

Lesson Plans 5th Sem Computer Engg.

Lesson Plan

Name of faculty : Narender Kumar
Discipline : Computer Engineering
Semester : 5th
Subject : Cloud Computing

| Week | Theory | | Practical | |
|-----------------|------------------|---|---------------|--|
| | Lecture day | Topic (including assignment / test) | Practical day | Topic |
| 1st | 1st | Evolution of Cloud Computing | | Introduction to Cloud Vendors: Amazon, Microsoft, IBM |
| | 2nd | Cloud Computing Overview | | |
| | 3rd | Cloud Computing Overview | | |
| 2 nd | 4 th | Characteristics, | | Introduction to Cloud Vendors: Amazon, Microsoft, IBM |
| | 5 th | Applications, | | |
| | 6 th | Benefits, Challenges | | |
| 3rd | 7 th | Cloud Computing Service Models: Infrastructure as a Service | | Setting up Virtualization using Virtualbox/VMWare Hypervisor |
| | 8 th | Platform as a Service, Software as a Service | | |
| | 9 th | Cloud Computing Deployment Models: Private Cloud | | |
| 4 th | 10 th | Public Cloud | | Setting up Virtualization using Virtualbox/VMWare Hypervisor |
| | 11 th | Community Cloud, Hybrid Cloud | | |
| | 12 th | Major Cloud Service providers | | |
| 5 th | 13 th | Overview of SLA | | Viva |
| | 14 th | Types of SLA | | |
| | 15 th | SLA Life Cycle | | |
| 6 th | 16 th | SLA Management Process | | Introduction to Own Cloud |
| | 17 th | Overview of Virtualization | | |
| | 18 th | Overview of Virtualization | | |
| 7 th | 19 th | Types of Virtualization | | Introduction to Own Cloud |

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| | 20 th | Types of Virtualization | | |
| | 21 st | Types of Virtualization | | |
| 8 th | 22 nd | Benefits of Virtualization | | Installation and configuration of OwnCloud software for SaaS |
| | 23 rd | Hypervisors | | |
| | 24 th | Hypervisors | | |
| 9 th | 25 th | Cloud Security | | Installation and configuration of OwnCloud software for SaaS |
| | 26 th | Infrastructure Security | | |
| | 27 th | Data Security | | |
| 10 th | 28 th | Data Security Issues | | Viva |
| | 29 th | Privacy Issues | | |
| | 30 th | Legal Issues in Cloud Computing | | |
| 11 th | 31 st | Cloud Storage | | Accessing Microsoft AZURE cloud-services |
| | 32 nd | Overview | | |
| | 33 rd | Storage as a Service | | |
| 12 th | 34 th | Benefits | | Accessing Microsoft AZURE cloud-services |
| | 35 th | Challenges | | |
| | 36 th | Storage Area Networks (SANs) | | |
| 13 th | 37 th | Scheduling in Cloud | | Cloud Simulation Software Introduction: CloudSim |
| | 38 th | Overview of Scheduling problem | | |
| | 39 th | Different types of scheduling | | |
| 14 th | 40 th | Different types of scheduling | | Cloud Simulation Software Introduction: CloudSim |
| | 41 st | Scheduling for independent tasks | | |
| | 42 nd | Scheduling for independent tasks | | |
| 15 th | 43 rd | Scheduling for dependent tasks | | Viva |
| | 44 th | Scheduling for dependent tasks | | |
| | 45 th | Static vs. Dynamic scheduling | | |

Lesson Plan

Name of the Faculty : Mrs. Seema Ahlawat

Discipline : Computer Engg.

Semester : 5th

Subject : Computer Network

Lesson Plan Duration : 14 weeks

Work Load (Lecture / Practical) per week (in hours): Lectures-03, Practical-03

| Week | Theory | | Topic |
|-----------------|------------------|---|--|
| | Lecture day | Topic (including assignment / test) | |
| 1 st | 1 st | Networks Basics | Recognize the physical topology and cabling (coaxial, OFC, UTP, STP) of a network. |
| | 2 nd | Concept of network ,Models of network computing | |
| | 3 rd | Networking models | |
| 2 nd | 4 th | Peer-to –peer Network | Recognition and use of various types of connectors RJ-45, RJ-11,BNC and SCST |
| | 5 th | Server Client Network Network Services | |
| | 6 th | Concept of switching Switching Techniques | |
| 3 rd | 7 th | OSI Model | Recognition of network devices (Switches, Hub, Routers of access points for Wi-Fi |
| | 8 th | OSI Reference Model | |
| | 9 th | OSI Reference Model | |
| 4 th | 10 th | OSI Reference Model | |
| | 11 th | OSI Reference Model | |
| | 12 th | OSI Reference Model | |
| 5 th | 13 th | OSI Reference Model | Making of cross cable and straight cable |
| | 14 th | Function of various layers in OSI Reference Model | |
| | 15 th | Function of various layers in OSI Reference Model | |
| 6 th | 16 th | - Function of various layers in OSI Reference Model | Install and configure a network interface card in a workstation |
| | 17 th | - Function of various layers in OSI Reference Model | |
| | 18 th | - Function of various layers in OSI Reference Model | |

| Week | Theory | | Topic | |
|------------------|------------------|--|---|--|
| | Lecture day | Topic (including assignment / test) | | |
| | | | Identify the IP address of a workstation and the class of the address and configure the IP Address on a workstation | |
| 7 th | 19 th | Introduction to TCP/IP | Managing user accounts in windows and LINUX | |
| | 20 th | Concept of physical and logical addressing - IPV4 addressers- Address space, . | | |
| | 21 st | Notations, Classful Addressing, Classless Addressing, Network Address Translation | | |
| 8 th | 22 nd | - Different classes of IP addressing, special IP address | | |
| | 23 rd | - Different classes of IP addressing, special IP address | | |
| | 24 th | - Sub netting and super netting | | |
| 9 th | 25 th | - Sub netting and super netting | | |
| | 26 th | - Loop back concept - IPV4 and IPV6 packet Format | | |
| | 27 th | - Loop back concept - IPV4 and IPV6 packet Format | | |
| 10 th | 28 th | Network Architecture | | Study and Demonstration of sub netting of IP address |
| | 29 th | Ethernet Specification and Standardization: | | |
| | 30 th | 10 Mbps (Traditional Ethernet), | | |
| 11 th | 31 st | 10 Mbps (Fast Ethernet) and 1000 Mbps (Gigabit Ethernet), Introduction to Media) | Use of Netstat and its options. | |
| | 32 nd | Connectivity (Leased lines, ISDN, PSTN, RF, | | |
| | 33 rd | DSL, VSAT, Optical and IPLC | | |
| 12 th | 34 th | Connectivity devices | Connectivity troubleshooting using PING, IPCONFIG, IFCONFIG | |
| | 35 th | Network connectivity Devices 100 - NICs - Hubs, bridges - Repeaters, switches - Routers - Gateways | | |
| | 36 th | Multiplexers - Modems | | |

| Week | Theory | | |
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| | Lecture day | Topic (including assignment / test) | Topic |
| 13 th | 37 th | Network Trouble Shooting Techniques | Installation of Network Operating System(NOS) |
| | 38 th | Trouble Shooting process - Trouble Shooting Tools:, , | |
| | 39 th | PING,IPCONFIG, IFCONFIG, NETSTAT | |
| 14 th | 40 th | TRACEROOT, Wiresharp/ Dsniffer/ Pcop | Visit to nearby industry for latest networking techniques |
| | 41 st | IEEE 802.11- Architecture | |
| | 42 nd | Bluetooth- Architecture | |
| 15 th | Revision | | |

Lesson Plan

Name of faculty : Narender Kumar
Discipline : Computer Engineering
Semester : 5th
Subject : Computer Programming using Python

| Week | Theory | | Practical | |
|------|-------------|--|---------------|--|
| | Lecture day | Topic (including assignment / test) | Practical day | Topic |
| 1st | 1st | Brief History of Python, Python Versions, Installing Python, Environment Variables | | Getting started with Python and IDLE in interactive and batch modes |
| | 2nd | Executing Python from the Command Line, IDLE, Editing Python Files, Python Documentation | | |
| | 3rd | Getting Help, Dynamic Types, Python Reserved Words, Naming Conventions | | |
| 2nd | 4th | Basic Syntax, Comments, String Values, String Methods, The format Method | | What do the following string methods do? lower, count, replace |
| | 5th | String Operators, Numeric Data Types, Conversion Functions | | |
| | 6th | Simple Output, Simple Input, The % Method, The print Function | | |
| 3rd | 7th | Indenting Requirements, The if Statement | | Write instructions to perform each of the steps below (a) Create a string containing at least five words and store it in a variable. (b) Print out the string. (c) Convert the string to a list of words using the string split method. |
| | 8th | Relational and Logical Operators, Bit Wise Operators | | |
| | 9th | The while Loop, break and continue, The for Loop | | |
| 4th | 10th | Lists | | (d) Sort the list into reverse alphabetical order using some of the list methods (you might need to use dir(list) or help(list) to find appropriate methods). (e) Print out the sorted, reversed list of words. |
| | 11th | Lists | | |
| | 12th | Tuples | | |
| 5th | 13th | Tuples | | Write a program that determines whether the number is prime. |
| | 14th | Sets | | |
| | 15th | Test_1 | | |
| 6th | 16th | Dictionaries | | Find all numbers which are multiple of 17, but not the multiple of 5, between 2000 |
| | 17th | Sorting Dictionaries | | |

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| | 18 th | Copying Collections | | and 2500? |
| 7 th | 19 th | Introduction, Defining Your Own Functions, Parameters | | Swap two integer numbers using a temporary variable. Repeat the exercise using the code format: a, b = b, a. Verify your results in both the cases. |
| | 20 th | Function Documentation, Keyword and Optional Parameters | | |
| | 21 st | Passing Collections to a Function, Variable Number of Arguments | | |
| 8 th | 22 nd | Scope, Functions - "First Class Citizens", Passing Functions to a Function | | Calculate difference of a number and reverse of it |
| | 23 rd | map, filter, Mapping Functions in a Dictionary | | |
| | 24 th | Lambda, Inner Functions, Closures | | |
| 9 th | 25 th | Modules, Standard Modules – sys, Standard Modules – math | | Print Fibonacci series |
| | 26 th | Standard Modules – time, The dir Function | | |
| | 27 th | Errors, Runtime Errors | | |
| 10 th | 28 th | The Exception Model, Exception Hierarchy | | Find factorial of a given number |
| | 29 th | Handling Multiple Exceptions, Raise, assert | | |
| | 30 th | Test_2 | | |
| 11 th | 31 st | Introduction, Data Streams, Creating Your Own Data Streams, Access Modes | | Find the largest of n numbers, using a user defined function largest(). |
| | 32 nd | Writing Data to a File, Reading Data From a File, Additional File Methods | | |
| | 33 rd | Using Pipes as Data Streams, Handling IO Exceptions | | |
| 12 th | 34 th | Classes in Python | | Write a function myReverse() which receives a string as an input and returns the reverse of the string. |
| | 35 th | Principles of Object Orientation | | |
| | 36 th | Creating Classes, Instance Methods | | |
| 13 th | 37 th | File Organization, Special Methods | | Check if a given string is palindrome or not. |
| | 38 th | Class Variables, Inheritance | | |
| | 39 th | Polymorphism | | |
| 14 th | 40 th | Introduction, Simple Character Matches, Special Characters, Character Classes | | WAP to convert Celsius to Fahrenheit |
| | 41 st | Quantifiers, The Dot Character, Greedy Matches | | |
| | 42 nd | Grouping, Matching at Beginning or End, Match Objects | | |
| 15 th | 43 rd | Substituting, Splitting a String | | WAP for simple calculator |
| | 44 th | Compiling Regular Expressions, Flags | | |
| | 45 th | Test_3 | | |

Lesson Plan

Name of the Faculty : Seema Ahlawat
Discipline : Computer Engineering
Semester : 5th
Subject : SOFTWARE ENGINEERING

Lesson Plan duration : 15 weeks
Work load per week : Lecture – 03

| Week | Theory | |
|-----------------|------------------|---|
| 1 st | 1 st | 1 .Introduction to Software Engineering (6 hrs) Introduction, Programmes v/s Software |
| | 2 nd | Products Emergence of Software Engineering- Early Computer Programming, |
| | 3 rd | High- level Language Programming, Control flow based Design |
| 2 nd | 4 th | Data Structure Oriented Design |
| | 5 th | Object Oriented Design |
| | 6 th | Software Life Cycle Models |
| 3 rd | 7 th | Requirement of Life Cycle Model, Classic Waterfall Model, |
| | 8 th | Prototyping Model, Evolutionary Model |
| | 9 th | Requirement of Life Cycle Model, Classic Waterfall Model, |
| 4 th | 10 th | Prototyping Model, Evolutionary Model |
| | 11 th | Spiral Model |
| | | Comparison of different Life Cycle Models |
| | 12 th | Software Planning |
| 5 th | 13 th | Responsibilities of Software, Project Manager - Metrics for Project Size Estimation- |
| | 14 th | LOC(Lines of Code), Function Point Metric, Project estimation Techniques |
| | 15 th | Using COCOMO Model, Halstead's Software Science |
| 6 th | 16 th | Revision |
| | 17 th | Revision |
| | 18 th | Ist Sessional |
| 7 th | 19 th | Requirement Analysis and Specification |
| | 20 th | Requirement gathering and Analysis |

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| | 21 st | Software Requirement Specifications(SRS) |
| 8 th | 22 nd | Formal Specification Technique |
| | 23 rd | Characteristics of good SRS |
| | 24 th | Software Design and Implementation |
| 9 th | 25 th | Characteristics and features of good Software, Design Cohesion and Coupling |
| | 26 th | Software design Approaches, Function Oriented Design |
| | 27 th | Object Oriented Design, Structured Coding Techniques, Coding Styles, documentation |
| 10 th | 28 th | Software Testing Concept of Testing |
| | 29 th | Verification v/s Validations |
| | 30 st | Unit Testing, Black Box Testing |
| 11 th | 31 nd | revision |
| | 32 rd | Revision |
| | 33 th | 2 nd sessional |
| 12 th | 34 th | White Box Testing |
| | 35 th | Integration testing |
| 13 th | 36 th | System testing |
| | 37 th | Software Quality and Maintenance |
| | 38 th | Introduction to Capability Maturity model, |
| | 39 th | ISO9000, Six Sigma |
| 14 th | 40 st | Configuration Management |
| | 41 nd | revision |
| | 42 rd | revision |
| 15 th | 43 th | 3 rd Sessional |
| | 44 th | revision |
| | 45 th | revision |