



# **MARRI LAXMAN REDDY**

## **INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

### **DEPARTMENT OF CIVIL ENGINEERING**

#### **2040575 - PYTHON LABORATORY**

##### **VISION**

- The Civil Engineering department strives to impart quality education by extracting the innovative skills of students and to face the challenges in latest technological advancements and to serve the society.

##### **MISSION**

- To fulfill the promised vision through the following strategic characteristics and aspirations: Provide quality education and to motivate students towards professionalism.
- Address the advanced technologies in research and industrial issues

##### **PROGRAM EDUCATIONAL OBJECTIVES**

**PEO – I:** Solving civil engineering problems in different circumstances.

**PEO – II:** Pursue higher education and research for professional development.

**PEO – III:** Inculcate qualities of leadership for technology innovation and entrepreneurship.

##### **PROGRAM SPECIFIC OUTCOMES**

**PSO 1 – UNDERSTANDING:** Graduates will have ability to describe, analyse and solve problems using mathematical, scientific, and engineering knowledge.

**PSO 2 - ANALYTICAL SKILLS:** Graduates will have an ability to plan, execute, maintain, manage, and rehabilitate civil engineering systems and processes.

**PSO 3 - EXECUTIVE SKILLS:** Graduates will have an ability to interact and work effectively in multi disciplinary teams.



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#### PROGRAMME OUTCOMES

**PO 1: Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

**PO 2: Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO 3: Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO 4: Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**PO 5: Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

**PO 6: The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**PO 7: Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO 8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO 9: Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO 10: Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO 11: Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO 12: Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



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**B.Tech. II Year - II Sem**

**L/T/P/C**

**0/0/2/1**

### **COURSE OUTCOMES**

1. Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.
2. Express proficiency in the handling of strings and functions
3. Determine the methods to create and manipulate Python programs by utilizing the data structures like lists, dictionaries, tuples and sets.
4. Identify the commonly used operations involving file systems and regular expressions
5. Articulate the Object-Oriented Programming concepts such as encapsulation, inheritance and polymorphism as used in Python

### **LIST OF EXPERIMENTS**

1. Basics
2. Operations
3. Control flow
4. Control Flow-continued
5. Files
6. Functions
7. Functions-continued
8. Functions-Problem solving
9. Multi-D-Lists
10. GUI, Graphics

### **LIST OF EQUIPMENTS**

- Computer Systems with Python Installed



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**DO's**

1. Bring observation note books, lab manuals and other necessary things for the class.
2. Students must attend the lab with ID cards and in the prescribed uniform.
3. Read and understand how to carry the activity thoroughly before coming in to the laboratory.
4. Report any broken plugs to your lecturer or laboratory technician immediately.
5. Switch off the computers after use and arrange the chairs properly before leaving the lab.

**DONT'S**

1. Do not operate the computers without the permission of the staff.
2. Do not use the pen drives in the laboratory without permission.