

Branch Name:	CYBER SECURITY
Program Code:	ET207
Course Title:	Code Review and Scripting using Python
Course Code:	2ET2070203T
Pre-requisite Course:	Basic Programming Knowledge.

Course Objectives: After successful completion of the course, student will be able to

1. This course introduces core programming basics—including data types, control structures, algorithm development, and program design with functions—via the Python programming language.
2. The course discusses the fundamental principles of Object-Oriented Programming.
3. The course discusses the fundamental principles of Object-Oriented Programming.
4. Students will solve problems and explore real-world software development challenges.
5. Learn to create practical and contemporary applications.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								Total (Marks)
					Theory (Marks)				Practical (Marks)				
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
3	3	-	-	3	24	60	16	40	-	-	-	-	100

Course Contents:

Unit No	Topics	Total Hours	Weightage (%)
1	Introduction to Python Programming Language. : Introduction to Python Language, Strengths and Weaknesses, IDLE, Dynamic Types, Naming Conventions, String Values, String Operations, String Slices, String Operators, Numeric Data Types, Conversions, Built In Functions	08	18
2	Data Collections and Language Component: Introduction, Control Flow and Syntax, Indenting, The if Statement, Relational Operators, Logical, Operators, True or False, Bit Wise Operators, The while Loop, break and continue, The for Loop, Lists, Tuples, Sets, Dictionaries, Sorting Dictionaries, Copying Collections.	09	18
3	Object and Classes : Classes in Python, Principles of Object Orientation, Creating Classes, Instance Methods, File Organization, Special Methods, Class Variables, Inheritance, Polymorphism, Type Identification, Custom Exception Classes.	09	20
4	Functions and Modules : Introduction, Defining Your Own Functions, Parameters , Function Documentation, Keyword and Optional Parameters, Passing Collections to a Function, Variable Number of Arguments, Scope, Functions - "First Class Citizens", Passing Functions to a Function, Mapping Functions in a Dictionary, Lambda, Modules, Standard Modules – sys, Standard Modules – math, Standard Modules – time, The dir Function	10	22
5	I/O and Error Handling In Python : Introduction, Data Streams, Creating Your Own Data Streams, Access Modes, Writing Data to a File, Reading Data From a File, Additional File Methods, Using Pipes as Data Streams, Handling IO	10	22

Text Books:

1. Starting Out with Python (2009) Pearson , Tonny Gaddis
2. Kenneth A. Lambert, the Fundamentals of Python: First Programs, 2011, Cengage Learning, ISBN: 978-1111822705.

Reference Books:

1. Beginning Python Wrox Publication Peter Norton, Alex Samuel
2. Python Algorithms Apress, Magnus Lie Hetland
3. Python Object Oriented Programming PACKT Press, Dusty Phillips
4. Python for Unix and Linux System Administration O'Reilly, Noad Gift

Course Learning Outcomes (CLO):

Course Outcomes	Description	Bloom's Taxonomy Level
COL1	Apply the principles python programming	Understanding (2) Applying (3)
COL2	Write clear and effective python code	Applying (3)
COL3	Create applications using python programming	Applying (3)
COL4	Access database using python programming	Applying (3)
COL 5	Develop web applications using python programming	Applying (3)

Mapping of CLO with PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	H	M	M		M											
CLO2	H	M			M							L				
CLO3	H	M	M		M											
CLO4	M	M	M		M							L				
CLO5	M	M										L				

H: High, M: Medium, L: Low