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METRON

DEPARTMENT OF ELECTRONICS AND INSTRUMENTATION

VISION

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

MISSION

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

INSIDE THIS ISSUE

"To give Real service, you must add something which cannot be bought or measured with money" .
Sir M Visvesvaraya

COVID BUSTER

With the Technical knowledge to boost the efforts to defent the COVID-19, Four students of VJEC developed an automated QR code based thermal scanner ' COVID BUSTER'. The system used to alert the authority if the temperature of a person is beyond the normal temperature. The product can be implemented in any institute such as college, school, or other in places such as shopping malls, offices, etc. Mar Joseph Pamplany, the Auxilairy Bishop of Tellicherry, Chairman VJEC, Innagurated the Covid Buster placed in Vimal Jyothi Engineering college. Mr. Robin Jose of Electronics & Instrumentation Department, Mr. Aromal Joseph, Mr. Josekutty George & Ms.Ashly Renjith of Computer Science department are the students who developd the product with the guidance of Ms. Divya B & Ms. Vidhya, assistant Professors of CSE under the part of Software Development Cell VJEC.

SIX WAYS AUTOMATION HELPS DURING A PANDEMIC

Engineering support extends to automation, controls and instrumentation to help with COVID-19 responses.

Hands-off production: In general automation and controls enable production without humans, maintaining, quality, consistency,safety and throughput at high levels to help sustain critical supply chains. Sensors measure, send signals to controllers, which make decisions, and tell an actuator what to do. Secure networks transmit information, and software optimizes processes. Laboratory automation increases testing throughput.

Automation upgrades to separate humans: System integrators and original equipment manufacturers (OEMs) are examiningdesigns of machines and lines to add separation between humans where possible by integrating more robotics (stationary, mobile, and collaborative), wireless secure human-machine interfaces (HMIs) and smarter software to lower risk.

Smarter supply chain management: Automation can help with part management, kitting, delivery, looking at where materials and parts are manufacturedand mitigating risk of future supply chain disruption. Some manufacturing locations may shift to mitigate riskwith reshoring initiatives; doing so creates opportunities to redesign and improve processes and apply more automation and controls to augment efficiencies in the new location.

Sensors and instrumentationand analytics: A myriad of measurements and data analytics go into a pandemic response. Appropriate applications of sensors and instrumentation, secure networks and data analytics present newopportunities for smarter responses.

Automated 3D printing: From maker-space help with personal-protective equipment (PPE) to rapid partcreation and replacement during supply chain interruptions, 3D design and manufacturing is helping;automation and motion controls also help with these applications.

Artificial intelligence applied to logistics support: Analytics software can be applied to track hot spots of need during a pandemic and anticipate logistics requirements, similar to rerouting resources during large-scale weather emergencies.

FACULTY CORNER

FDP

- Mr. Shinu M M Attended Three Days FDP on Artificial Intelligence using MATLAB held for the period of 25th February 2021 to 27th February 2021 organized by CoreEL Technologies .
- Mr. shinu MM, Mr. Dhanoj M & Ms. Jinsa Mathew Attended 5 days FDP on “Recent Trends in Circuits and Communication (RTCC)” held from February 19-23, 2021 in the Department of Electronics & Communication Engineering, Jaipur Engineering College & Research Center.
- Dr. V Sampathkumar Attended Attended AICTE sponsered six days induction programme on Recent advancement in HV Engineering"03.03.2021-09.03.2021, National Level Research Seminar on Green Energy-2021 on 20.03.21, Two day national seminar on Enhancing quality teaching statergies through OBE on 02.03.2021&03.03.2021 and FDP on Opportunities and challenges of Integrating Renewable Energy in Smart Grid from 15.03.2021 to 19.03.2021
- Mr. Dhanoj M & Ms. Jinsa Mathew Attended FDP on "Opportunities and Challenges of Integrating Renewable Energy in Smart Grid" on 15th march 2021 to 19th march 2021 organized by department of EEE, VJEC
- Mr. Shinu M M Attended One Week Online FDP on MACHINE LEARNING WITH ITS MATHEMATICAL FOUNDATIONS on 2/03/2021 -06/03/2021

WEBINAR/SEMINAR/ ATTENDED

- Mr. Dhanoj M attended Webinar on Enhancing Quality Teaching Strategies through OBE - 02 & 03.03.2021, AICTE Exam reforms Policy - 04.03.2021, and Industrial Automation using PLC - 15.03.2021
- Ms. Jinsa Mathew attended NAAC sponsored two day National level online seminar on Enhancing Quality Teaching Strategies through Outcome Based Education.

FUND APPLIED

- Dr. V Sampath kumar applied fund for Idea lab by AICTE

COURSE ENROLLED

- Mr. Shinu MM enrolledd NPTEL course on Introduction to Embedded System Design

PTA MEETING

The first PTA meeting of S1 AEI & EEE was conducted on 18th February 2021 through the Google Meet. Meeting is tarted with welcome speech by Ms. Laly James HOD EEE. Dr.V Sampathkumar HOD EIE, Dr. Benny Joseph Principal VJEC and Rev. Fr. Pious Padinjaremuriyil assistant manager addressed the gathering. The class toppers were announced in meeting. The academic related issued discussed in this meeting.

CONGRATULATIONS

Mr. Robin Jose- S8 AEI

Developed COVID BUSTER - an automated QR code based thermal scanner, As the part of Software development Cell VJEC

Ms. Sneha Jose- S6 AEI

Sucessfully Completed the Microskills Virtual Learning on Machine Learning & AI conducted by ICT Academy of Kerala During 1st march to 27th March 2021

CONGRATULATIONS

Dr. Reema Mathew

Former HOD Dept. of EIE

Kannur University Awarded doctorate to Ms. Reema Mathew in Computer Science, area of Research is Biomedical Image processing, under the guidance of Professor Dr. Babu Anto Department of IT Kannur University.

VIMAL JYOTHI ENGINEERING COLLEGE

NAAC ACCREDITED

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

RESOURSE 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

Mr. Shinu M M

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Mr. Dhanoj M

Mob: 9446403312, dhanoj24@vjec.ac.in

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. Shamya A, Assistant Professor, E&I

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

Mrs. Jinsa Mathew, Assistant Professor, E&I

VISION & MISSION OF DEPARTMENT

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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

POs and PSOs of Department

POs

Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering application to the solution of complex engineering problems.
Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conditions using first principles of mathematics, natural sciences & engineering sciences.
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 & safety and the cultural, societal and environmental considerations.
Conduct Investigations of Complex Problems: Use research based knowledge and research methods including design of experiments, analysis & interpretation of data, and synthesis of the information to provide valid conclusions.
Modern Tool Usage: Create, select & apply appropriate techniques, resources & modern engineering & IT tools including prediction & modeling to complex engineering activities with an understanding of the limitations.
The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal & cultural issues & the consequent responsibilities relevant to the professional engineering practice.
Environment and Sustainability: Understand the impact of the professional engineering solutions in societal & environmental contexts and demonstrate the knowledge of and need for sustainable development.
Ethics: Apply ethical principles & commit to professional ethics and responsibilities and norms of the engineering practice.
Individual and Team Work: Function effectively as an individual and as a member or leader in diverse teams and in multi disciplinary settings.
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.
Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one own work, as a member and leader in a team, to manage projects and in multi disciplinary environments.
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.

PSOs

Students will have the ability to explore the design, installation & operation of the basic instrumentation systems used in industrial environments.

Students will have a strong foundation in mathematical, scientific & engineering fundamentals necessary to formulate, solve & analyze instrumentation problems related to industry & research

EDITORIAL BOARD

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STUDENT EDITTOR: ASWIN CHAND