



THIRUVALLUVAR UNIVERSITY

SERKKADU, VELLORE-632115

B.Sc. ARTIFICIAL INTELLIGENCE

SEMESTER - II
SYLLABUS

FROM THE ACADEMIC YEAR

2023 - 2024

SEMESTER –II

S.No.	Part	Study Components		Ins. Hrs /week	Credit	Title of the Paper	Maximum Marks		
		Course Title					CIA	Uni. Exam	Total
SEMESTER II									
1.	I	Language	Paper-2	6	3	Tamil/Other Languages	25	75	100
2.	II	English	Paper-2	4	3	English	25	75	100
3.	II	NMSDC: Language Proficiency for Employability	Paper-1	2	2	Overview of English Communication	25	75	100
4.	III	Core Course –CC III	Paper-2	5	5	Python Programming	25	75	100
5.	III	Core Course –CC IV	Practical - 2	5	5	Practical II – Python Programming Lab	25	75	100
6.	III	Elective II Generic/ Discipline Specific	Elective II	6	3	Numerical Methods –II (or) Discrete Mathematics	25	75	100
7.	IV	Skill Enhancement Course SEC-2	Paper2	2	2	Understanding Internet	25	75	100
8.	IV	Skill Enhancement Course SEC-3 (Discipline Specific)	Paper 1	2	2	PHP Programming	25	75	100
		Sem. Total		32	25		200	600	800

SEMESTER –II

Subject Code	Subject Name	Category	L	T	P	S	Credits	Marks		
								CIA	External	Total
	PYTHON PROGRAMMING	CC3	5	-	-	I	5	25	75	100
Learning Objectives										
LO1	To make students understand the concepts of Python programming.									
LO2	To apply the OOPs concept in PYTHON programming.									
LO3	To impart knowledge on demand and supply concepts									
LO4	To make the students learn best practices in PYTHON programming									
LO5	To know the costs and profit maximization									
UNIT	Contents									No. of Hours
I	Basics of Python Programming: History of Python-Features of Python-Literal-Constants-Variables - Identifiers–Keywords-Built-in Data Types-Output Statements – Input Statements-Comments – Indentation- Operators-Expressions-Type conversions. Python Arrays: Defining and Processing Arrays – Array methods.									15
II	Control Statements: Selection/Conditional Branching statements: if, if-else, nested if and if-elif-else statements. Iterative Statements: while loop, for loop, else suite in loop and nested loops. Jump Statements: break, continue and pass statements.									15
III	Functions: Function Definition – Function Call – Variable Scope and its Lifetime-Return Statement. Function Arguments: Required Arguments, Keyword Arguments, Default Arguments and Variable Length Arguments- Recursion. Python Strings: String operations- Immutable Strings - Built-in String Methods and Functions - String Comparison. Modules: import statement- The Python module – dir() function – Modules and Namespace – Defining our own modules.									15
IV	Lists: Creating a list -Access values in List-Updating values in Lists-Nested lists -Basic list operations-List Methods. Tuples: Creating, Accessing, Updating and Deleting Elements in a tuple – Nested tuples– Difference between lists and tuples. Dictionaries: Creating, Accessing, Updating and Deleting Elements in a Dictionary – Dictionary Functions and Methods - Difference between Lists and Dictionaries.									15
V	Python File Handling: Types of files in Python - Opening and Closing files-Reading and Writing files: write() and writelines() methods- append() method – read() and readlines() methods – with keyword – Splitting words – File methods - File Positions- Renaming and deleting files.									15

		TOTAL HOURS	75
Course Outcomes		Programme Outcomes	
CO	On completion of this course, students will		
CO1	Learn the basics of python, Do simple programs on python, Learn how to use an array.	PO1, PO2, PO3, PO4, PO5, PO6	
CO2	Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements.	PO1, PO2, PO3, PO4, PO5, PO6	
CO3	Concept of function, function arguments, Implementing the concept strings in various application, Significance of Modules, Work with functions, Strings and modules.	PO1, PO2, PO3, PO4, PO5, PO6	
CO4	Work with List, tuples and dictionary, Write program using list, tuples and dictionary.	PO1, PO2, PO3, PO4, PO5, PO6	
CO5	Usage of File handlings in python, Concept of reading and writing files, Do programs using files.	PO1, PO2, PO3, PO4, PO5, PO6	
Textbooks			
1	Reema Thareja, "Python Programming using problem solving approach", First Edition, 2017, Oxford University Press.		
2	Dr. R. Nageswara Rao, "Core Python Programming", First Edition, 2017, Dream tech Publishers.		
Reference Books			
1.	VamsiKurama, "Python Programming: A Modern Approach", Pearson Education.		
2.	Mark Lutz, "Learning Python", Orielly.		
3.	Adam Stewarts, "Python Programming", Online.		
4.	Fabio Nelli, "Python Data Analytics", APRESS.		
5.	Kenneth A. Lambert, "Fundamentals of Python – First Programs", CENGAGE Publication.		
Web Resources			
1.	https://www.programiz.com/python-programming		
2.	https://www.guru99.com/python-tutorials.html		
3.	https://www.w3schools.com/python/python_intro.asp		
4.	https://www.geeksforgeeks.org/python-programming-language/		
5.	https://en.wikipedia.org/wiki/Python_(programming_language)		

Mapping with Programme Outcomes:

CO/PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	3	3	3	3	3	3
CO 2	3	3	3	3	2	3
CO 3	3	3	3	3	2	2

CO 4	3	3	3	3	2	3
CO 5	3	2	3	3	3	3
Weightage of course contributed to each PSO	15	14	15	15	13	14

S-Strong-3 M-Medium-2 L-Low-1

Subject Code	Subject Name	Category	L	T	P	S	Credits	Marks		
								CIA	External	Total
	PYTHON PROGRAMMING LAB	CC2	-	-	5	I	5	25	75	100
Course Objectives: <ol style="list-style-type: none"> 1. Be able to design and program Python applications. 2. Be able to create loops and decision statements in Python. 3. Be able to work with functions and pass arguments in Python. 4. Be able to build and package Python modules for reusability. 5. Be able to read and write files in Python. 										
LAB EXERCISES									Required Hours	
<ol style="list-style-type: none"> 1. Program using variables, constants, I/O statements in Python. 2. Program using Operators in Python. 3. Program using Conditional Statements. 4. Program using Loops. 5. Program using Jump Statements. 6. Program using Functions. 7. Program using Recursion. 8. Program using Arrays. 9. Program using Strings. 10. Program using Modules. 11. Program using Lists. 12. Program using Tuples. 13. Program using Dictionaries. 14. Program for File Handling. 									75	
Course Outcomes										
On completion of this course, students will										
CO1	Demonstrate the understanding of syntax and semantics of									
CO2	Identify the problem and solve using PYTHON programming techniques.									
CO3	Identify suitable programming constructs for problem solving.									
CO4	Analyze various concepts of PYTHON language to solve the problem in an efficient way.									
CO5	Develop a PYTHON program for a given problem and test for its correctness.									

Mapping with Programme Outcomes:

CO/PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	3	3	3	3	3	3
CO 2	3	3	1	3	2	3
CO 3	3	3	3	3	2	2
CO 4	3	3	3	3	2	3
CO 5	3	2	3	3	3	3
Weightage of course contributed to each PSO	15	15	13	15	13	14

S-Strong-3 M-Medium-2 L-Low-1

Subject Code	Subject Name	Category	L	T	P	S	Credits	Marks			
								CIA	External	Total	
SEC5	Understanding Internet	Skill Enha. Course (SEC)	2	-	-		2	25	75	100	
Learning Objectives											
LO1	Knowledge of Internet										
LO2	Learning TCP/IP – Internet Technologies and Protocol										
LO3	Learning Internet connectivity.										
LO4	Learning internet networks										
LO5	Learning Electronic Mail										
UNIT	Contents								No. Of. Hours		
I	Internet, Growth of Internet, Owners of the Internet, Anatomy of Internet, ARPANET and Internet history of the World Wide Web, basic Internet Terminology, Net etiquette. Internet Applications – Commerce on the Internet, Governance on the Internet, Impact of Internet on Society Crime on/through the Internet.								6		
II	Packet switching technology, Internet Protocols: TCP/IP, Router, Internet Addressing Scheme: Machine Addressing (IP address), E-mail Addresses, Resources Addresses								6		
III	Internet accounts by ISP: Telephone line options, Protocol options, Service options, Telephone line options – Dialup connections through the telephone system, dedicated connections through the telephone system, ISDN, Protocol options – Shell, SLIP, PPP, Service options – E-mail, WWW, News Firewall								6		
IV	Network definition, Common terminologies: LAN, WAN, Node, Host, Workstation, bandwidth, Interoperability, Network administrator, network security, Network Components: Servers, Clients, Communication Media, Types of network: Peer to Peer, Clients Server, Addressing in Internet: DNS, Domain Name and their organization								6		
V	Email Networks and Servers, Email protocols –SMTP, POP3, IMAp4, MIME6, Structure of an Email – Email Address, Email Header, Body and Attachments								6		
TOTAL HOURS								30			
Course Outcomes								Programme Outcomes			
CO	On completion of this course, students will										
CO1	Knows the basic concept in internet Concept of internet.								PO1, PO2, PO3, PO4, PO5, PO6		
CO2	Know the concept of TCP/IP – Internet Technologies and Protocol								PO1, PO2, PO3, PO4, PO5, PO6		
CO3	Understand the concept of Internet connectivity.								PO1, PO2, PO3, PO4, PO5, PO6		
CO4	Can be able to know about internet networks								PO1, PO2, PO3, PO4, PO5, PO6		

CO5	Understand the concept of Electronic mail.	PO1, PO2, PO3, PO4, PO5, PO6
Textbooks		
1	Greenlaw R and Hepp E “Fundamentals of Internet and www” 2nd EL, Tata McGrawHill,2007.	
2	D. Comer, “The Internet Book”, Pearson Education, 2009	
Reference Book		
1	M. L. Young, ”The Complete reference to Internet”, Tata McGraw Hill, 2007.	
2	B. Patel & Lal B. Barik, ” Internet & Web Technology “, Acme Learning Publishers.	
3	Leon and Leon, “Internet for Everyone”, Vikas Publishing House.	
Web Resources		
1.	https://www.geeksforgeeks.org/what-is-internet-definition-uses-working-advantages-and-disadvantages/	

Mapping with Programme Outcomes:

CO/PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	3	3	3	3	3	3
CO 2	3	3	2	3	3	3
CO 3	2	3	3	3	3	3
CO 4	3	3	3	3	3	3
CO 5	3	3	3	2	3	3
Weightage of course contributed to each PSO	14	15	14	14	15	15

S-Strong-3 M-Medium-2 L-Low-1

Subject Code	Subject Name	Category	L	T	P	S	Credits	Inst. Hours	Marks		
									CIA	External	Total
	PHP Programming	SEC 3	2	-	-	-	2	2	25	75	100
<p>Learning Objectives:(for teachers: what they have to do in the class/lab/field) The objective of this course is to teach the fundamentals of quantum information processing, including quantum computation, quantum cryptography, and quantum information theory.</p>											
<p>Course Outcomes:(for students: To know what they are going to learn) CO1:Analyze the behaviour of basic quantum algorithms CO2:Implement simple quantum algorithms and information channels in the quantum circuit model CO3:Simulate a simple quantum error-correcting code CO4: Prove basic facts about quantum information channels CO5:</p>											
Units	Contents									Required Hours	
I	Introduction to PHP -Basic Knowledge of websites -Introduction of Dynamic Website -Introduction to PHP -Scope of PHP -XAMPP and WAMP Installation- PHP Programming Basics -Syntax of PHP									6	
II	Introduction to PHP Variable -Understanding Data Types -Using Operators -Using Conditional Statements -If(), else if() and else if condition Statement -Switch() Statements -Using the while() Loop -Using the for() Loop									6	
III	PHP Functions -PHP Functions -Creating an Array -Modifying Array Elements -Processing Arrays with Loops -Grouping Form Selections with Arrays -Using Array									6	
IV	PHP Advanced Concepts -Reading and Writing Files -Reading Data from a File -Managing Sessions and Using Session Variables									6	
V	OOPS Using PHP -OOPS Concept-Class, Object, Abstractions, Encapsulation, Inheritance, Polymorphism -Creating Classes and Object in PHP-Cookies and Session Management									6	
Recommended Texts											
1	Head First PHP & MySQL: A Brain-Friendly Guide- 2009-Lynn mighley and Michael Morrison.										
2	P.Rizwan Ahmed, Open Source Programming , Margham Publications, Chennai, 2017										
Reference Books											
1	The Joy of PHP: A Beginner's Guide to Programming Interactive Web Applications with PHP and MySQL- Alan Forbes										
2	PHP: The Complete Reference-Steven Holzner.										
3	DT Editorial Services (Author), “HTML 5 Black Book (Covers CSS3, JavaScript, XML, XHTML, AJAX, PHP, jQuery)”, Paperback 2016, 2 nd Edition.										

MAPPING TABLE						
CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	3	2	2	2
CO2	3	3	3	3	3	2
CO3	3	2	3	3	3	3
CO4	3	2	2	3	3	3
CO5	3	3	2	3	3	3
Weightage of course contributed to each PSO	15	12	13	14	14	13