



# A. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY

Approved by AICTE New Delhi, Affiliated to VTU Belagavi  
& Recognised by Govt. of Karnataka

(A Unit of Laxmi Memorial Education Trust®)  
(NBA Accredited All Branches)



Department of  
**CIVIL ENGINEERING**

**CENTER FOR CONSULTANCY SERVICES (CCS)**

# A.J. INSTITUTE OF ENGINEERING AND TECHNOLOGY MANGALURU



## ABOUT THE INSTITUTION

A. J. Institute of Engineering & Technology is promoted by Laxmi Memorial Education Trust (R.) was established in the year 1991 in memory of Late Laxmi Shetty, beloved mother of Dr. A. J. Shetty, who is the President and Managing Director of the Trust. He is also a pioneer entrepreneur, educationalist and philanthropist of Dakshina Kannada.

A J Institute of Technology, Mangaluru, is approved by AICTE and affiliated to Visvesvaraya Technological University (VTU), Belagavi was established in the year 2016. It has well established lab and research Centre in Basic Science Department.

AJIET is the only Engineering college located in the heart of the city. The campus is located within 5km Mangaluru city radius on the National Highway NH-66 in the Mangalore to Udupi highway. The campus over 12 acres with a healthy environment, is very near to all modes of transportation.

The A. J. Institute of Engineering and Technology, within a short span of time has emerged as the jewel. The Institute is having very active MOUs for accelerating research and student internship collaboration with various supported platforms.

## **ABOUT THE DEPARTMENT**

Department of Civil Engineering was established in the year 2016 with an inception of AJIET, Mangaluru. The Department is offering an undergraduate courses (B.E) in Civil Engineering with an intake of 60 and Affiliated to VTU Belagavi. Department conducts various seminars, Technical talks, Industrial visits etc. It is well supported by experienced and highly dedicated faculty members who always motivate students with latest technical advancements in the field and nourish them to come out with flying colors.

## **DEPARTMENT VISION**

To produce competent and professional civil engineers with academic excellence and ethics to meet societal challenges at global level.

## **DEPARTMENT MISSION**

M1: To impart students with strong theoretical and practical skills through the state-of-the-art concepts and fundamentals of various civil engineering subjects.

M2: To prepare the students to be competent and skilled enough to take up the challenges in research to meet the ever-changing needs of society and to continue learning.

M3: To promote active learning, critical thinking, industry - institute collaborative activities and contribute to social development with ethical conduct.

M4: To nurture innovative ideas and develop entrepreneurial attitude among the engineering professionals.

## **Center for Consultancy Services(CCS)**

The Center for Consultancy Services (CCS) is formed in Aug 2018 to cultivate the research cultufaculty, students and also to provide the consultancy service to the Government sectors and industries. The Department is well equipped with a number of equipment's / instruments required for consultancy work. This facility will also be utilized for seminars / workshops and research oriented student's projects. Consultancy service under takes design, testing, inspection and advocacy projects in the field of civil engineering for both public and private sectors. CCS also aims to bridge the gap between the Industry & Institute. It also provides the necessary technical support to industries to solve their problems. CCS is being unique and distinct by the expertise of the faculties, who had handled many projects in the government and public sector.

### **Objectives:**

1. To consistently provide creative and effective engineering solutions that address clients' needs while incorporating cutting-edge technology and sustainable practices.
2. To ensure that all projects comply with local, national, and international regulations, codes, and standards, fostering safety, environmental responsibility, and legal adherence.
3. To streamline project processes, minimize resource wastage, and maximize efficiency in project delivery, thereby enhancing client satisfaction and profitability.
4. To uphold high quality standards in design, construction, and project management, ensuring deliverables meet or exceed client expectations and industry benchmarks.
5. To integrate sustainable practices into every aspect of project planning, design, and implementation, fostering environmentally responsible infrastructure development and resource conservation.
6. To foster clear and transparent communication with clients, stakeholders, and regulatory bodies throughout all project phases, ensuring alignment of objectives and timely resolution of issues.

# CONSULTANCY SERVICES

## TESTS CONDUCTED ON MATERIAL SAND CONCRETE

### 1. Cement

- Standard consistency
- Setting Time
- Specific Gravity
- Fineness by Blaine's Air permeability
- Soundness using Le-chatelier's

### 2. Coarse Aggregate

- Aggregate Crushing test
- Aggregate Impact test
- Aggregate abrasion test
- Flakiness Index and Elongation Index of Coarse Aggregates
- Specific Gravity and Sieve analysis
- Bulk density and water absorption

### 3. Fine Aggregate

- Specific Gravity and Sieve analysis
- Bulk density and water absorption
- Bulking of sand

### 4. Fresh Concrete (Work ability)

- Slump test
- Compaction factor
- Vee-Bee Consistometer
- Test on SCC

### 5. Hardened Concrete

- Compressive strength
- Split tensile strength
- Flexural strength
- Concrete mix design

### 6. Compressive test on solid and hollow blocks

### 7. Tests on flooring tiles

### 8. Tensile test on the TOR and mild steel



## TESTS ON HIGHWAY MATERIALS

1. Specific gravity of bitumen
2. Penetration test
3. Ductility test
4. Softening point test
5. Determination of binder content for as phalt mix
6. Viscosity test
7. Marshal stability Test



## TESTS ON SOIL

Extracting soil samples up to 2m depth at the desired location and conduction of the following tests.

1. Specific Gravity
2. Water content determination
3. Sieve Analysis
4. Consistency Indices-To determine Liquid Limit, Plastic Limit & Shrinkage Limit
5. U.C.C test
6. Direct Shear Test-C& $\phi$  parameters
7. Triaxial Test-SBC of soil
8. Consolidation Test
9. CBR Tests



## WATER QUALITY ANALYSIS

1. Drinking water quality analysis, parameters such as Sulphate, Iron, Phosphate, and pH, Total Dissolved Solids, Chloride, Hardness, Dissolved Oxygen, Residual Chlorine, Sodium, Potassium and Chlorine demand etc.



2. Industrial waste water analysis such as Chemical Oxygen Demand (COB), Biochemical Oxygen Demand (BOD), Dissolved Oxygen (DO), Trace elements etc.
3. Design of waste water treatment plant for small scale and large - scale industries.
4. Design of water supply and sanitary system for village and town.

### **SURVEYING WORKS**

Mapping and preparation of layout plans, contour maps and earth work estimations.

### **NON DESTRUCTIVE TESTING (NDT)**

- NDT checking of the structure by Ul transonic pulse velocity meter and Rebound hammer

### **DESIGN AND THIRD PARTY CONSULTATION**

- Analysis, Design and drawing of RCC and steel structures
- Third party inspection
- Proof Checking
- Estimation and costing



*For the Testing Consultancy work Contact :*

The Head Department of Civil Engineering

**A. J. Institute of Engineering and Technology,**

[hodcivil@ajiet.edu.in](mailto:hodcivil@ajiet.edu.in)

NH-66, Kottara Chowki, Mangalore- 575006

**Ph : 0824-2455048 | 0824-2862202 | 0824-2862203 Extn - 214**

## Consultancy Services Conducted on Department of Mechanical Engineering

### Objective:

Tensile, Compression, Bending and shear test to study mechanical properties

To conduct tensile test on mild steel specimen and to determine the following: Young's Modulus, Stress at limit of Proportionality, Yield Stress, Ultimate Stress, Breaking Stress, Actual breaking Stress, Percentage reduction in area, Percentage elongation and To plot the graph of load v/s elongation.

To study behaviour of compressive load and to find Modulus of elasticity, Compressive strength, % Decrease in length, % Increase in area. Study stress strain characteristics.

To conduct a deflection test on a metal beam specimen and to determine

1. The maximum bending stress that would be induced in the beam,
2. Young's modulus,

To determine the ultimate shear strength in single shear and double shear of Mild Steel Rod.

### **UTM. Specification:**

1000 KN with Electronic Extensometer and Mechanical Extensometer



## Impact Test on Materials

### Objective:

To find the Izod impact value for steel specimen.

To conduct Charpy impact test on standard steel specimen and to find. Out

- (a) Energy absorbed for fracture      (b) Impact strength with U-notch.

### Description

Impact testing machine, specimen, steel rule, Vernier caliper etc.

### Lab Specifications:

a) Charpy test - 300 Joules

b) Izod test - 160 Joules



## Study of wear and friction

### **Objective:**

To study the wear and frictional behavior of given specimen and to determine

1. Sliding distance
2. Wear factor.

### **Lab Specifications:**

Variable Speed, Variable Load Along with Lubrication / environmental Chamber



## Hardness testing on materials

### Objective:

To find the Vickers hardness number (V.H.N.) of the given Specimen.

To find the Rockwell hardness number (RHN) for different materials.

To determine the Brinell's hardness number of ferrous materials like mild steel, cast iron and non-ferrous materials like Brass, Aluminium, etc. (IS: 1700-1961)



Lab Specification: 250 - 3000Kgf



Lab Specifications: 0- 150 Kg



Lab Specifications : 0- 50 Kgf

## Fatigue Testing

### Objective:

To determine the Fatigue strength of the specimen

**Lab Specifications :** 10 mm



## Non-Destructive Testing(NDT)

To conduct ultrasonic flaw detecting test for the given specimen.

### Objective:

Apparatus : Ultrasonic flaw detector, probe , test Specimen

**Lab Specifications :** capacity - 0 to 250m



## Torque testing

### Objective:

To study the behaviour of mild steel under gradually increasing torque and to find

- i) Modulus of rigidity
- ii) Modulus of rupture
- iii) Tensional yield strength.

### Apparatus:

1. Torsion Testing Machine,
2. Vernier Calliper.

**Lab Specifications:** 200Nm



## Experimental Stress Analysis

## Polaris cope

### Objective:

To determine stress concentration factor for the given photo elastic specimen subjected to tensile load.

### Apparatus:

Circular disc prepared out of Photo elastic model material, Universal Loading Frame, 12" Diffused Light Transmission Polaris cope.

### Lab Specifications :

D=212.5mm, B=312.5mm



## 2D/3D drafting of engineering components

### Objective:



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Siemens AG, Munich, Germany  
Product Development/PLM/Software

## CNC auto code generation

### Objective:



### Flash and fire point

### Objective:

To determine the flash point of medium oil by Pensky Martin's (Closed Cup) apparatus.

To determine the flash point of given oil by Abel's Flash Point Apparatus.

To determine the flash and fire points of the given oil using Cleveland's open cup tester

### Abel Flash Point Closed Cup Setup Flash & fire point Cleveland apparatus

Lab Specifications: IP - 33

Lab Specifications: ASTM D92



## Flash and fire point

### **Pensky Marten's flash & fire point setup**

**Lab Specifications:** ASTM IP 34, D93



## Calorific value of solid and liquid

### **Digital Bomb Calorimeter**

#### **Objective:**

To determine the higher calorific value of the given solid (or liquid) fuel by Bomb Calorimeter.

**Lab Specifications :** IP-12 & ASTM-D4809



## Viscosity

### Redwood Viscometer No.1

#### Objective:

To determine Redwood Number, the Absolute and Kinematic viscosity of the given sample of oil at different temperatures using Redwood Viscometer.

**Lab Specifications :** IP-70



## Viscosity

### Saybolt Viscometer

#### Objective:

To determine the Absolute and Kinematic viscosity of the given sample of oil at different temperatures using Saybolt Viscometer.

**Lab Specifications:** ASTM-D88



## Torsion Viscometer

### Objective:

To determine the viscosity of the given sample of oil at different temperatures using Torsion Viscometer.

### Lab Specifications :

Cylinder Size -  $15/8''$ ,  $11/16''$   $1/4''$

Wire Gauge - 34 & 36



## Surface roughness

### Tally surf

To measure surface roughness parameter as per ISO Standards

### Apparatus:

Mitituyo make surface roughness tester, Calibrated specimen, Surface plate, Specimen

### Lab Specifications:



## Cutting force measurements

### Drill tool and lathe tool dynamometer

#### Objective:

Measurement of –Torque and Thrust|| forces by using Drill Tool Dynamometer.

Apparatus: Drill tool dynamometer, digital force indicator, work piece of any material and drilling machine.

To measure the cutting tool forces by using lathe Tool Dynamometer.

Apparatus: Lathe tool dynamometer, digital force indicator, work piece of any material and lathe machine tool.



## Drilling machine, cutting machine, welding machine, lathe machine

### Objective:

### Lab Specifications:

**TURNMASTER 350 SERIES** : Model Model : S803

Brand : Jinagoudra Machine Tools Pvt. Ltd.,

Centre Height : 175mm

Swing over bed : 350 mm

Swing over cross slide : 200 mm

Distance between : 800 mm

Bed type : 2 V and 2 flat

Bed width : 244 mm

Bed length : 1700 mm

Main spindle Nose type: American A2-4

Main Spindle Taper Bore : Metric 45

Main Spindle Taper bore in Center sleeve : MT-3

Main spindle bore: 40 mm.

Tail Stock Quill Diameter : 50 mm,

Tail Stock Taper Bore in Spindle : MT3

Tail Stock Quill Travel: 140 mm,

Tool Shank Section: 20 X 20 mm

Lead Screw Diameter : 25.4 mm,

Lead Screw Pitch : 6.0 mm

No. of Spindle Speed : 8 Nos,

Spindle Speed Range : 71-1800 RPM

No. of Longitudinal Feed : 24 No's,

No. of Transverse Feed : 24 No's

Threads Metric Range / No's : 0.5 to 7 mm / 24 No's Threads Inch Range /

No's : 56 to 4 TPI / 24 No's Threads Module Range / No's : 0.4 to 3.5 m / 24

No's Threads DP Range / No's : 8 to 70 DP / 24 No's

Power : 415V ,3ph,50 Hz With 3HP /2.2Kw Motor



### Lab Specifications:

Band Saw	Model	LX 1HS
	Capacity	200 mm
	Power	440 V, 50Hz, 0.75 KW
	Blade Size	3000 × 27 × 0.9 mm



Grill/windows/frames/bench/  
table/chair/welding

Objective:

**Lab Specifications:** 0-150 Amps



### **Bench / Pillar drilling machine**

Bench / Pillar drilling machine	Capacity	¾"
	Speed Range	86- to 3360 RPM
	Motor RPM	1440 RPM
	Power	440 V, 50Hz, 0.75 KW



**Consultancy Services on  
Electronics and Communication Engineering  
Consultancy services on  
Artificial Intelligence and Computer Engineering**

**For the Testing and Consultancy Work Contact**

**The Chief Consultancy Co-Ordinator**

**A. J. Institute of Engineering and Technology**

**sakethshetty@ajiet.edu.in**

**NH-66, Kottara Chowki, Mangalore - 575006**

**Ph:(+91) 7045136986 |(0824) 2455048| 2862202 | 2862203**

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## **COMPUTING LABORATORY 1(A324): Data Structures / Micro controller & Embedded Systems Lab**

### **Description**

The objective of the Data structure lab is to teach students various data structures and to explain their algorithms for performing various operations of data structures such as arrays, linked lists, stacks, queues, trees, graphs, hash tables and search trees.

Microcontroller and Embedded systems lab helps the students to enhance their knowledge on architecture, programming and interfacing of various processors and microcontrollers.

### **Lab Specification :**

Operating System: Windows 10 SL, UBUNTU 20.0 LTS

Programming Languages: C, C++

Softwares: GCC, Flash Magic, keil, micro-vision

No of Desktop Computers:36

Lab Area:132.7sq.mtrs

Amount of Lab:10,53,768.00

Configuration: Intel core i3-4170 /i3-9100 /i3-6100/i3-8100 Processor,  
4GB RAM,1TB HDD,64 Bit Operating System,18.5" Acer monitor,  
Acer Keyboard and Mouse.

UPS:20KVA, Switches:24 Port Giga, Internet:100mbps



## **COMPUTING LABORATORY 1 (A323):**

### **Computer Networks / Object Oriented Programming with JAVA**

#### **Description**

The objectives of the Object Oriented Concepts lab is to learn fundamental features of object oriented language and JAVA, to Set up Java JDK environment to create, debug and run simple Java programs. To Create multi-threaded programs and event handling mechanisms and to Introduce event driven Graphical User Interface (GUI) programming using applets and swings.

The objectives of the Computer Network lab is to demonstrate the application of layer protocols and to discuss transport layer services and understand UDP and TCP protocols. To study routers, IP and Routing Algorithms in network layer. Disseminates the Wireless and Mobile Networks covering IEEE 802.11 Standard and illustrates the concepts of Multimedia Networking, Security and Network Management.

#### **Lab Specifications :**

Operating System: Ubuntu 20.4 LTS

Programming Languages: C, C++, JAVA

Softwares: OpenGL, Sublime IDE Text, Jupyter note Book, Eclipse IDE.

No of Desktop Computers: 36

Lab Area: 130sq.meters

Amount of Lab: 12,30,563/-

Configuration: Intel Core I3-4170 CPU, 3.7GHz\*4 Processor, 4 GB/8 GB RAM, 500 GB Harddisk, Ubuntu 20.4 LTS, 64 Bit Operating system, 18.5 "Acer monitor, Acer Keyboard and Mouse.



## **COMPUTING LABORATORY3(A325): Python Lab / C# © Sharp)/ Mathematics Lab**

### **Description**

**The objective of mathematics Lab** to introduce the concept of random variables, probability distributions, specific discrete and continuous distributions with practical application in Computer Science Engineering and social life situations. To Provide the principles of statistical inferences and the basics of hypothesis testing with emphasis on some commonly encountered hypotheses.

**The objectives of the Python Lab** is an object-oriented language, which means that it supports concepts such as encapsulation, inheritance, and polymorphism. This makes it easy to write code that is reusable and easy to maintain. Cross-Platform Language.

**The objectives of the C# Lab** a general-purpose high-level programming language supporting multiple paradigms. C# encompasses static typing, strong typing, lexically scoped, imperative, declarative, functional, generic, object-oriented (class-based), and component-oriented programming disciplines.

### **Lab Specifications:**

Operating System : Windows 11 , UBUNTU 22.04LTS

Programming Languages : C ,Python, HTML

Software's : Jupyter note book ,Visual studio, Py-Charm

No of Desktop Computers:35

Lab Area:150sqmtrs, Amount of Lab:13,96,513.00

Configuration: Intel(R) Core (TM) i5-12400 12 th generation Processor,  
16GB RAM, 1TB M.2 SSD Acer USB keyboard & amp; USB Optical Mouse NVIDIA  
GT730 4GB DDR3 Graphic Card WIFI & amp; Bluetooth module Acer 19.5" Monitor.



## **COMPUTING LABORATORY 4(A322A): Skill Lab**

### **Description**

Computer science **skill Lab** play a vital role in today's digital age, where technology is rapidly evolving. In this article, we will explore the various computer science skills, both technical and soft, that are essential for success in this field. Whether you are a beginner looking to start a career in computer science or a professional aiming to enhance your skill set, understanding these skills and how to acquire them is crucial. Let's delve into the world of computer science skills and discover their significance in the ever-expanding tech landscape.

### **Lab Specification:**

Operating System: Windows 11 Pro ,Ubuntu 22.04 LTS

Programming Languages : Libre Office 5.1.6.2, GNU Compiler Collection For C,G++,

Application Softwares : Adobe Reader, Wamp Server 64.3

No of Desktop Computers: 12

Lab Area:75sq.mtrs

Amount of Lab:12,00,000.00

Configuration : Intel(R) Core (TM) i5-12400 12 th generation Processor; 16GB RAM, 1TB M.2 SSD Acer USB keyboard & amp ; USB Optical Mouse NVIDIA GT730 4GB DDR3 Graphic Card

WIFI & amp; Bluetooth module Acer 19.5" Monitor.



## **COMPUTING LABORATORY 5(A322) : Research Lab**

### **Description**

We have been observing that the current professional education system is moving towards innovative and entrepreneurship oriented educational system. The computer science & Engineering department of AJIET is proud to have research lab and Innovation Hub called "Centre of Excellence" with an aim to enable its students get first-hand experience in latest IT technologies and entrepreneurship as well.

The proposed Innovation Hub is intended with the most forward thinking to bridge the gap between the present professional educational curricula and IT industry with a mind to train our student to 100% employable, because many MNC based IT industry have stopped training on the current technology on which they are working. Due to this reason, many Finishing Schools have been started to train the students as per the industry requirements and some Finishing schools are introduced just for business.

This hub will also act as "Finishing School" to train the students as per the industry requirements, so that our students will be employable without training at the respective industry.

### **Lab Specification:**

Operating System : Windows 11 Pro, Ubuntu 22.0LTS

Programming Languages: Libre Office 5.1.6.2, GNU Compiler Collection For C,C++,

Application Software's : Adobe Reader, Wamp Server 64.3

No of Desktop Computers: 24, Lab Area:75sq. mtrs

Amount of Lab:20,00,000.00

Configuration : Intel(R) Core (TM) i5-12400 12 th generation Processor, 16GB RAM, 1TB M.2 SSD Acer USB keyboard & amp ; USB Optical Mouse NVIDIA GT730 4GB DDR3 Graphic Card WIFI & amp; Bluetooth module Acer 19.5" Monitor



## COMPUTING LABORATORY 6 (A304): Data Base Management Systems with Mini Project/ Mobile Computing & Android Development Lab

### Description

**The objective of Mobile application and Android development lab** is learn to setup Android application development environment. Illustrate user interfaces for interacting with apps and triggering actions. Appraise the role of security and performance in Android applications.

**The objectives of Data Base Management Systems with Mini Project Lab** is to learn about database concepts, technology and practice to groom students into well-informed database application developers. To practice in SQL programming through a variety of database problems and develop database applications using front-end tools and back-end DBMS.

### Lab Specifications:

Operating System: Windows 10 Pro, Ubuntu 20.4 LTS, 64 Bit.

Programming Languages: C, C++, SQL, Python

Softwares: Visual Studio Code, SQL Plus, Jupyter Notebook, Pycharm IDE., Android Studio

No of Desktop Computers: 36

Lab Area: 115sq mtrs

Amount of Lab: 12,30,563

Configuration: Intel core i3-9100 Processor, 8GB RAM, 1TB HDD, 64 Bit Operating System, 18.5" Acer monitor, Acer Keyboard and Mouse.



## COMPUTING LABORATORY 7 (A307): Computer Graphics/Full Stack Development Lab

### Description

**The objectives of the computer graphics and visualization lab** is to learn basic and fundamental computer graphics techniques, 3D image synthesis techniques, 3D modelling, design and visualization etc.

**The objectives of the full stack development lab** is the process of developing both the front end and back end of applications. Any application has a front end (user-facing) component and a back end (database and logic) component. The front end contains the user interface and code related to user interactions with the application.

### Lab Specifications:

Operating System: Windows 11Pro ,UBUNTU 22.04LTS

Programming Languages: C, Python

Softwares: OpenGL, Sublime IDE Text, Jupyter notebook

No of Desktop Computers: 35

Lab Area: 115sqmtrs

Amount of Lab: 20,00,000.00

Configuration: Intel(R) Core (TM) i5-12400 12 th generation Processor, 16GB RAM, 1TB M.2 SSD Acer USB keyboard & amp ; USB Optical Mouse NVIDIA GT730 4GB DDR3 Graphic Card  
WIFI & amp ; Bluetooth module Acer 19.5" Monitor.



## COMPUTING LABORATORY 8(A310) : Operating System/ Design and Analysis of Algorithm

### **Description**

**The objectives of the Operating System lab** is to learn concepts and terminology used in OS, Threading and multithreaded systems, process synchronization and concept of Deadlock. Introduces Memory and Virtual memory management, File system and storage techniques.

**The objectives of the Design and Analysis of algorithm lab** is to design and implement various algorithms in JAVA. Employ various design strategies for problem solving and to measure and compare the performance of different algorithms.

### **Lab Specifications:**

Operating System: Windows 10 /Windows 11 Pro

Programming Languages: C, C++ ,JAVA

Softwares: Eclipse

No of Desktop Computers: 30

Lab Area:115sq mtrs

Amount of Lab: 12,30,563.00

Configuration: Intel core i3-9100 Processor, 8GB RAM, 1TB HDD, 64 Bit Operating System, 18.5" Acer monitor, Acer Keyboard and Mouse.

Intel® Core (TM) i5-12400 12 th generation Processor, 16GB RAM, 1TB M.2

SSD Acer USB keyboard & amp ;USB Optical Mouse NVIDIA GT730 4GB DDR3

Graphic Card

WIFI & amp; Bluetooth module Acer 19.5" Monitor.



## **C Programming Lab(A112): / C++ Programming Lab**

### **Description**

**The objectives of the C Programming lab** is to provide students with understanding of code organization and functional hierarchical decomposition with using complex data types. After course completion the students will have the following learning outcomes: Understanding a functional hierarchical code organization.

**The objectives of C++ Programming lab** is to provide an in-depth knowledge about C++ and helps acquire a fundamental understanding of the input/output data management, arrays in C++, functions, classes, objects, pointers, and much more.

### **Lab Specifications:**

Operating System : Ubuntu 20.4 LTS

Programming Languages : C, C++

Softwares : Jupyter notebook

No of Desktop Computers: 33

Lab Area :115sq mtrs

Amount of Lab : 11,10,563.00

Configuration : Intel Core I3-4170 CPU, 3.7GHz\*4 Processor, 4 GB/8 GB RAM, 500 GB Hard disk, Ubuntu 20.4 LTS, 64 Bit Operating system, 18.5 "Acer monitor, Acer Keyboard and Mouse.



## **DIGITAL SIGNAL LABORATORY (A-223)**

### **Description**

The objective of this LAB is to enable the students to simulate and experiment with digital signals and systems and apply the theory they have studied in DSP courses. Students can implement digital signal processing algorithms using different computational platforms and DSP tools.

### **Lab Specification:**

SI No.	Equipment	Specification	Quantity
1	Computer	Intel Core I3 processor,4GB RAM, 1TB Hard Disk, Windows 10 OS/ Red Hat Enterprise Linux 6.9	30
2	Digital Signal Processor Kit	TMS320C6748	06
3	Function Generator	2MHz	02
4	Digital Storage Oscilloscope	Dual Channel, 50MHz	02
5	Octave	V4.4.1	
6	CC Studio	8.0	

Lab Area: 131.79sq.mtrs

Amount of Lab:24, 63,091

UPS:20KVA, Switches:24 Port Giga, Internet:100mbps



## **VLSI LABORATORY (A-223)**

### **Description**

The VLSI Laboratory is a Center of Excellence for training and research in CMOS integrated circuits and electronic system design. Our primary goal is to provide an ecosystem for fostering real-life, project-based learning for the next generation of engineering students.

### **Lab Specification:**

SI No.	Equipment	Specification	Quantity
1	Computer	Intel Core I3 processor, 4GB RAM, 1TB Hard Disk, Windows 10 OS/ Red Hat Enterprise Linux 6.9	30
2	Mentor Graphics	Tanner S-Edit, L-Edit,T-Spice,Eldo	25 Users
3	Nexys 4 - Artix 7 FPGA Kit		10
4	Zed board		02
5	Xilinx Vivado	Ver-2018.3	25 Users

Lab Area: 131. 79sq.mtrs

Amount of Lab:24, 63,091

UPS:20KVA, Switches:24 Port Giga, Internet:100mbps



## RESEARCH AND DEVELOPMENT LABORATORY(A-222)

### Description

Additional laboratory facilities are created in the department to improve the quality of learning, catering to the needs of the students. This laboratory is used to conduct project and research work and to meet the requirement of beyond working hours.

### Lab Specification:

SI No.	Equipment	Specification	Quantity
1	Computer	Intel Core I3 processor,4GB RAM, 1TB Hard Disk, Windows 10 OS	24
2	3D - Printer	Ender-3 V2 YUVA 2	01
3	PCB CNC Engraver	2418 Machine Assemble	01
4	MATLAB 2022a	Simulink, DSP Signal processing, Communications, Image processing, Partial differential, Syrabolic Math	5 Users

Lab Area: 128.92 sq m

Amount of Lab:13,74,428

UPS:20KVA, Switches:24 Port Giga, Internet:100mbps



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## COMMUNICATION LABORATORY (A-208)

### Description

The laboratory is equipped with basic experiment system and other necessary equipment for communications technology. Through experiments, students can enhance their knowledge of various modulation technologies, code error detection technology, and optical communications technology.

### Lab Specification:

Sl No.	Equipment	Specification	Qty
1.	Digital Storage Oscilloscope	Dual channel, 50 MHz	3
2.	Digital Storage Oscilloscope	Dual channel, 70 MHz	5
3.	Digital Storage Oscilloscope	Dual channel, 100 MHz	4
4.	Cathode Ray Oscilloscope	Dual channel, 30 MHz	16
5.	Function Generator	2MHz Frequency	8
6.	Function Generator	3MHz Frequency	10
7.	Function Generator	5 MHz Frequency	9
8.	Arbitrary Waveform Generator	25 MHz Frequency	2
9.	Fixed Regulated Power Supply	$\pm 12V/1A$ , $\pm 5/1A$	12
10.	Regulated Power Supply	Dual Channel, 0-30V/2A	10
11.	Regulated Power Supply	Single Channel, 0-30V/2A	10
12.	Optic Fibre Kit	600nm & 950nm wavelength	2
13.	LCR Meter		1
14.	Component Tester		1
15.	Microwave Test bench		1
16.	Microwave Strip Source		1
17.	Computer	Intel Core I3 processor,4GB RAM, 1TB Hard Disk, Windows 7 OS	3
18.	Temperature Trainer Kit	0-10V	1
19.	Pulse Code Modulation & Demodulation Kit	-	3
20.	PLL & Frequency Synthesizes Kit	-	3
21.	PAM, PWM,PPM Modulation & Demodulation Kit	-	3
22.	QPSK Transmitter & Receiver kit	-	2
23.	Octave	V4.4.1	
24.	LTspice	XVII	

Lab Area: 115.51 sq m

Amount of Lab:20,53,445.4

UPS:20KVA, Switches:24 Port Giga, Internet:100mbps



**AJIET**

# **A.J. INSTITUTE OF ENGINEERING & TECHNOLOGY, MANGALURU**

**(A Unit of Laxmi Memorial Education Trust<sup>®</sup>)**

**(Affiliated to VTU Belagavi, Karnataka, Approved by AICTE,  
New Delhi and Recognized by Govt. of Karnataka)**

**ACCREDITED BY NBA (BE : CV, CSE, ECE, ISE & ME)**

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