# Criterion 5

FACULTY INFORMATION AND CONTRIBUTIONS (200)

Innovations by the Faculty in Teaching and Learning

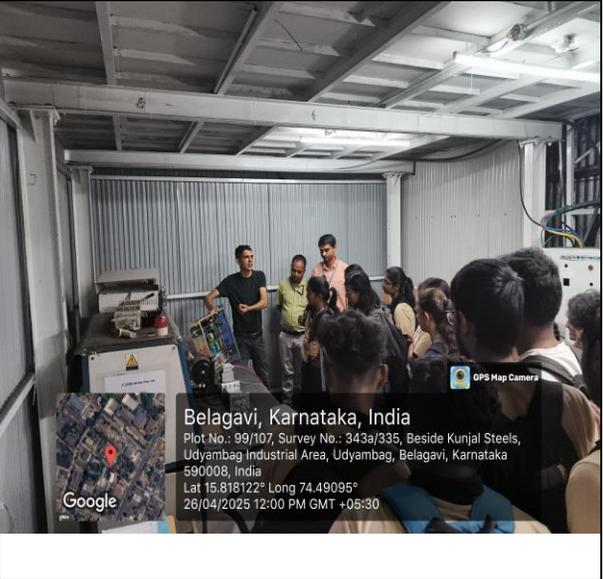| Sr.No.	Innovation in Teaching and Learning	Sample
1.	**Flipped Classroom**: A flipped classroom is an instructional and ambivalent strategy, and a type of blended learning that reverses the traditional learning environment. It moves activities, including those that may have traditionally been considered homework, into the classroom With a flipped classroom, students watch online lectures and collaborate in discussions, while actively engaging concepts in the classroom, with guidance of the faculty. **Flipped Classroom teaching:** • Strengthen steam-based skills. • Encourages engagement and attendance. • Promotes higher level classroom discussion.	

2.	**Profile based Teaching-Learning(PBTL):** Broadly, all human beings are categorized as Visual, Auditory and Kinesthetic (VAK), and combinations thereof. Each faculty in the department is profiled based on their modalities, such as Left-Right brain, VAK, Hedgehog-Fox, Self-Esteem, Leadership skills etc. With understanding of their profile, faculty can enhance their profile by mitigating their weakness. This methodology, namely profile-based teaching-learning, helps teachers to reach and connect with students of different learning modalities.	
3.	**Project based Learning(PBL):** During the pre-final year and final year, students are encouraged to carry out mini projects and capstone projects under the guidance of faculty. Further, students of first year and second year are encouraged to do mini projects /hobby projects to make them comprehend the theoretical aspects taught in the classrooms. The annual project exhibition is conducted every year to showcase their projects, and to encourage students to have interactions with their juniors, peers and senior students. Further, Faculties encourage students to refer IEEE- paper for their project work and encourage them to send their project proposals for sponsorship (KSCST).	
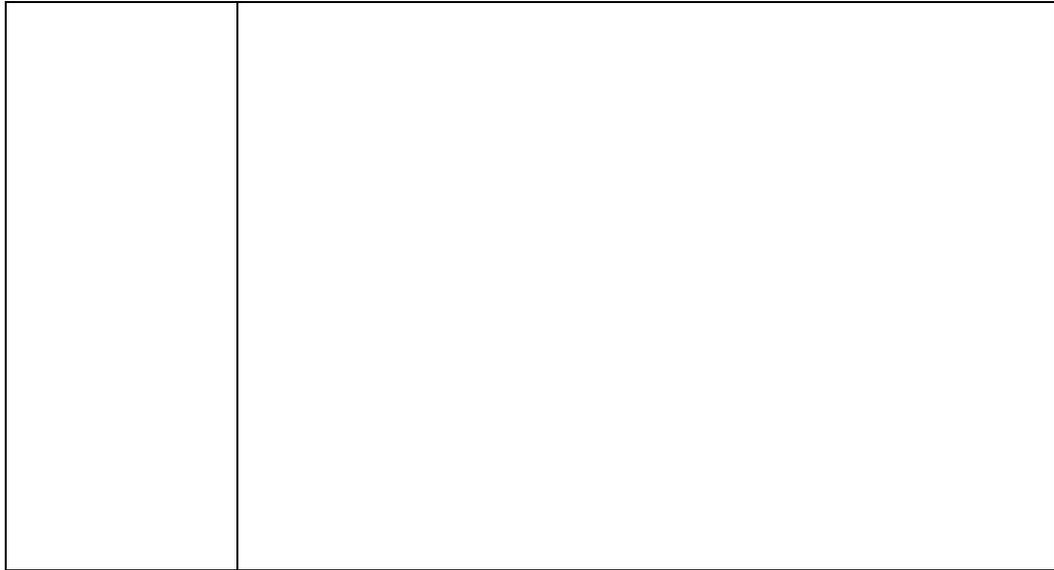
4.	**Experiential Learning (EL):** Experiential Learning is an engaged learning process whereby students learn by doing and by reflecting on the experience. Experiential Learning aims at recognizing and encouraging spontaneous opportunities for learning, engagement with challenging situations, experimentation, and discovery of solutions. Some forms of experiential learning include Internships, industrial visits, out-of-classroom community service experiences/projects (AICTE activity) etc.	

5.	**Collaborative Learning(CL) :** The students are initiated and motivated to learn from group activities such as group discussion, in-house internships, workshops conducted in the department. The students are exposed to learn various topics and hands-on experience under different laboratories, related to program curriculum.	
6.	**Activity based Learning (ABL):**Activity-based learning is rooted in the idea that students are active learners rather than passive recipients of information. If students are provided the opportunity to participate in activities and are provided with an optimum learning environment, then learning becomes more surreal(joyful) and long-lasting. Some forms of activity-based learning followed are debates, extempore activity, pick and speak session, activities conducted under in house clubs etc.	
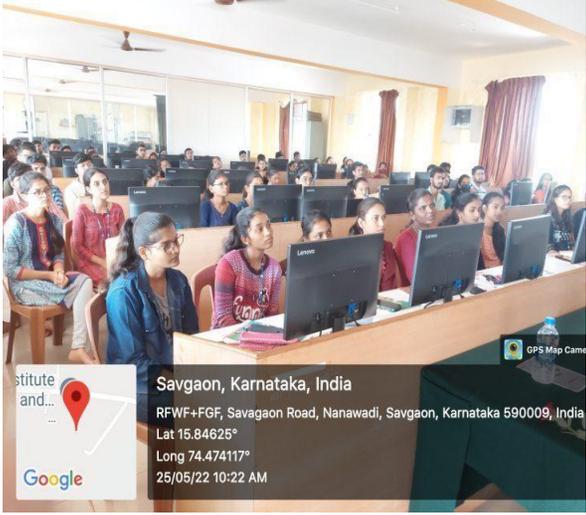
7.	**ICT supported learning (ICTL):** ICT tools such as power point presentation, Animations and various simulation tools are used to teach engineering concepts to the students. This is used to offer interactive learning experience. Also, each student is allocated one topic for each of the subjects. Student presents his topic in class covering the learnt concepts in innovative manner.	
8.	**Learning Via Online Certifications:** Students are promoted for online certifications courses such as Online NPTEL SWAYAM courses, VTU Honours, Minors, Skill Enhancement Courses, etc.	

9.	**Value Addition Programs:** Department organizes number of short-term value addition programs along with normal classroom teaching during the semester. Workshops/Technical talks are conducted for students as a part of addition programs	
10.	**Participation In Student Publication:** Department faculties guide the students for international paper publication.	
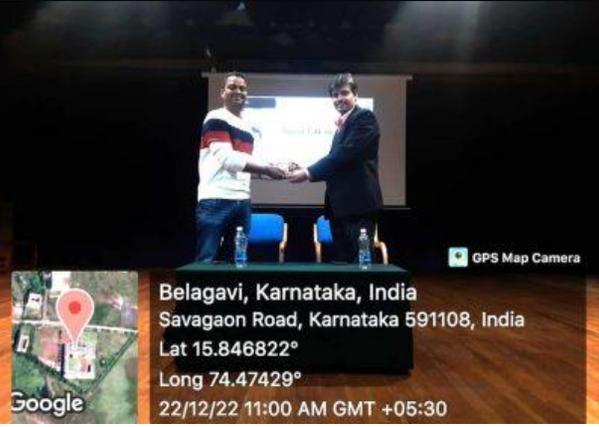
Faculty as participants in Faculty development / training activities / STTPs 2024-25

Sl. No	Name of the Faculty	FDP Name	College Attended	Date	No of Days
1	Sagar Birje	Introduction to Machine Learning	NPTEL	Jul-Oct 2024	12 week
2	Sagar Birje	Data Science Using Python	NPTEL	Jul-Oct 2024	12 week
3	Sagar Birje	Data Mining	NPTEL	Jan-March 2025	8 week
4	Chetan Patil	Advanced Embedded System using IOT	S.G. Balekundri Institute of Technology, Belgaum.	15.06.2025 to 20.06.2025	05
5	Vaibhav Chavan	Advanced Embedded System using IOT	S.G. Balekundri Institute of Technology, Belgaum.	15.06.2025 to 20.06.2025	05
6	Chetan Patil	Internet of Things for Sustainable Development	S.G. Balekundri Institute of Technology, Belgaum.	10.12.2024 to 16.12.2024	05
7	Chetan Patil	Exploring New Frontiers in Teaching Tools, AI and Data Analytics	MEASI Institute of Information Technology, Royapettah, Chennai.	29.07.2024 to 02.08.2024	05
8	Shradha Hanabaratti	Exploring New Frontiers in Teaching Tools, AI and Data Analytics	MEASI Institute of Information Technology, Royapettah, Chennai.	29.07.2024 to 02.08.2024	05
9	Chetan Patil	Program on AI and Gen AI with Industry Application	MIT Academy of Engineering, Maharastra, The National Institute of Engineering Mysore, NARASARAOPETA Engineering College, MATRUSRI Engineering College Telangana in Collaboration with ExcelR.Edtech, Pvt.Ltd.	16.07.2024 to 22.07.2024	05
10	Sagar Birje	Program on AI and Gen AI with Industry Application	MIT Academy of Engineering, Maharastra, The National Institute of Engineering Mysore, NARASARAOPETA Engineering College, MATRUSRI Engineering College Telangana in Collaboration with ExcelR.Edtech, Pvt.Ltd.	16.07.2024 to 22.07.2024	05

Faculty as participants in Faculty development / training activities / STTPs 2023-24

Sl.No	Name of the Faculty	FDP/STTP Name	College Attended	Date	No of Days
1	Sagar Birje	AWS using DevOps	CMR Engineering College	26.06.2023 to 30.06.2023	05
2	Chetan Patil	Robotics and Artificial Intelligence	VTU, Center for PG Studies VIAT, Muddenahalli, Chikkaballapur.	24.04.2023 to 28.04.2023	05
3	Dattatreya M Choudhari	Robotics and Artificial Intelligence	VTU, Center for PG Studies VIAT, Muddenahalli, Chikkaballapur.	24.04.2023 to 28.04.2023	05
4	Sagar Birje	Robotics and Artificial Intelligence	VTU, Center for PG Studies VIAT, Muddenahalli, Chikkaballapur.	24.04.2023 to 28.04.2023	05

Faculty as participants in Faculty development / training activities / STTPs 2022-23

Sl. No	Name of the Faculty	FDP Name	College Attended	Date	No of Days
1	Sagar Birje	Recent trends of AI for 5G Communication	AITM, Belagavi	04.01.2022 to 10.01.2022	07
2	Chetan Patil	Amazon Web Services	GITAM, Hyderabad, In Collaboration with BrainOVision Solutions India Pvt Ltd and AICTE.	22.08.2022 to 27.08.2022	06
3	Shivayogi Ullagadi	Amazon Web Services	GITAM, Hyderabad, In Collaboration with BrainOVision Solutions India Pvt Ltd and AICTE.	22.08.2022 to 27.08.2022	06
4	Pooja Kulinavar	Business Intelligence in Data Science	D Y Patil School of Engineering, Maharashtra.	30.01.2023 to 03.02.2023	05
5	Yasmeen Nargundbaba	Business Intelligence in Data Science	D Y Patil School of Engineering, Maharashtra.	30.01.2023 to 03.02.2023	05

Sponsored Research

Sr. No	Project Title	Funding Agency	Amount	Duration
1.	SPEAKSYNC- TRANSFORMING LIP MOMENT INTO TEXT WITH AI PRECESION	KSCST	3500.00	2024-25
2.	AGRITECH- AI- DRIVEN PLANT IDENTIFICATION, AGRICULTURE ASSISTANCE(CHATBOT) WITH DOCCERENABLED DEVELOPMENT	KSCST	3500.00	2024-25
3.	AUTOMATED WHITE BLOOD CANCER DETECTION FROM BONE MARROW USING CNN	KSCST	3000.00	2024-25
4.	RECOGNITION OF DRIVING LINCENSE FROM VEHICLE NUMBER PLATE USING DEEP LEARNING	KSCST	2000.00	2024-25
5.	CLOUD STORAGE DE - DUPLICATION WITH ENHANCED SECURITY	KSCST	2000.00	2024-25
6.	AN INTEGRATED SYSTEM FOR DEPRESSION DETECTION ANALYSIS AND PROVIDING PERSONALIZED SUPPORT	KSCST	3500.00	2023-24
	UNIFIED RE-VENDO- MACTIC	K-TECH	2,25,000.00	2022-25
7.	AUTOMATIC WASTE SEGREGATION TECHNOLOGY	K-TECH	2,72,500.00	2022-25
8.	AGRONE : UAV SYSTEM FOR DETECTING MULTICLASS PLANT DISEASES USING ML ALGORITHMS	K-TECH	2,00,000.00	2022-25
	TOTAL		7,15,000.00	

Development activities

- **Product Development**

"UNIFIED RE-VENDO- MACTIC"

K-TECH INNOVATION HUB (NAIN – NEW AGE INNOVATION NETWORK)

NAIN Start-Up Student Project Idea

Description:

Unified Re-vendo-matic machine is a reverse vending machine with integrated technology that will allow the user to insert the plastic bottles and plastic waste, and returns reward points in Nalo wallet ,and later the recycler can convert the reward points into money, depending upon the quantity of the waste recycled .

The Project was done under the Guidance of Prof.Chetan Patil, Faculty Artificial Intelligence and Data Science. The student team comprises of Miss. Aditi R. Burse, Mr. Rohan Roa, Mr. Krishnadev Miss. Aishwarya B, Miss Shifa H, Mr. Supreet L and Miss. Ranjita R of Department of Artificial Intelligence and Data Science, AITM Belagavi.

Dhanvam is an AI-powered personal finance APP.

Dhanvam is an AI-powered personal finance and advisory platform designed to help individuals manage, grow, and understand their finances more effectively. It provides personalized financial insights, expense tracking, goal setting, and investment suggestions using artificial intelligence and data analysis.

Key features include:

- ✓ Multilingual & Voice Support for accessibility and ease of use

- ✓ Smart Budgeting and Spending Insights based on user behavior

- ✓ AI-driven Financial Planning and advisory tools

- ✓ Reminders for Bills, Goals, and Deadlines

- ✓ Secure Data Handling with user privacy at the core

- ✓ Dhanvam empowers users to make informed decisions, reduce financial stress, and build long-term wealth—all in one intelligent platform.

Dhanvam

Quick Actions

| ⇅ Money Flow | + Add Transaction |
| Budget | Add Reminder |

Financial Insights

You've spent ₹3,800 on dining out this month, representing 25% of your total income. This is significantly above your target of 10%.

Upcoming Reminders

Netflix Subscription
Due in 3 days   ₹149

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Dhanvam

← Money Flow

Total Balance
₹9,369

| Credited ₹900 | Total Expense ₹448 |

All Transactions

Today

M Madhushree foods
Today at 16:34   -₹120

S Ramesh B
Today at 16:34   +₹900

M Novelty Dresses
Today at 16:34   -₹300

S Ruthvik
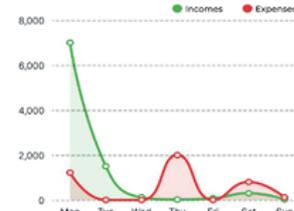Today at 16:34   +₹100

Yesterday

G Groceries
Yesterday at 16:34   -₹150

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Dhanvam

Analytics Dashboard   Daily ⌄

| Trends | Categories |

Incomes · Expenses

8,000
6,000
4,000
2,000
0
Mon Tue Wed Thu Fri Sat Sun

| Total Transactions | 10 |

Top Expense

M Madhushree foods
Today at 16:34   -₹120

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Dhanvam

Analytics Dashboard   Weekly ⌄

| Trends | Categories |

- Fuel
- Food
- Groceries
- Medical
- Bills
- Entertainment

9.3% 15.5%
18.6%
6.2%   27.1%
23.3%
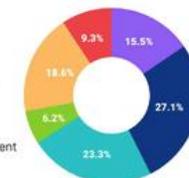
Spending Categories

🍔 Food   -₹ 1750

🛍️ Groceries   -₹ 1500

🧾 Bills   -₹ 1200

⛽ Fuel   -₹ 1000

🎬 Entertain   -₹ 600

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Vizyone an AI-powered, voice-controlled mobile application

Vizyone is an AI-powered, voice-controlled mobile application designed to empower visually impaired individuals with greater independence and accessibility. It combines advanced technologies such as computer vision, OCR, facial recognition with emotion detection, and indoor navigation to offer real-time audio assistance. With multilingual support for major Indian languages, offline functionality, and a user-friendly interface, Vizyone enables users to read documents, recognize people and objects, navigate complex indoor spaces, and interact socially with confidence. Unlike costly or limited global solutions, Vizyone is affordable, inclusive, and tailored for India's diverse population and accessibility needs. Vizyone is an AI-powered, voice-controlled mobile application designed to empower visually impaired individuals with greater independence and accessibility. It combines advanced technologies such as computer vision, OCR, facial recognition with emotion detection, and indoor navigation to offer real-time audio assistance. With multilingual support for major Indian languages, offline functionality, and a user-friendly interface, Vizyone enables users to read documents, recognize people and objects, navigate complex indoor spaces, and interact socially with confidence. Unlike costly or limited global solutions, Vizyone is affordable, inclusive, and tailored for India's diverse population and accessibility needs.

User Aksed: Read the text.

Fig: Vizyone reads the text aloud.

User Asked: Kya likha hai?

Fig: Vizyone reads the text aloud with real-time Hindi translation.

User Asked: What is in front of me?

Fig: Vizyone detects the objects.

User asked: How to get out of the room?
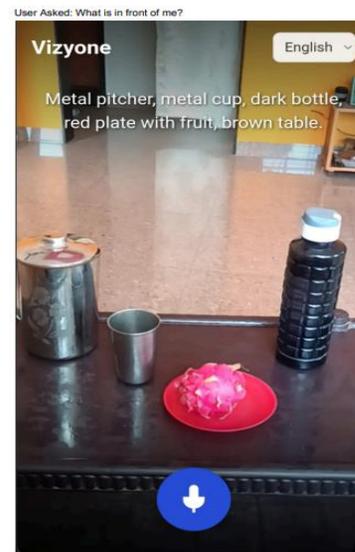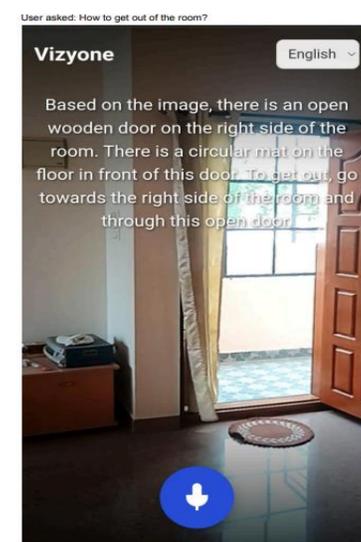
Fig: Vizyone can guide a person with directions

- **Research Laboratories**

1. **IOT Laboratory**

Internet of Things is a system of interrelated computing devices, mechanical and digital machines, objects, animals, or people that are provided with unique identifiers and transfer data over a network without requiring human-to-human or human-to-computer interaction. It combines embedded system devices with existing network infrastructure. The lab contains all the components needed to start the development of IoT-based systems. It includes many microcontroller boards like Arduino and Raspberry Pi, Wi-Fi modules, sensors, actuators, etc. IoT Lab helps the students to thoroughly understand the concepts of IoT and enables them to try out their own ideas. Since the setting up of the IoT lab, the department has organized activities like IoT-related seminars, project exhibitions, competitions, etc
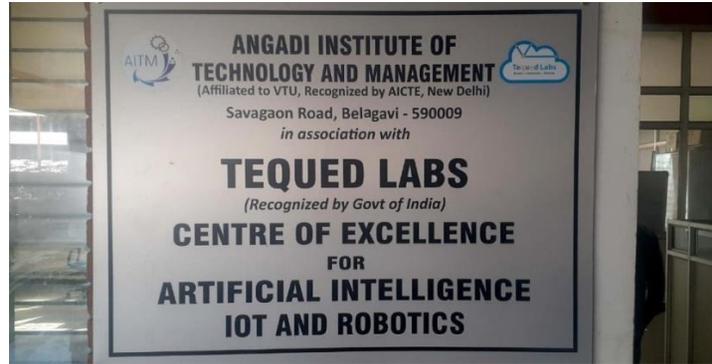
2. **Industry Supported Laboratory (AI Labs):**

The industry supported laboratories develops best learning process using a comprehensive understanding of industry's best practices for both students and faculties. This initiative imbibes professionalism, behaviour aspects and awareness about industry expectations and also aligns aspirations of the students with the needs of the industries and promotes career counseling by organizing guidance lectures by senior corporate personnel.

The details of the industry supported laboratory are as follows.

Sl. No.	Lab	Industry	Objective	Lab components provided
1.	Tequed Labs (AI and Robotics Lab)	R & D innovation hub focused on providing quality education on latest and cutting-edge technologies to students and specialized in software hardware development along with placement training.	To set up a lab for AI, IoT and Robotics and deliver orientation programs, guest lectures, conduct hackathon, project expo and promote entrepreneurship.	- 3Dprinterwithfilament - IoT Kits - Robotics kits - AI development Boards - Amazon Alexa - Virtual Reality Headsets - Voice Recognition kits - AWS Cloud credits - Battery Packs

Table5.7.3.2: Details of Industry Supported Laboratory

ANGADI INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(Affiliated to VTU, Recognized by AICTE, New Delhi)
Savagaon Road, Belagavi - 590009
in association with

TEQUED LABS
(Recognized by Govt of India)
CENTRE OF EXCELLENCE
FOR
ARTIFICIAL INTELLIGENCE IOT AND ROBOTICS

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("MoU") is made on July 21st 2020, by and between:

Angadi Institute of Technology & Management

and

TEQUED LABS PVT LTD

Angadi Institute of Technology & Management, an entity incorporated under the laws of India represented by its Principal. (Here in after referred as "AITM").

AND

TEQUED LABS PRIVATE LIMITED -having its Registered Office No 10, BSK 3rd Stage, Bangalore, Karnataka, India, 560085 (hereinafter referred to as "TEQUED LABS"):

AITM and TEQUED LABS shall hereinafter be collectively referred to as "Parties" and individually as "Party"

WHEREAS

A. **AITM** is specialized in providing value-added, holistic engineering education to students at affordable costs, in conducive academic ambience, leading to Personality development and intellectual growth.

B. **TEQUED LABS** is an R&D Innovation Hub and educational institute which is focused on providing quality education on latest and cutting-edge technologies to students and also specializing in software/ hardware Development along with Placement Training. The goal of the company is to promote innovation, entrepreneurship and also increasing employability quotient thus making them Job- Ready.

C. The Parties wish to co-operate with each other as per the terms and conditions enumerated in this MoU.

AdityaSK

TEQUED LABS PVT. LTD.
No. 10, Anjaneya Nagar,
BSK 3rd Stage,
BANGALORE - 560 085.

Lab Setup

Tequed Labs will invest an amount of 2-3 Lakhs and set up Innovation Center / Centre of Excellence. Following set of components shall be provided

1. 3D printer with filament
2. IoT Kits (Boards, Sensors, Connectors, Wires etc)
3. Robotics Kits (5 Nos)
4. Artificial Intelligence Development Boards
5. Amazon ALEXA
6. Virtual Reality Headsets -10
7. Voice Recognition Kits
8. AWS Cloud Credits
9. Battery Packs for Electric Vehicle development

Paid Workshops / Events

Tequed labs will charge a nominal fee for all the workshops and Skill Development Programs which will be conducted for all students from different branches in the college under the COE.
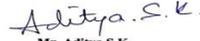
AdityaSK

TEQUED LABS PVT. LTD.
No. 10, Anjaneya Nagar,
BSK 3rd Stage,
BANGALORE - 560 085.

IN WITNESS THEREOF, each of **AITM** and **TEQUED LABS** – having its Registered Office No 10, BSK 3rd Stage, Bangalore, Karnataka, India, 560085 has caused this MoU to be signed and delivered by its duly authorized representative.
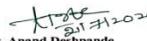
Dr. Anand Deshpande
Principal
AITM
Belgaum

Mr. Supreeth Y S
Director and CEO
TEQUED LABS
Bangalore
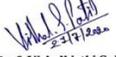
Prof. Vishalkirthi S. Patil
Placement Officer
Electronics & Communication
Faculty Co-ordinator
AITM
Belgaum

Mr. Aditya S K
Director and CTO
TEQUED LABS
Bangalore

TEQUED LABS PVT. LTD.
No. 10, Anjaneya Nagar,
BSK 3rd Stage,
BANGALORE - 560 3

Date :

Date: 21/07/2020

Figure5.7.3.2:MoU with Tequed Labs

- **Instructional materials:**

The Department maintains the following instructional material that helps in teaching learning process:

• Lab manuals for each lab

• E-Links

SURESH ANGADI EDUCATION FOUNDATION'S
ANGADI INSTITUTE OF TECHNOLOGY AND MANAGEMENT
Savagaon Road, BELAGAVI – 590 009.
(Approved by AICTE, New Delhi &Affiliated to Visvesvaraya Technological University, Belagavi, Accredited by NAAC)

Department of Artificial Intelligence and Data Science

MACHINE LEARNING LAB
BCSL606

Prepared By:

Prof.Vaibhav M. Chavan
Assistant Professor, AI and DS, AITM, Belgaum.

Prof.Sagar J. Birje
Assistant Professor & HOD,AI and DS, AITM, Belgaum.

Machine Learning lab		Semester	6
Course Code	BCSL606	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	0:0:2:0	SEE Marks	50
Credits	01	Exam Hours	100
Examination type (SEE)	Practical		

Course objectives:
- To become familiar with data and visualize univariate, bivariate, and multivariate data using statistical techniques and dimensionality reduction.
- To understand various machine learning algorithms such as similarity-based learning, regression, decision trees, and clustering.
- To familiarize with learning theories, probability-based models and developing the skills required for decision-making in dynamic environments.

Sl.NO	Experiments
1	Develop a program to create histograms for all numerical features and analyze the distribution of each feature. Generate box plots for all numerical features and identify any outliers. Use California Housing dataset. **Book 1: Chapter 2**
2	Develop a program to Compute the correlation matrix to understand the relationships between pairs of features. Visualize the correlation matrix using a heatmap to know which variables have strong positive/negative correlations. Create a pair plot to visualize pairwise relationships between features. Use California Housing dataset. **Book 1: Chapter 2**
3	Develop a program to implement Principal Component Analysis (PCA) for reducing the dimensionality of the Iris dataset from 4 features to 2. **Book 1: Chapter 2**
4	For a given set of training data examples stored in a .CSV file, implement and demonstrate the Find-S algorithm to output a description of the set of all hypotheses consistent with the training examples. **Book 1: Chapter 3**
5	Develop a program to implement k-Nearest Neighbour algorithm to classify the randomly generated 100 values of x in the range of [0,1]. Perform the following based on dataset generated. a. Label the first 50 points $\{x_1,\ldots\ldots,x_{50}\}$ as follows: if ($x_i \le 0.5$), then $x_i \in$ Class$_1$, else $x_i \in$ Class$_1$ b. Classify the remaining points, $x_{51},\ldots\ldots,x_{100}$ using KNN. Perform this for $k=1,2,3,4,5,20,30$ **Book 2: Chapter – 2**
6	Implement the non-parametric Locally Weighted Regression algorithm in order to fit data points. Select appropriate data set for your experiment and draw graphs **Book 1: Chapter – 4**
7	Develop a program to demonstrate the working of Linear Regression and Polynomial Regression. Use Boston Housing Dataset for Linear Regression and Auto MPG Dataset (for vehicle fuel efficiency prediction) for Polynomial Regression. **Book 1: Chapter – 5**
8	Develop a program to demonstrate the working of the decision tree algorithm. Use Breast Cancer Data set for building the decision tree and apply this knowledge to classify a new sample. **Book 2: Chapter – 3**

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ANGADI INSTITUTE OF TECHNOLOGY AND MANAGEMENT
Savagaon Road, BELAGAVI – 590 009.
(Approved by AICTE, New Delhi &Affiliated to Viavesvaraya Technological University, Belagavi, Accredited by NAAC)

AITM

Department of Artificial Intelligence and Data Science

DATABASE MANAGEMENT SYSTEM LAB
BCS403

Prepared By:

Prof.Shradha H. Chavan
Assistant Professor, AI and DS, AITM, Belgaum.

Prof.Sagar J. Birje
Assistant Professor & HOD,AI and DS, AITM, Belgaum.

PRACTICAL COMPONENT OF IPCC *(May cover all / major modules)*

Sl.NO	Experiments
1	Create a table called Employee & execute the following. **Employee(EMPNO,ENAME,JOB, MANAGER_NO, SAL, COMMISSION)** 1. Create a user and grant all permissions to theuser. 2. Insert the any three records in the employee table contains attributes EMPNO,ENAME JOB, MANAGER_NO, SAL, COMMISSION and use rollback. Check the result. 3. Add primary key constraint and not null constraint to the employee table. 4. Insert null values to the employee table and verify the result.
2	Create a table called Employee that contain attributes EMPNO,ENAME,JOB, MGR,SAL & execute the following. 1. Add a column commission with domain to the Employeetable. 2. Insert any five records into the table. 3. Update the column details of job 4. Rename the column of Employ table using alter command. 5. Delete the employee whose Empno is 105.
3	Queries using aggregate functions(COUNT,AVG,MIN,MAX,SUM),Group by,Orderby. **Employee(E_id, E_name, Age, Salary)** 1. Create Employee table containing all Records E_id, E_name, Age, Salary. 2. Count number of employee names from employeetable 3. Find the Maximum age from employee table. 4. Find the Minimum age from employeetable. 5. Find salaries of employee in Ascending Order. 6. Find grouped salaries of employees.
4	Create a row level trigger for the customers table that would fire for INSERT or UPDATE or DELETE operations performed on the CUSTOMERS table. This trigger will display the salary difference between the old & new Salary. **CUSTOMERS(ID,NAME,AGE,ADDRESS,SALARY)**
5	Create cursor for Employee table & extract the values from the table. Declare the variables ,Open the cursor & extrct the values from the cursor. Close the cursor. **Employee(E_id, E_name, Age, Salary)**
6	Write a PL/SQL block of code using parameterized Cursor, that will merge the data available in the newly created table N_RollCall with the data available in the table O_RollCall. If the data in the first table already exist in the second table then that data should be skipped.
7	Install an Open Source NoSQL Data base MangoDB & perform basic CRUD(Create, Read, Update & Delete) operations. Execute MangoDB basic Queries using CRUD operations.

Course outcomes (Course Skill Set):
At the end of the course, the student will be able to:
- Describe the basic elements of a relational database management system
- Design entity relationship for the given scenario.
- Apply various Structured Query Language (SQL) statements for database manipulation.
- Analyse various normalization forms for the given application.
- Develop database applications for the given real world problem.
- Understand the concepts related to NoSQL databases.

Assessment Details (both CIE and SEE)
The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum

VIDEO LINKS:

| SL. NO	Faculty Name	Subject	Topic Name	Link
1	Prof. Sheetal B. Patil	Data Structure Applications	Introduction To Data Structure	https://www.youtube.com/watch?v=yu0sD9Jaw18
2	Prof. Girish shivanagudi	Data Structure Applications	Graph	https://www.youtube.com/watch?v=jqUYrEy6v34
3	Prof. Girish shivanagudi	Data Structure Applications	Union Declartion	https://www.youtube.com/watch?v=7sHaGy_b17s
4	Prof. Girish shivanagudi	Data Structure Applications	Arrays	https://www.youtube.com/watch?v=z8zrg9KPq9g
5	Prof. Girish shivanagudi	Data Structure Applications	Representation Of Linear	https://www.youtube.com/watch?v=XNIyD-gkKm8
6	Prof. Girish shivanagudi	Data Structure Applications	Array In Memory	https://www.youtube.com/watch?v=6uoD3RUCxR8
7	Prof. Girish shivanagudi	Data Structure Applications	Pointer	https://youtu.be/Td7Jaw_13Hc
8	Prof. Girish shivanagudi	Data Structure Applications	Advantages Of Pointer And	https://www.youtube.com/watch?v=WybxCjd14DM
9	Prof. Sagar Birje	Analog and Digital Electronics	Introduction	https://www.youtube.com/watch?v=Ccfoue631iU
10	Prof. Sagar Birje	Analog and Digital Electronics	Boolean Algebra	https://www.youtube.com/watch?v=x24rtw54Hg4
11	Prof. Sagar Birje	Analog and Digital Electronics	Switching Functions	https://youtu.be/pNTpoRXIB7k
12	Prof. Sagar Birje	Analog and Digital Electronics	Sop	https://www.youtube.com/watch?v=93pE0-5Ug5Y
13	Prof. Sagar Birje	Analog and Digital Electronics	S' R' Latch Using Nand Gate|	https://www.youtube.com/watch?v=rLVMZ4nmORE&list=PLkDKDMoaCuYWEBIfNEObnpyNvQ68p1DGV&index=1
14	Prof. Sagar Birje	Analog and Digital Electronics	Switch Debounce	https://www.youtube.com/watch?v=5Hx4fKj8d9Y&list=PLkDKDMoaCuYWEBIfNEObnpyNvQ68p1DGV&index=2
15	Prof. Sagar Birje	Analog and Digital Electronics	S R Latch	https://www.youtube.com/watch?v=VL_MOtLOGS8&list=PLkDKDMoaCuYWEBIfNEObnp
16	Prof. Sagar Birje	Analog and Digital Electronics	Multiplexer Introduction	https://youtu.be/9r2OZ2J9h0A
17	Prof. Sagar Birje	Analog and Digital Electronics	Mev Rules & Example	https://youtu.be/_ESHILAqgK0
18	Prof. Sagar Birje	Analog and Digital Electronics	Mev Introduction	https://youtu.be/uficzaWKhEvA
19	Prof. Sagar Birje	Analog and Digital Electronics	Patrick's Method	https://www.youtube.com/watch?v=uficzaWKhEvA&list=PLkDKDMoaCuYWEBIfNEObnpyNvQ68p1DGV&index=7
20	Prof. Sagar Birje	Computer Organization	Basic Structure Of Computers	https://youtu.be/GgYVusuzx0A
21	Prof. Sagar Birje	Computer Organization	Functional Units Of Computer	https://youtu.be/CJXc-Ri-rlQ
22	Prof.Sanjana Kawatagi	Computer Organization	Basic Operational Concepts	https://youtu.be/GwDtIlOe8Tc
23	Prof.Sanjana Kawatagi	Computer Organization	Single Bus Structure	https://youtu.be/HBARSXVVIWo
24	Prof.Sanjana Kawatagi	Computer Organization	Addressing Modes	https://youtu.be/b_Q6hUKRvFw
25	Prof.Sanjana Kawatagi	Computer Organization	Additional Instructiuons	https://youtu.be/EDwR6kqn5ZI
26	Prof.Sanjana Kawatagi	Computer Organization	Interrupts_vectored interrupts_interrupt nesting	https://youtu.be/uqgYlqXNCYo
27	Prof.Sanjana Kawatagi	Computer Organization	Buses_Asynchronous bus	https://youtu.be/Cklp5YXdOT4
28	Prof. Rajeshwari Kisan	Discrete Mathematical Structures	Discrete Mathematical Structures	https://drive.google.com/drive/folders/1jbKp3Gx8NVKuGkGsoiOe2jNV_xaiKcM3v?usp=sharing
30	Prof.Rajeshwari Kisan	Computer Networks and Security	Peer to Peer File Applications	https://youtube.com/playlist?list=PLKq-JcD2oHAP84VBNEJnJmvQUX06RXcfP
29	Prof.Manjunath Patil	Computer Networks and Security	Network Layer/DNS Records & M	https://youtube.com/playlist?list=PLkDKDMoaCuYW7JBnRgDIfoUeghEqlhZsu
31	Prof.Manjunath Patil	Computer Networks and Security	Network Layer/DNS Records & M	https://youtube.com/playlist?list=PLkDKDMoaCuYW7JBnRgDIfoUeghEqlhZsu

E BOOKS LINKS:

Sl.No	Subject Name	Author	Web Link
1.	Machine Learning	Tom M Mitchell	https://www.cin.ufpe.br/~cavmj/Machine-Learning-Tom Mitchell.pdf
2.	Data Structures And Applications	Ellis Horowitz and Sartaj Sahni	https://drive.google.com/file/d/1oZRznI4xSOUkosa8ybJW8v PaATvz lR3w/view?usp=share_link
3.	Analog And Digital Electronics	Charles H.Roth	https://drive.google.com/file/d/1-o6cR cmunePkDVvnEFsNxatfxfyGjs/view?usp=share_link
4.	Computer Organization	William Stallings	WilliamStallings-ComputerOrganizationandArchitecture D.pdf - Google Drive
5.	Computer Organization Architecture	William Stallings	https://drive.google.com/file/d/1eIFPupDDf3EihTIAg6fZXn3 5t F9CFcPi/view?usp=share_link
6.	Software Engineering	Ian Sommerville	SoftwareEngineeringtextbook9thEdition.pdf (google.com)
7.	Discrete Mathematical Structures	Ralph P Grimadli	https://drive.google.com/file/d/1PHIlDV7udv7YLf3c4QDo -EaSJOuDt36N/view?usp=share_link
8.	DesignAnd AnalysisOf Algorithms	Anany Levitin	https://drive.google.com/file/d/1jUqP8oVCjpSF-YmHtX3SgX1cQi8NmyKi/view?usp=share_link
9.	Operating Systems	Abraham Silberschatz, Peter Baer Galvin, Greg Gagne	OPERATING SYSTEMPRINCIPLES,7THED-AbrahamSilberschatz,PeterBaerGalvin,GregGagne-Google Books
10.	Microcontroller And Embedded	Edward Ashford Lee And Sanjit	https://drive.google.com/file/d/1_p2RgGNasZ5yUtjV6FFV _lvBYmyX

	Systems	Arunkumar Seshia	hIkC/view?usp=share_link
11.	Object Oriented Concepts	Herbert schildt.	javathecompletereference,7thedition-herbertschildt.pdf -GoogleDrive
12.	Data Communication	Behrouz A. Forouzan	DataCommunicationsandNetworkingByBehrouz A.Forouzan.pdf- GoogleDrive
13.	Management And Entrepreneurship For It Industry	P.C. Tripathi,P.N. Reddy	https://drive.google.com/file/d/1D7r7SXzv0Zv0rj45SCtpTr1p WMlC EiA3/view?usp=share_link
14.	Computer NetworksAnd Security	James F Kurose and Keith W Ross	ComputerNetworking ATopDownApproach6thEditionBy Kurros and Ross.pdf (google.com)
15.	Database Management System	Ramez Elmasri and Shamkant B. Navathe	https://drive.google.com/file/d/1RQM2wNomRLKb0NnT0ID yR750nnI8fGy p/view?usp=share_link
16.	Automata Theory And Computability	Elaine Rich	https://drive.google.com/file/d/1JUUuyUVdx0CUBh- SAd3epICS-DMlyfY5/view?usp=share_link
17.	Application Development UsingPython	Al Sweigart	http://greenteapress.com/thinkpython2/thinkpython2.pdf
18.	Unix Programming	Sumitabha Das	YourUNIXtheultimateguideSumitabhaDas.1387537707.pdf (usermanual.wiki)

- **Working models, charts, monograms**

WORKING MODELS:

"UNIFIED RE-VENDO- MACTIC"
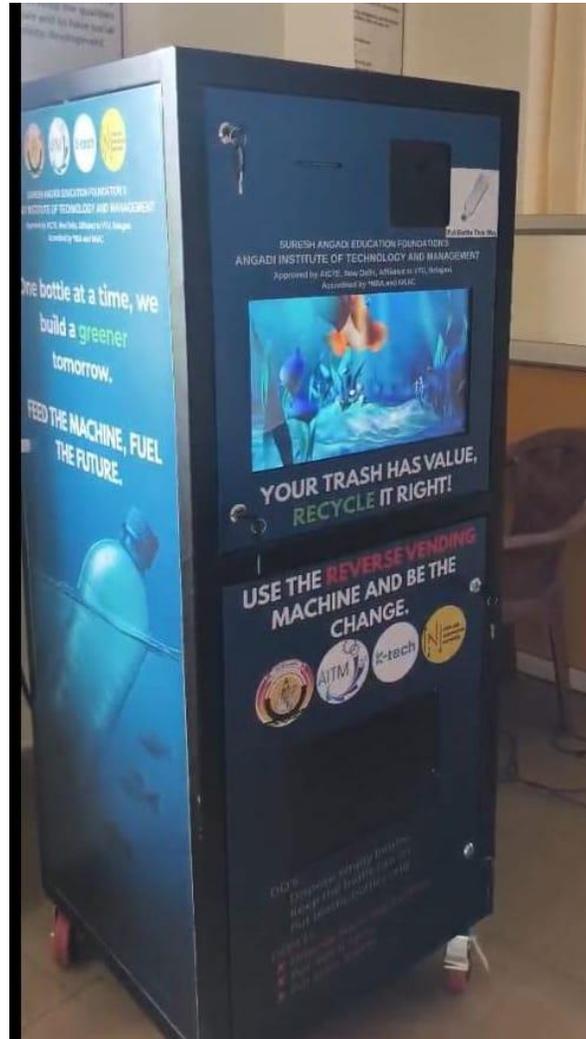
CHARTS:

Charts related to respective subjects are well placed in laboratories.