PLANNED SYLLABUS COVERAGE (THEORY)

Govt. Polytechnic Kangra (H.P.)	Department: **Computer Engineering**	Subject : **Python Programming**	
	Course : **Diploma**	Duration: **3 Years**	
SYLLABUS COVERAGE	Semester: **6th**	Total Theory Periods: **52 Hrs.**	

SN	Period Nos	Topic	Detailed Contents	Instruction Reference	Additional Study Recommended	Remarks
1	1-6	**Introduction to Python**	Python language – need, features and advantages; Python versions, structure of a typical Python program, code indentation, application areas of Python.	Introduction to Computer Science using Python by Charles Dierbach, Wiley Publishers	Programming in Python 3: A Complete Introduction to the Python Language by Mark Summerfield, Atlantic Publishers and Distributors	
2	7-15	**Basics of Python Language**	Python tokens - identifiers, keywords, operators, delimiters, and literals; variables, naming conventions in Python, Python statements - simple and compound; comments, reading from standard input using input(), writing to standard output using print(), Data types – numbers, strings, tuples, lists, dictionaries, ranges, and sets; mutable and immutable data types, Python numbers: integers, floating-point and complex numbers; numeric literals; String literals - quoted and triple quoted strings, multiline strings, escape sequence, type() function.			
3	16-24	**Python Data Structures**	Sequence types - list, tuple, range, string; dictionary, set, list comprehension, set comprehension, dictionary comprehension. String methods - capitalize(), count(), find(), format(), replace(), lower(), upper(), title(); List methods - count(), index(), append(), insert(), remove(), pop(), reverse(), sort(); Set methods - add(), clear(), remove(), discard(), intersect(), copy(), difference(), union(); Dictionary methods - keys(), values(), pop(), items(), clear().			

4	25-33	**Operators and Expressions**	Arithmetic operators - addition, subtraction, multiplication, division, truncated division, modulus, exponentiation; arithmetic expressions, comparison operators, logical operators, comparison chaining, bitwise operators, operations on sequences - concatenation, repetition, membership testing, indexing, slicing.			
5	34-42	**Flow Control**	if statement and its variants - if, if...else, if...elif...else; loops - while, for; use of else in loops, jump statements - break, continue pass; with statement, exception handling.			
6	43-47	**Modules, Packages and Functions**	Python modules and packages, functions, def statement, parameters, named parameters, default values of parameters, function signatures, variable number of arguments, return statement, lambda expression.			
7	48-52	**Handling Files in Python**	Opening a file, file opening modes, read from a file - read(), readline(); writing to a file – write(), writelines(), truncate(), flush(); navigating in a file - seek(), tell(), use of with statement			

Date: 08/12/21	✓ **Approved/Not Approved**	**HOD Signature:**

Name of the Subject :-Wireless Communication & Mobile Computing
Branch & Sem :- Computer Engg/ 6th Sem

Lecture No.	Unit No.	Unit Name	Sub-Topics	Book(s) to be Referred
1.	1	Introduction to Wireless Communication	Wireless communication and its applications	1.Wireless Communication - Principles & Practice by Theodok S. Rappaport Pearson Education 2.Mobile Computing :- Technology ,Applications & Sevice creation by Asokek Talukdar & Roopa R Yavagal TMA
2.			Advantages and disadvantages of wireless communication, Types of Services : broadcast, paging, celluar telephony, trunking radio, cordless telephony	
3.			WLAN, PAN, adhoc & sensor networks, fixed wireless access; challenges in wireless communication, electromagnetic spectrum	
4.			licensed/unlicensed spectrum bands, ISM band, terrestrial and satellite microwave communication,	
5.			Broadcast radio, infrared and lightwave communication,	
6.			Wireless transmission impairments – attenuation, distortion, noise, interference, pathloss, shadowing and fading	
7.			do	
8.			Revision	
9.	2	Fundamentals of Wireless Communication	Concept of banwidth, analog and digital signals	
10.			Data rate, signal strength	
11.			SNR, RSSI, electromagnetic wave propagarion	
12.			Ground waves, sky waves and line-of-sight propagation; radio waves, microwaves, infrared	
13.			Ground waves, sky waves and line-of-sight propagation; radio waves, microwaves, infrared	
14.			Overview of Propagation Mechanisms: reflection, diffraction and scattering; outdoor and indoor propagation.	
15.			Overview of Propagation Mechanisms: reflection, diffraction and scattering; outdoor and indoor propagation.	
16.			Overview of Propagation Mechanisms: reflection, diffraction and scattering; outdoor and indoor propagation.	
17.			. Revision	
18.			Class Test -1	
19	3	Wireless Communication Systems	Cellular Communication: cellular concept, cellular system architecture, cells, clusters	
20			Cellular Communication: cellular concept, cellular system architecture, cells, clusters	
21.			clusters, frequency reuse, cell splitting, handoff,	
22.			Digital Cellular System : TDMA, ETDM, PCS, CDMA, Global System for Mobile Communication (GSM)	
23.			Digital Cellular System : TDMA, ETDM, PCS, CDMA, Global System for Mobile Communication (GSM)	
24			do	

25.			GSM network : switching system, BSS, operation and support system	
26.			GSM network : switching system, BSS, operation and support system	
27.			Generations of cellular networks and their features (1G – 5G)	
28.			**Revision**	
29.	4	**Wireless LAN Technology and Bluetooth**	Wireless LAN (WLAN), IEEE-802.11)	
30.			WLAN applications, WLAN types	
31.			WLAN applications, WLAN types	
32.			WLAN problems – hidden station and exposed station problems;	
33.			Bluetooth technology, Direct Sequence Spectrum Scheme	
34.			Frequency Hopping Spread Spectrum, Personal Area Networks.	
35.			**Revision**	
36.			**Class Test-II**	
37.	5	**Mobile Computing Introduction**	Mobile computing	
38.			Mobile computing functions,	
39.			Mobile Computing Devices	
40.			Middleware and Gateways	
41.			Mobile computing environment	
42.			Mobile computing environment	
43.			Mobile Computing Applications and services.	
44.			**Revision**	
45.	6	**Mobile Computing Architecture**	Three tier architecture for Mobile Computing	
46.			Design considerations for mobile computing,	
47.			client context manager	
48.			introduction to CC/PP, Policy manager, semantic web,	
49.			security manager, context aware systems	
50.			GPS, Mobile computing through Internet.	
51.			**Revision**	
52.			**House Test**	

Name of the Subject :-Wireless Communication & Mobile Computing
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53.	7	Operating System for Mobile Device	An overview of Android Operating System,	
54.			Architecture	
55.			Features of Android OS.	
56.			**Revision**	

HOD
Computer Engg.

Varun Gupta
Subject Teacher

PLANNED SYLLABUS COVERAGE (Theory)

GP Kangra	Department : Computer Engineering	Subject : Linux Operating System
	Course : Diploma	Duration : 3 Years
SYLLABUS COVERAGE	Total Periods : 56	Theory : 4

S.No.	Period No.	Topic	Detail	Instruction Reference	Additional Study Recommended	Remarks
1.	1-4	Unit I Open Source Software	Open Source Software (OSS), OSS advantages, free software, freeware, free and open source software (FOSS), public domain software, FSF, GPL, LGPL.	Linux: The Complete Reference 6th Edition by Richard Petersen NIIT, Linux Operating Systems, Prentice-Hall Of India Pvt. Limited. The official Ubuntu book by Benjamin Mako Hill et al.		
2.	5-12	Unit II Linux Operating System	History, features, applications, distributions, kernel, desktop environments : GNOME and KDE; architecture, boot loaders, bashshell			Upto 31/03/21
3.	13-22	Unit III Managing Files and Directories	Rules for naming files and directories, FHS, file types, file permissions, Linux file management commands: cat, touch, head, tail, cp, rm, mv, more, less, pwd, mkdir, rmdir, ls, cd, chmod; use of wild card characters, standard input, output and error files; pipes and filters			
4.	23-30	Unit IV Linux Networking	Networking terminology (basic concept only) : TCP/IP, IPv4 and IPv6 addresses, netmask, gateway, DNS, DHCP, ports; Linux networking commands : ifconfig, finger, ping, arp, netstat, host, traceroute, nmap, ssh, telnet, ftp			Upto 30/04/21
5.	31-44	Unit V Linux Administration	User management : users, groups, primary and secondary groups, Linux commands for user management : useradd, usermod, userdel, passwd, groupadd, groupmod, groupdel, groups, chown, chgrp; Disk management : manage disk partitions, format partitions, mount and unmount file systems; package management, configuration files: hosts, fstab, passwd, group, resolv.conf; Linux Servers : Telnet server, SSH server, FTP server, NFS server, proxy server, DHCP server, SAMBA.			Upto 21/05/21

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S.No.	Period No.	Topic	Detail	Instruction Reference	Additional Study Recommended	Remarks
6.	45-56	Unit VI Shell Programming	Linux shells, bash shell script, echo, read, variables : naming rules, readonly variable, unset variables, special variables ($*, $$, $#, $?, $n), environment variables, positional parameters, command substitution, flow control constructs - "if..then..fi" construct, "else" construct, "elif" construct, case, while construct, until, for, break and continue.			

APPROVED	SIGN HOD
Date : 8/3/21	