DEPARTMENT OF ROBOTICS AND AUTOMATION

NEWSLETTER- DECEMBER- 2021

About the Department:

The Department was started in the year 2020, our department is one of the newest departments to our college. Robotics and Automation is the new program for Engineering, Robotics and Automation is a multi - disciplinary program, it involves electrical, electronics, mechanical, computer science and AI techniques of robotics .Robotics and Automation Engineering is one of the emerging multi - disciplinary areas transforming conventional practices in industry to digitalization which plays a crucial role in the Prime Minister's Call 'MAKE IN INDIA', 'DIGITAL INDIA' and INDUSTRY 4.0. Robotics and Automation plays a major role in manufacturing units, medical science, space, etc., with the rapidly advancing process of inclusion of robots from Industry to the Social Arena, the functional requirement of the robots and corresponding human expectations has increased tremendously. However, in order to fully comprehend the complexities of such robot design, one needs to possess an over-all idea of the field.

Vision

To be a centre of excellence in the field of Robotics and Automation by providing excellent education, training, research and inculcating human values to cater the needs of the industries and society.

Mission

- **Higher Order Thinking**: To equip the students with higher order thinking and technical skills in Robotics and Automation through effective teaching learning methodologies.

- **Competency**: To educate and train the students with state of art technologies, industry institute interaction and promote research in the field of Robotics and Automation.

- **Continuous learning**: To provide an ambience that facilitate self learning, collaborative learning and acquire multidisciplinary knowledge.

- **Entrepreneurship:** To encourage the students by nurturing creativity and innovation to launch start-ups and promote entrepreneurship.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

- PEO1: **Employability:** Our Graduates shall be suitably employed with professional competency and knowledge of modern tools.

- PEO2: **Higher Education:** Our Graduates shall be capable to pursue higher studies/research in the field of engineering and management.

- PEO3: **Entrepreneurship:** Our Graduates shall be prepared for a successful career by meeting ever increasing demands required by Robotics and Automation profession and enable them to become an entrepreneur.

- PEO4: **Professional and Ethical values:** Our Graduates cultivate professional and ethical attitudes with effective communication skills, team work and multidisciplinary approach related to engineering issues.

Program outcomes (POs)

POs	DESCRIPTION
PO1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	**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 and safety, and the cultural, societal, and environmental considerations.
PO4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	**The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	**Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	**Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10	**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.
PO11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	**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.

Programme Specific Outcome (PSO)

PSO1: Process Automation: Create and apply simulation tools for modern engineering and real time Automation process.

PSO2: Products Development: Design, analysis and to develop a Robotics and Automation products in health care, security, defense, space research, banking, entertainment applications.
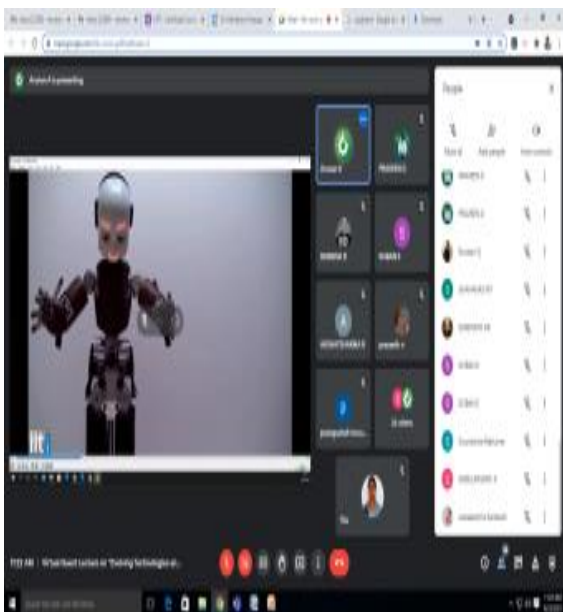
Staff Activities

- Dr.G.Renuka Devi, HoD/R & A, "Implementation of Offset Injection PWM Technique for Grid Integration", International Conference on Industrial Instrumentation & Control (ici2c-2021), Published in Springer, 20th to 22nd Aug, 2021.((Received Best Paper Award).

- Dr.G.Renuka Devi, HoD/R & A has completed and received NPTEL certification with ELITE on "Robotics" on 26.09.2021

- Dr.G.Renuka Devi, HoD/R & A has completed and received ARPIT certification course on "Big Data Analytics For Smart Grid" on 21.08.2021.
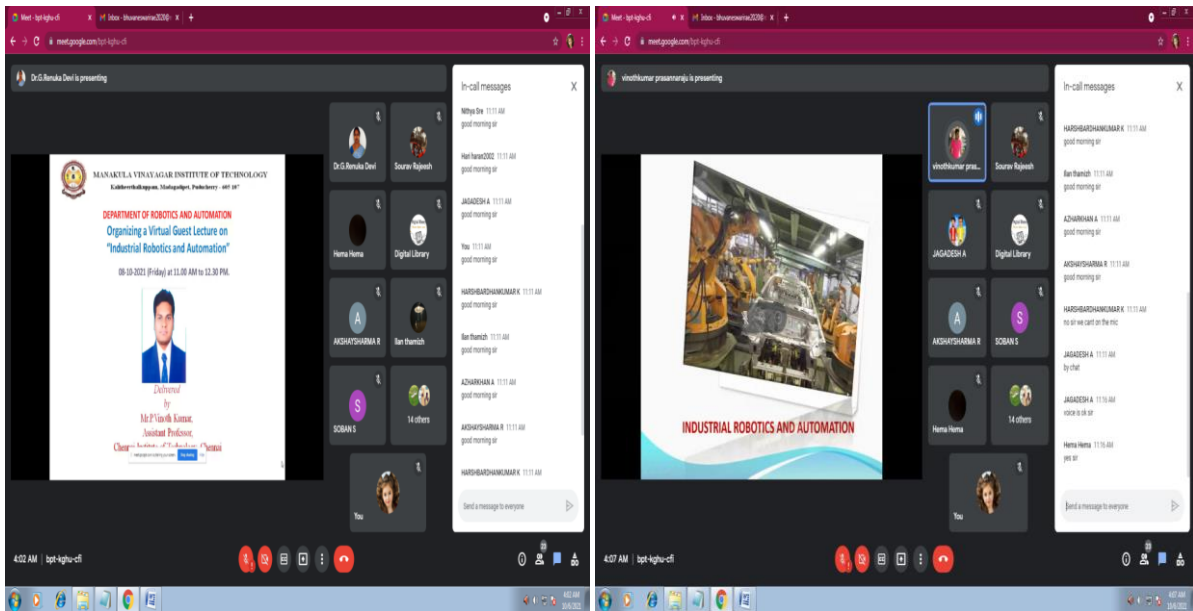

- Dr.G.Renuka Devi, HoD/R & A, has visited Chennai Institute of Technology-Kuka Robots and Industrial Automation Lab (Lu-Ban Workshop) on 08.09.2021.

- Dr.G.Renuka Devi, HoD/R & A, has attended the one Week STTP on "Analysis of Electrical and Electronics Circuits using MATLAB" from 23rd to 27th Aug, 2021 at National Institute of Technical Teachers Training and Research-Kolkatta.

- Dr.G.Renuka Devi, HoD/R & A, has participated & successfully completed AICTE Training and Learning (ATAL) Academy Online Elementary FDP on "Design and Optimization of EV Charging Technology in Smart Grid Platform" from 13/09/2021 to 17/09/2021 at Puducherry Technological University.

- Dr.G.Renuka Devi, HoD/R & A, has attended online course on Enabling Technologies for Electric Transportation, 30th July-19th September 2021" (Module 3 & 4) sponsored by the Scheme for Promotion of Academic and Research Collaboration (SPARC) program of the Ministry of Education, Govt. of India.

- Dr.G.Renuka Devi, HoD/R & A, has Participated & successfully completed AICTE Training and Learning (ATAL) Academy Online Elementary FDP on "Clean Energy Manufacturing: Transformation for Sustainable Development" from 04/10/2021 to 08/10/2021 at Delhi Technological University.

- Dr.G.Renuka Devi, HoD/R & A, has participated & completed successfully AICTE Training and Learning (ATAL) Academy Online Elementary FDP on "Electric Vehicle Engineering" from 25/10/2021 to 29/10/2021 at National Institute of Technical Teachers Training and Research.

- Dr.G.Renuka Devi, HoD/R & A and Ms.S.Geethaprabha, AP/R & A has completed Uipath Academic Alliance certificate course on "RPA Design and Development v3" from 13.12.2021 to 17.12.2021.

- Ms.S.Geethaprabha, AP/R & A has completed ICT Academy certificate course on "Stress Management" from 13.12.2021 to 17.12.2021
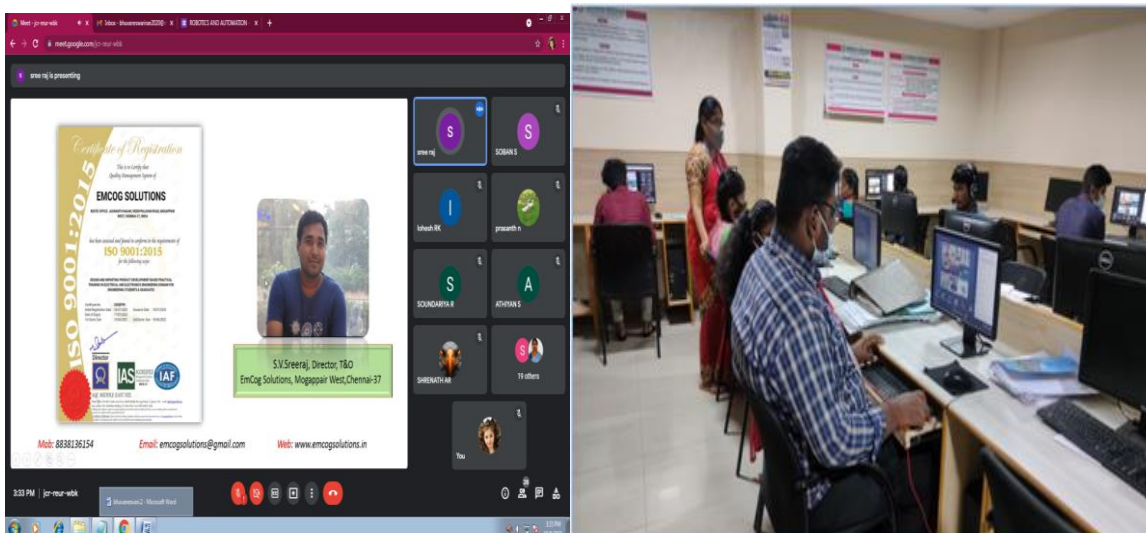
Department Activities:

Department of Robotics and Automation organized Virtual Guest Lecture on "Evolving Technologies and Impact of Robotics & Automation" for II year Robotics and Automation students. This programme has delivered by M.Arunan, Founder, Exor Robotics Pvt Ltd, Puducherry on 23-09-2021 (Thursday)

Department of Robotics and Automation organized Virtual Guest Lecture on "Industrial Robotics and Automation" for II year Robotics and Automation students. This programme has delivered by Mr.P.Vinoth Kumar, Assistant Professor, Chennai Institute of Technology, Chennai on 08-10-2021 (Friday)

Department of Robotics and Automation organized Virtual External Workshop on "Design and Developing Controllers for Smart Sensing and Control Application" for II year, Dept. of Robotics and Automation students. This programme has delivered by Er.S.V.Sreeraj, EmCog Solutions, Chennai on 09-10-2021 (Saturday).

Dr.G.Renuka Devi,HoD/R & A, has delivered special lecture on "Role of Electrical and Electronics Engineering in Robotics Applications" on 24.09.2021.

Ms.S.Geethaprabha, AP/R & A has delivered special lecture on "Deep Learning based Control of Ethanol Production Process" on 18.10.2021.

Department of Robotics and Automation organized Industrial Visit on 03.12.2021 at Pondicherry
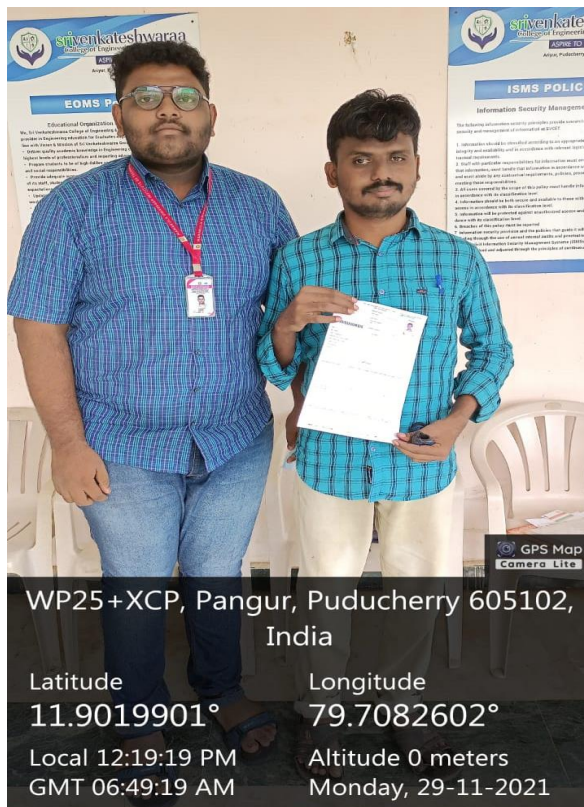
Co-Po Spinning mill, Puducherry

Department of Robotics and Automation organized External Workshop on "Testing on Electronicvs Devices in Hardware" for II year Robotics and Automation students. This programme has delivered by Raja Electronics, Cuddalore on 04-12-2021 (Saturday)

Student Participation:

- D.Praveen and M.Hariharan, II year Robotics and Automation has participated in INNOVESTA 2021, Dr.B.R.Ambedkar National Institute of Technology, Jalandhar on 25th-26th of Sep 21.

- SOBAN .S, Praveen. D, BHUVANESWARI B, ATHIYAN .S, HARIHARAN .M, HEMAVARTHINI. V, ILANTHAMIZH .K and PRASANTH .N has received great learning online certification course.

- JAGADESH .A, II year Robotics and Automation has served as scribe for blind person for writing NET exam on 29.11.2021.