



THREE DAY FACULTY DEVELOPMENT
PROGRAMME ON
**"IOT BASED AUTONOMOUS
ROBOT DESIGN"**



28th April to 30th April 2021

Sponsored by
**APJ Abdul Kalam
Technological University**



Organized by
**Department of Electronics &
Instrumentation Engineering**

ABOUT THE INSTITUTION

Vimal Jyothi Engineering College (VJEC) is an educational project of the Archdiocese of Thalassery established in the year 2002 and is managed by Meshar Diocesan Educational Trust. The college is approved by AICTE and affiliated to APJ Abdul Kalam Technological University (KTU). VJEC is a self-financing catholic minority institution aiming at generating fervor for Engineering and Technology in students. Here we inspire, nurture and foster them to realize their career potential in the field of Engineering and Technology. B.Tech. Programmes in Computer Science and Engineering, Electrical and Electronics Engineering, Mechanical Engineering and Civil Engineering are accredited by the National Board of Accreditation (NBA). The institution is also accredited by NAAC and certified by ISO

ABOUT THE DEPARTMENT

Department of Electronics and Instrumentation Engineering was started in the year 2005. The department offers both PG & UG courses, B.Tech in Applied Electronics and Instrumentation started in the year 2005 and M.Tech in Control and Instrumentation in 2013. The course mainly concentrates on the application of electronics and instrumentation. The Department of Electronics and Instrumentation is deeply committed to provide high - quality undergraduate and postgraduate education.

The course has a comprehensive curriculum aimed to provide knowledge, in both theoretical and practical aspects of Instrumentation, with an emphasis on practical learning.

ABOUT THE PROGRAMME

Automation in industry has been geared up after the commencement of Industry 4.0. These fields contribute significantly on future AI based systems in Industry and Society. The level of autonomy is growing gradually with less intervention of human being in manufacturing. Since the next generation industries need engineers with an interdisciplinary attitude and experience to meet the future demands. This FDP is aimed to explore the potential areas and significance in the field of Industrial robotics and automation

WHO CAN ATTEND?

Faculty Members from Engineering Colleges (Affiliated to APJ Abdul Kalam Technological University) in Kerala.



TOPICS TO BE COVERED

- Hardware aspects in robot design
- Difference between microcontroller and microprocessor
- Demonstration and Discussion on Analog, Digital and Serial INPUT/OUTPUT devices
- Controlling DC geared motor using L293D motor driver and Arduino
- Stepper motor, Industrial servo motor
- Mecanum wheeled robot
- LIDAR and autonomous robots
- Building line follower robot for international competitions
- Introduction to PLC, VFD, HMI, Stepper motor controller, and Servo motor controllers

Software concepts in robot design

- Open cv and python
- Capturing image and displaying
- Edge Detection
- Morphological Operation
- Color Detection with ball tracking application
- Feature Matching
- SIFT
- Features from the Accelerated Segment Test (FAST)
- BRIEF
- Face tracking and detection
- Object Detection
- Introduction to deep neural networks

Research and applications in mobile robot

- Mobile robot kinematics and dynamics
- Mobile robot application
- An introduction to recent trends and design aspects of robotic manipulators

RESOURCE PERSONS

1. Mr. Sunil Paul, Co-founder and CEO of Srishti Robotics Technologies Pvt. Ltd., Cochin
2. Mr. Arun Babu S, Chief Operating Officer, Bitsforge Embedded Systems, Cochin
3. Dr. Rajalakshmi, Professor, Karunya University, Coimbatore
4. Dr. Pamela, Professor, Karunya University, Coimbatore
5. Dr. A P Sudheer, Assistant Professor, NIT Calicut

CONTACT

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For Registration

<https://forms.gle/YDykece7bR7DRGTA6>



Last date for Registration: 24th April 2021
E-certificate will be provided after the successful completion of the FDP

Organizing committee

Chief Patron: Rev. Fr. James Chellamkottu – Manager,
Vimal Jyothi Group of Institutions

Patron:- Dr. Benny Joseph, Principal, VJEC

Co-Patron:- Dr. G Glan Devadhas, Vice-Principal, VJEC

Convener:- Dr. V. Sampath Kumar, Professor & HOD, E&I Dept

Coordinators:

Mr. Dhanoj M, Assistant Professor, E&I

Mr. Shinu M M, Assistant Professor, E&I

Committee Members:

Mrs. Shamy A, Assistant Professor, E&I

Mrs. Reshma K V, Assistant Professor, E&I

Mrs. Jinsa Mathew, Assistant Professor, E&I

VISION & MISSION OF DEPARTMENT

- The department strives to enrich professionals of high competency in the arena of Instrumentation Engineering & mould them to adopt the crux of matter in the field of Automation.
- To prepare the students to envisage beyond the hypothetical thinking & belong to a new era of acquisition & application of Instrumentation Technology to meet the requisition of the changing World.

COURSE OUTCOME

After the completion of the course, the participants will be able to

1. Understand the basics of Robotic design
2. Get introduced to new software used for robot design
3. Extrapolate their views and study for the research activities