MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS)
Estd 1998

Affiliated to JNTUA, Anantapur & Approved by AICTE, New Delhi
Recognised Research Center
Accredited by NBA for CSE, ECE, EEE & ME
World Bank funded Institute
Recognised by UGC under the sections 2(f) and 12(B) of the UGC act 1956
Recognised as Scientific & Industrial Research Organization by DSIR of DST

S. No	Name of the Laboratory	Name of the Important Equipment
1	**Programming with C++ Laboratory** 	Dell Vostro 3669 (DELL 02), I3 7th Gen /ITB HDD / 4GB DDR4 RAM 500GB SATA HDD LED Monitor, Keyboard and Mouse
2	**Python Programming Laboratory** 	HP 280 G2 MT(HPO4), I36100/4GB DDR4 RAM /500 GB SATA HDD LED Monitor, Keyboard and Mouse
3	**Java Programming Laboratory** 	HP PRO 3330(HP03) I3/8 GB DDR3/500GB HDD @ 3.90GHz, RAM 4+4GB DDR3, 500 GB SATA HDD LED

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4	**Database Management Systems Lab** 	Dell Vostro 3669 (DELL 02), I3 7th Gen /ITB HDD / 4GB DDR4 RAM 500GB SATA HDD LED Monitor, Keyboard and Mouse

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5	**Data Structures and Algorithms Lab** 	HP PRO 3330(HP03) I3/8 GB DDR3/500GB HDD @ 3.90GHz, RAM 4+4GB DDR3, 500 GB SATA HDD LED
6	**Full Stack Web Development Laboratory** 	Dell Vostro 3669 (DELL 02), I3 7th Gen /ITB HDD / 4GB DDR4 RAM 500GB SATA HDD LED Monitor, Keyboard and Mouse
7	**Data Science Lab** 	HP PRO 3330(HP03) I3/8 GB DDR3/500GB HDD @ 3.90GHz, RAM 4+4GB DDR3, 500 GB SATA HDD LED
8	**Android Application Development laboratory** 	HP PRO 3330(HP03) I3/8 GB DDR3/500GB HDD @ 3.90GHz, RAM 4+4GB DDR3, 500 GB SATA HDD LED

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	Office Automation Laboratory	HP PRO 3330(HP03) I3/8 GB DDR3/500GB HDD @ 3.90GHz, RAM 4+4GB DDR3, 500 GB SATA HDD LED
10	**PC Hardware & Networking Laboratory**	HP 280 G2 MT(HPO4), I36100/4GB DDR4 RAM /500 GB SATA HDD LED Monitor, Keyboard and Mouse
11	**Programming in C Laboratory**	Dell Vostro 3669 (DELL 02), I3 7th Gen /ITB HDD / 4GB DDR4 RAM 500GB SATA HDD LED Monitor, Keyboard and Mouse
12	**Unix & Shell Programming Laboratory**	HP 280 G2 MT(HPO4), I36100/4GB DDR4 RAM /500 GB SATA HDD LED Monitor, Keyboard and Mouse

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13	**Data Analysis Using R Laboratory**	Dell Vostro 3669 (DELL 02), I3 7th Gen /ITB HDD / 4GB DDR4 RAM 500GB SATA HDD LED Monitor, Keyboard and Mouse
14	**Machine Learning Laboratory**	HP PRO 3330(HP03) I3/8 GB DDR3/500GB HDD @ 3.90GHz, RAM 4+4GB DDR3, 500 GB SATA HDD LED
15	**OOPs Laboratory**	HP PRO 3330(HP03) I3/8 GB DDR3/500GB HDD @ 3.90GHz, RAM 4+4GB DDR3, 500 GB SATA HDD LED
16	**Data Warehousing and Data Mining Lab**	HP 280 G2 MT(HPO4), I36100/4GB DDR4 RAM /500 GB SATA HDD LED Monitor, Keyboard and Mouse

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17	**Mobile Application Development Using Android Laboratory**	HP PRO 3330(HP03) I3/8 GB DDR3/500GB HDD @ 3.90GHz, RAM 4+4GB DDR3, 500 GB SATA HDD LED
18	**Web Programming through PHP Laboratory**	HP 280 G2 MT(HPO4), I36100/4GB DDR4 RAM /500 GB SATA HDD LED Monitor, Keyboard and Mouse
19	**Web Technologies through Java Laboratory**	Dell Vostro 3669 (DELL 02), I3 7th Gen /ITB HDD / 4GB DDR4 RAM 500GB SATA HDD LED Monitor, Keyboard and Mouse
20	**Cryptography and Network Security Laboratory**	HP 280 G2 MT(HPO4), I36100/4GB DDR4 RAM /500 GB SATA HDD LED Monitor, Keyboard and Mouse

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21	**Deep Learning Laboratory** 	HP 280 G2 MT(HPO4), I36100/4GB DDR4 RAM /500 GB SATA HDD ED Monitor, Keyboard and Mouse
22	**.Net Framework and C# Laboratory** 	HP PRO 3330(HP03) I3/8 GB DDR3/500GB HDD @ 3.90GHz, RAM 4+4GB DDR3, 500 GB SATA HDD LED
23	**Advanced Java Programming Laboratory** 	Dell Vostro 3669 (DELL 02), I3 7th Gen /ITB HDD / 4GB DDR4 RAM 500GB SATA HDD LED Monitor, Keyboard and Mouse

Software Procurement:

Sl. No.	Name of the Department	Description	Software Name	No. of Users	Date of Purchase
1	Master of Computer Application/ Computer Science & Engineering/ Computer Science & Technology	IBM Rational Rose Software	Rational Rose Software	30	30-01-2008
		Adobe Web Premium CS5 / Acrobat Professional	Adobe / Acrobat Software	2	01-12-2010
		Microsofte CASA and GGS (Common to All)	Microsoft Campus Agreement	100 & 75	26-12-2016

COMPUTING PRACTICALS:

This Lab introduces how to solve problems using flowcharts and programming concepts. The focus is on developing students to understand and apply the concepts of programming using python. A practical introduction to computing that will build students confidence and familiarity with computer programming.

Objective:
1. To make the student understand problem solving techniques and their applications
2. Students will be able to understand the syntax and semantics of python.
3. Get acquaintances with classes and objects, stacks and queues using python.

Required Software:

1. IDLE 3.4.1 or Above
2. Raptor Portable

COMPUTER PROGRAMMING PRACTICALS:

This lab is to apply the concepts of computer programming in a practical approach; the emphasis of this course is on techniques of program development within the structure and object-oriented paradigm. Implementation of program include C program basics, control structures, arrays, files, pointers, objects, classes, inheritance, and data structures.

Objectives:
1. To make the student learn C Programming language.
2. To make the student solve problems, implement those using C & C++ programming languages.
3. To strengthen the ability to identify and apply the suitable data structure for the given real world problem.

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Required Software:

1. Geany Application Environment

DATA STRUCTURES AND ALGORITHMS PRACTICALS

This Lab is aimed to provide hands on experience to implement basic linear and nonlinear data structures. This course covers implementation of stack, queue, list, sorting techniques, binary search trees, and balanced search trees.

Objectives:
1. To develop skills to analyze and program linear and nonlinear data structures.
2. Develop different data structures with effective usage of arrays and linked lists.
3. Develop recursive algorithms as they apply to trees and graphs.

Required Software:

1. Geany Application Environment
2. Turbo C++

OBJECT ORIENTED PROGRAMMING PRACTICALS

This lab deals with the basics of Object Oriented Programming concepts such as objects, classes, polymorphism, inheritance, static and dynamic binding. Object Oriented Programming using Java-classes, interfaces, inheritance, polymorphism, method dispatch, features for encapsulation and modularity.

Objectives:

1. Study the syntax, semantics and features of Java Programming Language
2. Learn the method of creating Multi-threaded programs and handle exceptions
3. Learn Java features to create GUI applications & perform event handling
4. Learn basics of Java Data Base Connectivity.

Software Required:

1. JDK 1.7

DATABASE MANAGEMENT SYSTEM PRACTICALS:

This Lab course is designed to provide basic understanding on database systems and its design. The course material further used for developing any web based applications in which database is back end. Course covers from all basic and advanced queries of SQL, PL/SQL programs, Relational algebra and calculus, normal forms, low level details such as representing data elements of database and indexed structures, transaction management and data recovery.

Objectives:
1. To know the components of DBMS.
2. To understand design of ER Diagrams and represent using Relational model.
3. To understand the concept of normal forms in the design of databases.
4. To Understand representation of retrieval of data using relational algebra and calculus.
5. To comprehend the structure of SQL Queries to retrieve data from the databases
6. To gain knowledge on low level details of database storage and data recovery

Required Software:

1. ORACLE

OBJECT ORIENTED ANALYSIS & DESIGN PRACTICALS:
This Lab course will give an overview of UML and how to use their diagrams and views to support requirements, architectural and systems design.

Objectives:
1. To Analyze and design solutions to problems using object oriented approach.
2. To make the student to learn and apply the process of object-oriented analysis and design to solve complex problems with the different applications.

Required Software:

1. Rational Rose

OPERATING SYSTEMS PRACTICALS:
This course presents fundamental concepts related to the design and implementation of operating systems. Topics includes basic operating system structure, process scheduling, process and thread synchronization and concurrency, memory management and file system.

Objectives:
1. To understand the services provided by and to design an operating system.
2. To understand what a process is and how processes are scheduled.
3. To understand what a process is and how processes are synchronized
4. To understand different approaches to memory management.
5. To understand the structure and organization of the file system.

Required Software:

1. GCC -Compiler

UNIX/WINDOWS & SHELL PROGRAMMING PRACTICALS:

This Lab course is designed to provide basic understanding of UNIX operating system and its commands. Writing shell scripts and automate the jobs and processes are important steps in shell programming. Course covers all basic and advanced UNIX commands, shell scripting using korn, power shell scripting and implementation of system calls related to file, process and IPC.

Objectives:

1. To know about unix operating system and shell scripting.
2. To comprehend about unix utilities of file, process, communication etc.
3. To Know about system calls related to file , process and IPC.
4. To know about power shell.

Required Software:

1. KORN Shell
2. GCC Compiler

WEB PROGRAMMING PRACTICALS:

This Lab course is to apply the concepts of web programming in a practical approach; the emphasis of this course is on techniques of web programs development within the structure and object-oriented paradigm. Implementation of programs includes HTML static pages, CSS, JavaScript, XML, and PHP with database interactions.

Objectives:

1. To create a fully functional website with database interactions.
2. To develop an online Book store using we can sell books.

Required Software:

1. Wamp Server-Apache, Sql, PhP servers
2. Web Browser

SOFTWARE TESTING & DATA WAREHOUSING AND DATA MINING PRACTICALS:

This Software testing course is to apply the concepts of testing in a practical approach; the emphasis of this course is on techniques to develop test cases used for testing the application manually or by automation. This Data mining course is to analyze and understand the data mining functionalities such as associations, classification and clustering.

Objectives:

1. To study the Basic software debugging methods.
2. To enable the Students to understand various testing methodologies.
3. To study the procedure for designing test cases.
4. To enable the Students about the significance of software testing.
5. To implement the fundamentals of Data mining and Preprocessing techniques.
6. To implement the algorithms of data mining techniques.

Required Software:

1. Weka Tool

PROGRAMMING FOR PROBLEM SOLVING (PYTHON)

Python is a language with a simple syntax, and a powerful set of libraries. It is an interpreted language, with a rich programming environment. While it is easy for beginners to learn, it is widely used in many scientific areas for data exploration. This course is an introduction to the Python programming language for students without prior programming experience. This course provides knowledge on how to implement programs in python language and to solve computational problems using the various programming constructs including data structures, functions, string handling mechanisms and file handling concepts.

Objectives:
1. Learn Python programming constructs.
2. Implement Python programs with conditional structures and loops.
3. Use functions for structuring Python programs.
4. Handle compound data using Python lists, tuples, and dictionaries.
5. Manipulate data using files handling in Python.

Required Software:

1. IDLE 3.4.1 or Above
2. Raptor Portable

C PROGRAMMING AND DATA STRUCTURE
This course includes C program basics, control structures, arrays, files, pointers and data structures.

Objectives:
1. To make the student understand problem solving techniques and their applications
2. Students will be able to understand the syntax and semantics of C programming language
3. Develop algorithms for manipulating stacks, queues, searching and sorting.

Required Software:
1. Geany Application Environment