

B.Sc., Computer Science (Students admitted from 2018-2019 onwards)

SCHEME OF EXAMINATION

Subject Code	Subject	Hrs. of Instruction	Exam Duration (Hrs)	Max Marks			Credits
				CA	CE	Total	
First Semester							
Part I							
18UTALA101/ 18UHILA101/ 18UFRLA101	Tamil-I/ Hindi-I/ French-I	5	3	25	75	100	3
Part II							
18UENLA101	Foundation English-I	5	3	25	75	100	3
Part III							
18UCSM101	Core I: Problem Solving Techniques and C Programming	5	3	25	75	100	4
18UCSM102	Core II: Information Technology	4	3	25	75	100	2
18UMACSA101	Allied I: Algebra and Calculus	5	3	25	75	100	4
18UCSMP101	Core Practical I: Programming in C	2	3	40	60	100	2
18UCSMP102	Core Practical II: Office Package	2	3	40	60	100	2
Part IV							
18UVE101	Value Education I: Yoga	2	3	25	75	100	2
		30				800	22
Second Semester							
Part I							
18UTALA201/ 18UHILA201/ 18UFRLA201	Tamil-II/ Hindi-II/ French-II	5	3	25	75	100	3
Part II							
18UENLA201	Foundation English-II	5	3	25	75	100	3
Part III							
18UCSM201	Core III: Object Oriented Programming with C++	5	3	25	75	100	4
18UCSM202	Core IV: Computer	5	3	25	75	100	4

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	Architecture						
18UMACSA201	Allied II: Numerical Methods	5	3	25	75	100	4
18UCSMP201	Core Practical III: Programming in C++	3	3	40	60	100	2
Part IV							
18UVE201	Value Education II: Environmental Studies	2	3	25	75	100	2
		30				700	22
Third Semester							
Part I							
18UTALA301/ 18UHILA301/ 18UFRLA301	Tamil-III/ Hindi-III/ French-III	5	3	25	75	100	3
Part II							
18UENLA301	Foundation English-III	5	3	25	75	100	3
Part III							
18UCSM301	Core V: Programming in Java	4	3	25	75	100	4
18UCSM302	Core VI: Data Structures	4	3	25	75	100	4
18UMACSA301/ 18UECCSA301	Allied III: Statistical Methods/Digital Electronics and Microprocessor	4	3	25	75	100	4
18UCSMP301	Core Practical IV: Programming in Java	2	3	40	60	100	2
Part IV							
18UCSSBP301	SBC Practical I: Web Designing using HTML, CSS (Internal Evaluation)	2	3	100	-	100	2
	NMEC I	2	3	25	75	100	2

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Non Credit							
18ULS301	Career Competency Skills I	1	-	-	-	-	-
	Add-On Course I	1	3	40	60	100	-
		30				900	24
Fourth Semester							
Part I							
18UTALA401/ 18UHILA401/ 18UFRLA401	Tamil-IV/ Hindi-IV/ French-IV	5	3	25	75	100	3
Part II							
18UENLA401	Foundation English-IV	5	3	25	75	100	3
Part III							
18UCSM401	Core VII: Programming in .NET(VB.NET & ASP.NET)	4	3	25	75	100	4
18UCSM402	Core VIII: Relational Database Management Systems	4	3	25	75	100	4
18UMACSA401/ 18UECSA401	Allied IV: Operations Research/Internet of Things	4	3	25	75	100	4
18UCSMP401	Core Practical V: Programming in .NET	2	3	40	60	100	2
Part IV							
18UCSSBP401	SBC Practical II: JavaScript(Internal Evaluation)	2	3	100	-	100	2
	NMEC II	2	3	25	75	100	2
Non Credit							
18ULS401	Career Competency Skills II	1	-	-	-	-	-
	Add-On Course II	1	3	40	60	100	-
		30				900	24

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Fifth Semester							
Part III							
18UCSM501	Core IX: Data Mining and Warehousing	6	3	25	75	100	4
18UCSM502	Core X: Software Engineering	5	3	25	75	100	4
18UCSM503	Core XI: Operating Systems	5	3	25	75	100	4
	Elective : I	5	3	25	75	100	3
18UCSMP501	Core Practical VI: R-Programming	3	3	40	60	100	3
18UCSMP502	Core Practical VII: Computer Hardware	3	3	40	60	100	3
Part IV							
18UCSSBP501	SBC Practical III: MySQL (Internal Evaluation)	2	3	40	60	100	2
Part V							
18UCSE501	Extension Activity	-	-	-	-	-	2
Non Credit							
18ULS501	Career Competency Skills III	1	-	-	-	-	-
		30				700	25
Sixth Semester							
Part III							
18UCSM601	Core XII: Python Programming	6	3	25	75	100	4
18UCSM602	Core XIII: Computer Networks [Fifth Unit as Self- study]	6	3	25	75	100	4
	Elective II	6	3	25	75	100	3
18UCSMP601	Core Practical VIII: Python Programming	3	3	40	60	100	3
18UCSMP602	Core Practical IX: Computer Networking	3	3	40	60	100	3
18UCSPR601	Project Work	3	3	40	60	100	4
Part IV							
18UCSSBP601	SBC Practical IV:	2	3	40	60	100	2

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	PHP(Internal Evaluation)						
Non Credit							
18ULS601	Career Competency Skills IV	1	-	-	-	-	-
		30				700	23
Grand Total						4700	140

ADD-ON COURSE

The department offers the following two subjects as ADD-ON Course in third and fourth semester.


S.No.	Semester	Subject Code	Subject
1	III	18UCSAC301	DTP
2	IV	18UCSAC401	Animation

ADVANCED LEARNER COURSE

The department offers the following two subjects as Advanced Learners Course in fourth and fifth semesters.

S.No.	Semester	Subject Code	Subject
1	IV	18UCSAL401	Mobile Commerce
2	IV	18UCSAL402	Cyber Security
3	Online Certification Courses		

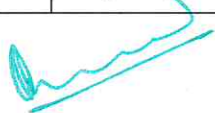
S.No.	Semester	Subject Code	Subject
1	V	18UCSAL501	Software Project Management
2	V	18UCSAL502	Artificial Intelligence and Expert Systems
3	Online Certification Courses		


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18UCSMP102	CORE PRACTICAL II:OFFICE PACKAGE	SEMESTER - I	
COURSE OBJECTIVES:			
The Course aims			
<ul style="list-style-type: none"> To explore the knowledge in office automation tools. To standardize the office routine. 			
Credits: 2		Total Hours: 20	
S.No	PROGRAMS	Hrs	CO
WRITER			
1.	Prepare a word document and do the following: Bold, Underline, Font size, Font style, Line spacing, spell check, Alignments, Header & Footer, page numbering and find & replace.	2	CO1
2.	Create and design Admission/Enquiry forms (shapes, Textboxes, colors, tables).	2	CO2
3.	Prepare an invitation for the college function using mail merge option.	2	CO1
CALC			
4.	Prepare a grade sheet of a student using formula, sorting and filtering, Conditional Formatting, Merge & Center.	2	CO3
5.	Create a pay slip using functions.	2	CO3
6.	Prepare charts to show a company's sales performance report.	2	CO3
7.	Prepare Income and Expenses Statement and apply the options in Data Menu wherever necessary.	2	CO3
IMPRESS			
8.	Creating and formatting slides presentations (template & blank slide)	2	CO4
9.	Creating a Photo Slideshow with captions.	2	CO5
10.	Create a PowerPoint presentation using graphics and animation	2	CO5
WEB REFERENCES:			
1.	http://fccweb.pbworks.com		
2.	http://www.openoffice.org		


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COURSE OUTCOMES (CO):

On successful completion of this course, the student will be able to

CO1	Create personal, academic, and business documents in a professional way.
CO2	Enhance word processing skills using the required tools.
CO3	Understand the basic concepts of spreadsheets and usage of formulae.
CO4	Create and manipulate simple slide shows with outline and notes.
CO5	Improve the quality of output in terms of presentations.



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18UCSM202	CORE IV: COMPUTER ARCHITECTURE	SEMESTER - II	
<p>COURSE OBJECTIVES:</p> <p>The Course aims</p> <ul style="list-style-type: none"> To conceptualize the basics of organization and architectural issues of a digital computer. To understand the working principles of various digital components and design of Digital Computers. 			
Credits: 4		Total Hours: 50	
UNIT	CONTENTS	Hrs	CO
I	Digital Logic Circuits: Digital Computers - Logic Gates-Boolean Algebra - Map Simplification - Combinational Circuits - Flip-Flops. Digital Components: Integrated Circuits - Decoders - Multiplexers - Registers - Shift Registers - Binary Counters.	10	CO1
II	Data Representation: Data Types - Complements - Fixed-Point Representation - Conversion of Fractions - Floating-Point Representation - Other Binary Codes - Error Detection Codes. Register Transfer and Micro operations: Register Transfer Language - Register Transfer - Bus and Memory Transfers - Arithmetic Microoperations - Logic Microoperations - Shift Microoperations - Arithmetic Logic Shift Unit.	10	CO2
III	Central Processing Unit: Introduction - General Register Organization -Stack Organization - Instruction Formats - Addressing Modes - Data Transfer and Manipulation - Program Control -	10	CO3

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	Reduced Instruction Set Computer(RISC):CISC Characteristics - RISC Characteristics.		
IV	Pipeline and Vector Processing: Parallel Processing - Pipelining - Arithmetic Pipeline - Instruction Pipeline -RISC Pipeline - Vector Processing - Array Processors.	10	CO4
V	Input-Output Organization: Peripheral devices - Input-Output Interface - Asynchronous Data Transfer - Modes of Transfer - Priority Interrupt - Direct Memory Access (DMA). Memory organization: Memory Hierarchy - Main Memory - Auxiliary Memory - Associative Memory - Cache Memory - Virtual Memory.	10	CO5

TEXT BOOK:

1. *Morris Mano M. 2017. Computer System Architecture. [Revised Third Edition]. Pearson India Education Services Pvt. Ltd.*

REFERENCE BOOKS:

1. *Navin Kumar. 2005. Computer Organization. [First Edition]. Galgotia Publications Pvt. Ltd.*
2. *Badri Ram. 2012. Fundamentals of Microprocessors and Microcomputers. Dhanpat Rai Publication Pvt. Ltd.*
3. *William Stallings. 2016. Computer Organization and Architecture. [Tenth Edition]. Pearson Education Ltd.*

WEB REFERENCES:

1. <https://www.geeksforgeeks.org/computer-organization-and-architecture-tutorials/>
2. <https://www.studytonight.com/computer-architecture/>
3. <http://www.tutorialsspace.com/computer-architecture-and-organization>



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COURSE OUTCOMES (CO):

After the completion of this course, the students will be able to

CO1	Understand the basic concepts of logic circuits.
CO2	Know the data representation and micro operations
CO3	Evaluate the working principles of CPU.
CO4	Understand pipeline and vector processing concepts.
CO5	Identify Input, Output and memory organization.


MAPPING:

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	M	H
CO2	M	H	M	H	H
CO3	M	M	L	M	M
CO4	M	M	L	M	M
CO5	M	H	M	H	H


H-High; M-Medium; L-Low


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18UCSSBP301	SBC PRACTICAL I:WEB DESIGNING USING HTML,CSS (INTERNAL EVALUATION)	SEMESTER -III	
COURSE OBJECTIVES:			
The course aims			
<ul style="list-style-type: none"> • Demonstrate the competency in the use of HTML tags and its attributes. • Utilize CSS to enhance web pages. 			
Credits: 2		Total Hours: 20	
S.No.	PROGRAMS	Hrs	CO
1.	Create a webpage describing your department using paragraph and list tags.	3	CO1
2.	Create a Table to prepare a class timetable.	3	CO1
3.	Design a webpage for alumni details using Form tags.	2	CO2
4.	Create a webpage with frames and Hyperlinks.	2	CO3
5.	Design a CSS to create menu.	2	CO4
6.	Design a webpage i.e. Bio data using CSS.	2	CO4
7.	Create a web page that displays college information using various (font, color etc.)Style sheets.	3	CO5
8.	Create a web page using following style sheets i. Inline style sheets. ii. Embedded style sheets. iii. External style sheets.	3	CO5
WEB REFERENCES:			
1.	http://www.w3schools.com		
2.	http://developer.mozilla.org		


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COURSE OUTCOMES(CO):

On successful completion of this course, the students will be able to

CO1	Able to create webpage using paragraph, list and table tags.
CO2	Design a web page using forms.
CO3	Able to design web page using frames and hyperlinks.
CO4	Able to design menus using CSS.
CO5	Create a webpage using various style sheets.



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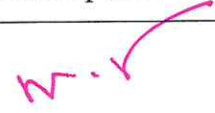


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18UCSSBP401	SBC PRACTICAL II: JAVASCRIPT (INTERNAL EVALUATION)	SEMESTER-IV	
COURSE OBJECTIVES:			
The course aims			
<ul style="list-style-type: none"> To Understand the structure of an HTML document, HTML elements and attributes with JavaScript To explore the knowledge of fundamental concepts of Java Script such as arrays, function, objects, repetition, constructors, error handling and etc. To explore the Program interaction with web pages by JavaScript. 			
Credits: 2		Total Hours: 20	
S.No.	PROGRAMS	Hrs	CO
1.	Finding a Factorial Number Using JavaScript.	3	CO1
2.	Popup Messages Using Event Function in JavaScript	3	CO2
3.	Frames Using Java Script	2	CO1
4.	Creating Forms Using JavaScript	2	CO4
5.	Validating User Input Form using JavaScript	2	CO3
6.	Looping statement through an array using JavaScript	2	CO2
7.	Error Handling in JavaScript	3	CO5
8.	Creating a dynamic Websites using JavaScript	3	CO5
REFERENCE BOOK:			
1.	Programming JavaScript Applications: Robust Web Architecture with Node, HTML5, and Moderns JS Librariesby Eric Elliott		
WEB REFERENCES:			
1.	https://www.javascript.com		
2.	https://www.w3schools.com		
3.	https://www.guru99.com/practical-code-examples-using-javascript.com		


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COURSE OUTCOMES (CO):

After the completion of the course, the student will be able to

CO1	Understand the basic concepts of HTML and JavaScript.
CO2	Implement interactive web pages using HTML and JavaScript.
CO3	Perform online validation in forms.
CO4	Apply a structured approach to identify the needs, interests and functionality of a website.
CO5	Build Dynamic Website using JavaScript.



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M-r

18UCSMP501	CORE PRACTICAL VI:R -PROGRAMMING	SEMESTER - V	
COURSE OBJECTIVES:			
The Course aims			
<ul style="list-style-type: none"> To provide the knowledge of vector based calculation. To develop R programs using looping constructs and R Mathematical functions that can be used for data exploration in R. 			
Credit Points: 3		Total Hours:24	
S. No.	CONTENTS	Hrs	CO
1.	Creating and manipulating a vector.	3	CO1
2.	Generating number series and sequences.	3	CO1
3.	Creating matrix and manipulating matrix.	3	CO2
4.	Comparison of matrix and vectors.	3	CO2
5.	Program on branching statements.	3	CO3
6.	Program on looping statements.	3	CO3
7.	Operations on lists.	3	CO4
8.	Creating and saving graphs to files.	3	CO5
WEB REFERENCES:			
1.	https://www.coursera.org/learn/r-programming		
2.	https://couponry.wordpress.com/2018/04/r-programming-a-z-r-for-data-science-with-r-real-exercises-learn-r-programming-from-scratch		
3.	https://rstudio.com		


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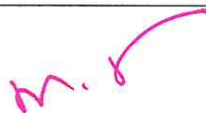
COURSE OUTCOMES (CO):

After the completion of this course, the students should be able to:


CO1	Understand the concepts of descriptive statistics.
CO2	Gain the knowledge on matrix manipulations.
CO3	Develop programs using control structures.
CO4	Apply computational techniques.
CO5	Learn exploratory data analysis.


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18UCSSBP501	SBC PRACTICAL III: MySQL (INTERNAL EVALUATION)	SEMESTER - V	
COURSE OBJECTIVES:			
The course aims			
<ul style="list-style-type: none"> To acquire the knowledge of query building. To know about basics of constraints. 			
Credit Points: 2		Total Hours: 30	
S.NO	PROGRAMS	Hrs	CO
1.	Perform DDL commands.	2	CO1
2.	Perform DML commands.	2	CO1
3.	Creating a table to implement integrity constraints and referential integrity constraints in column and table level.	2	CO2
4.	Creating queries for Built-in functions.	2	CO3
5.	Creating queries using limit clause and rand function.	2	CO3
6.	Implement queries using Group By, Having Clause and Order Clause.	2	CO3
7.	Implement different types of joins.	2	CO4
8.	Creating user and assign privileges and roles.	2	CO5
WEB REFERENCES:			
1.	http://dev.mysql.com/doc/refman/8.0/en/programs.html		
2.	https://www.geeksforgeeks.org		


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COURSE OUTCOMES (CO):

On completion of this course, the students will be able to

CO1	Write structured queries.
CO2	Implement record manipulation.
CO3	Write queries using functions.
CO4	Implement various joins.
CO5	Understand about assigning privileges and roles.




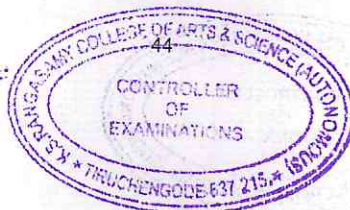
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18UCSM601	CORE XII: PYTHON PROGRAMMING	SEMESTER - VI	
COURSE OBJECTIVES:			
The Course aims			
<ul style="list-style-type: none"> To learn how to design and write programs in Python application. To learn how to use lists, tuples and dictionaries in Python programs. To understand the object oriented concepts through Python. To learn how to identify Python object types. 			
Credits Points: 4		Total Hours: 50	
UNIT	CONTENTS	Hrs	CO
I	BASICS: Python Variables Executing Python from the Command Line- Editing Python Files- Python Reserved Words- Basic Syntax - Comments- Standard Data Types Relational Operators- Logical Operators- Bitwise Operators-Simple Input and Output.	10	CO1
II	CONTROL STATEMENTS: Control Flow and Syntax- Indenting- if Statement- statements and expressions - string operations- Boolean Expressions - while Loop - break and continue- for Loop. LISTS: List- list slices- list methods- list loop mutability aliasing- cloning lists- list parameters. TUPLES: Tuple assignment, tuple as return value- Sets Dictionaries.	10	CO2
III	FUNCTIONS: Definition- Passing parameter to a Function- Built in functions - Variable Number of Arguments- Scope Type conversion - Type coercion - Passing Function to a Function- Mapping Functions in a Dictionary Lambda- Modules- Standard Modules sys math time - dir- help Function.	10	CO3


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IV	ERRORHANDLING: RunTimeErrors - ExceptionModel- ExceptionHierarchy- HandlingMultipleExceptions- DataStreams- AccessModesWriting- DatatoaFileReading- DataFromaFile- AdditionalFileMethods- UsingPipesasDataStreams- HandlingIOExceptions- WorkingwithDirectories.	10	CO4
V	OBJECTORIENTEDFEATURES: ClassesPrinciplesofObject Orientation- CreatingClasses- InstanceMethods- FileOrganization-SpecialMethods- Class Variables - InheritancePolymorphism-TypeIdentification- SimpleCharacterMatches- SpecialCharacters- CharacterClassesQuantifiers - DotCharacter - GreedyMatchesGrouping - MatchingatBeginningorEnd - MatchObjectsSubstituting- Splittinga String-Compiling RegularExpressions.	10	CO5
TEXT BOOKS:			
1.	<i>Mark Summerfield.</i> 2009. Programming in Python 3; A Complete introduction to the Python Language , Addison-WesleyProfessional.		
2.	<i>Martin C.Brown.</i> 2001. Python: The Complete Reference ,McGraw-Hill.		
REFERENCE BOOKS:			
1.	<i>Allen B.Downey.</i> 2016. Think Python: How to Think Like a Computer Scientist . [Second Edition], Updated for Python 3, Shroff/O'Reilly Publishers.		
2.	<i>Guido van Rossum and Fred L.Drake Jr.</i> 2011. An Introduction to Python - Revised and updated for Python 3 .[Second Edition]. Network Theory Ltd.		
3.	<i>Welsey J Chun.</i> 2012. Core Python Application Programming . Prentice Hall.		
WEB REFERENCES:			
1.	https://www.w3schools.com/Python/default.asp		
2.	https://www.tutorialspoint.com/python		

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18UCSMP601	CORE PRACTICAL VIII: PYTHON PROGRAMMING	SEMESTER - VI	
COURSE OBJECTIVES:			
The course aims			
<ul style="list-style-type: none"> To acquire programming skills in core Python. To learn to apply fundamental problem solving techniques. 			
Credit Points: 3		Total Hours: 30	
S.NO.	PROGRAMS	Hrs	CO
1.	Program to print all Prime numbers in an interval.	3	CO1
2.	Program to perform various operations on LIST and TUPLES.	3	CO1
3.	Program to perform various operations on SET and DICTIONARY.	3	CO2
4.	Program to handle multiple exceptions.	3	CO3
5.	Program to multiply two matrices using nested loops and using NumPy array.	3	CO3
6.	Program to count the number of matching characters in a pair of string using "re module".	3	CO4
7.	Program to solve a linear algebra system which can be given as $1x + 2y = 5$ and $3x + 4y = 6$ using SciPy and NumPy modules.	3	CO4
8.	Program to read a csv file consists of students marks statement and write in another csv file with total, average and grade .	3	CO5
WEB REFERENCES:			
1.	https://www.programiz.com		
2.	https://www.geeksforgeeks.org		


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COURSE OUTCOMES (CO):

On completion of this course, the students will be able to

CO1	Develop Simple programs.
CO2	Implement the LIST, TUPLES, SET and DICTIONARY.
CO3	Develop programs using Exceptions and loops.
CO4	Implement various modules like re module, SciPy and NumPy modules.
CO5	Develop program using data sets.


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3.	http://aactni.edu.in/etutorial/refer/python/
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COURSE OUTCOMES (CO):

After the completion of this course, the students will be able to

CO1	Know the concepts of basics of Python Programming.
CO2	Understand the knowledge about the control statements.
CO3	Develop the programs using function concepts.
CO4	Implement the Error Handling functions.
CO5	Understand the OOPs features.

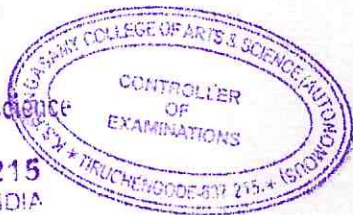
MAPPING:

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	H	M
CO2	H	H	H	H	H
CO3	M	M	M	H	M
CO4	H	H	H	H	H
CO5	M	M	H	H	H

H-High; M-Medium; L-Low


M. Prasad


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	Architecture - UMTS Radio Interface -UTRAN - UMTS Handover.		
IV	Satellite System: History - Applications - Basics - Routing- Localization - Handover. Wireless LAN: IEEE 802.11- System Architecture - Protocol Architecture - Physical Layer - Medium Access Control Layer. Bluetooth: User scenarios - Architecture - Radio Layer - Baseband Layer - Link Manager Protocol.	10	CO4
V	Mobile Network Layer: Mobile IP - Goals, Assumption, and Requirements - Entities and Terminology - IP Packet delivery - Agent discovery - Registration. Dynamic Host Configuration Protocol - Mobile Transport Layer: Traditional TCP - Congestion Control - Slow Start - Fast Retransmit.	10	CO5
TEXTBOOK:			
1	Jochen Schiller. Pearson Education. Mobile Communications. [Second Edition].		
REFERENCE BOOKS:			
1	Gordon L. Stüber. Principles of Mobile Communication. Second Edition.		
2	William Stallings, Wireless Communication and Networks, 2nd Edition, Pearson Education, 2005.		
3	Theodore Rappaport, Wireless Communications: Principles and Practice, Prentice Hall Communications, 1996.		
WEB REFERENCES:			
1	https://www.tutorialspoint.com/mobile-computing		
2	https://www.minigranth.com		
3	https://searchmobilecomputing.techtarget.com		


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