Annexure 2

PYTHON PROGRAMMING

Course Code: CSE 302 **Credit Units: 03**
Total Hours: 30

Course Objective:
To understand the basic concepts such as lists, tuples and dictionary Data structures. To understand concepts like networking and website development using frameworks of python. To understand working third party libraries in python. To understand Scientific programming paradigm.

Course Contents:

Module I: Introduction of Python: (8 Hours)
History of Python, Features of Python Programming, Applications of Python, Use of python, install and Run Python in Windows/Linux, Keyword and Identifier, Statements and Comments, Python Variables, Python Data types, Python Type Conversion, Python I/O and Import, Python Operators, Python Namespace.
Python If-else statements, Python for Loop, while loop, break and continue, String manipulation, List Tuple, dictionaries, pass statement, looping technique, functions, function arguments, recursion, anonymous function, python global, local and Nonlocal.

Module II: Object and Class: (5 Hours)
Python modules, python package, File operation, Python directory, Python exception, Exception Handling, User-Define Exception, Python OOP, class, inheritance, multiple inheritance, operator overloading.

Module III: Regular Expression, CGI and Database: (8 Hours)
Match function, Search function, matching vs. searching, modifier, pattern, Introduction of CGI,CGI Architecture, CGI environment Variable, GET/POST Method, Cookies,File upload, Introduction of Database, connections, Executing queries, transactions, handling errors.

Module IV: GUI Programming: (9 Hours)
Tkinter Programming, Tkinter widgets, Standard Attributes, CGI Programming, Introduction to Web Framework: - Django, Application Lifecycle, creating a Django Project, Creating Admin Interface, Creating Views, URL Mapping, Template System, Creating Database Models, Interfacing database: - PostgreSQL with the Django Project, Page Redirection, Form Processing.

Course Outcomes:

- Ability to create client-server application for real world problems.
- Ability to apply Regular Expression, CGI and Database.
- Ability to apply GUI Programming in real world problems.

Examination Scheme:

Components	A	CT	S/V/Q/HA	ESE
Weightage (%)	5	15	10	70

A: Attendance, CT: Class Test, S/V/Q/HA: Seminar/Viva/Quiz/ Home Assignment, ESE: End Semester Examination;

Text & References:

Text:

- Core Python Programming , Wesley J. Chun, Publisher: Prentice Hall PTR, First Edition.
- Django Unleashed, Andrew Pinkham, SAMS, second edition
- OpenCV 4, Roy Shilkrot, Packt Pub, third edition
- Elegant Scipy, Juan Nunez, O'Reilly, third edition.

Reference:

- Learning Python, Mark Lutz, O'Reilly. Ltd., Second Edition.
- Python CookBook, Alex Martelli, O'Reilly. Ltd., Third Edition.