, accuracy and precision, Errors, round-off and truncation errors, error propagation.)</p> <p>Unit 2(Roots of Equations: Mathematical background, Bisection, Regula Falsi, NR method, Secant, Successive approximation method, Budan’s Theorem, Bristow’s method, case studies.)</p> <p>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.)</p> <p>Unit 4(Interpolation:Interpolation with equal Intervals:Newton forward, Newton Backward , Interpolation with unequal Intervals: Lagrange’s Interpolation, Newton Divided Difference Interpolation formulae)</p>	Prof. Sheetal Patel
2140707	Computer Organization	<p>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.</p> <p>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.</p> <p>Unit 3 Programming The Basic Computer: Introduction, Machine Language, Assembly Language, assembler, Program loops, Programming Arithmetic and logic operations,subroutines, I-O Programming.</p> <p>Unit 4 Micro programmed Control: Control Memory, Address sequencing, Micro program Example, design of control Unit</p>	Prof. Stebin Sebastian
2140709	Computer Networks	<p>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</p> <p>Unit-2 Application Layer: Principles of computer applications, Web and HTTP</p> <p>Unit-3 Transport Layer: Introduction and transport layer services, Multiplexing and Demultiplexing, Connection less transport (UDP)</p>	Prof. Ruchita Macwan