SRI RAAJA RAAJAN
COLLEGE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

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1.CENTRE FOR ROBOTICS

1.1 ABOUT THE CENTRE:

"The Centre for Robotics is a cutting-edge facility dedicated to advancing the field of robotics through research, innovation, and education. It focuses on developing intelligent robotic systems that can operate autonomously, interact with humans, and perform complex tasks in various industries such as manufacturing, healthcare, and agriculture. The centre brings together experts in artificial intelligence, mechanical engineering, and computer science to explore new technologies, design novel robotic platforms, and address real-world challenges. This centre was established in 2021 under Dr. A.P.J. Abdul Kalam Research Centre. **Our institution has tie-up with our Alumni Entrepreneur Mr. S.ARUNAKANTH, CEO of "Sree Koppudaiyaal Technologies", Karaikudi**, and organising workshops, seminars and hands-on training programs in ROBOTICS."

1.2 OBJECTIVE:

1.Research Advancement: To conduct cutting-edge research in ROBOTICS, 3D PRINTING, and related fields.

2. **Education and Training:** To provide students with comprehensive education and training in Robotics and preparing them for careers in the field.

3. **Innovation and Entrepreneurship:** To foster innovation, entrepreneurship, and start-ups in ROBOTICS, leading to practical applications and solutions

4. **Industry Collaboration:** To collaborate with industry partners, addressing real-world problems and developing industry-relevant solutions.

5. **Technology Transfer:** To facilitate the transfer of ROBOTICS technology and expertise to industries, start-ups, and society.

6. **Continuous Learning**: To stay updated with the latest ROBOTICS advancements, ensuring the centre remains at the forefront of ROBOTICS research and innovation. Prepare students for ROBOTICS-related careers and future workforce needs.

1.3 FACILITIES AVAILABLE:

The Centre for Robotics offers a wide range of state-of-the-art facilities designed to support research, development, and practical applications in robotics and related fields. Key facilities include:

1. **3D Printing Lab**: Equipped with advanced 3D printers that enable rapid prototyping and the creation of complex robotic components with precision.
2. **Robotics Development Lab**: Featuring a variety of robotic arms, mobile robots, and humanoid robots for testing and programming applications in automation, manufacturing, and artificial intelligence.
3. **Automation and Control Systems Lab**: Specializing in developing and testing control systems, sensors, and actuators to enhance robotic functionality and autonomy.
4. **Artificial Intelligence and Machine Learning Lab**: Focused on integrating AI and machine learning algorithms with robotic systems for advanced decision-making and autonomous operations.
5. **Simulation and Virtual Reality (VR) Lab**: Allowing researchers to design, simulate, and test robotic systems in virtual environments before physical implementation.
6. **Mechatronics and Embedded Systems Lab**: Providing tools and equipment for developing and testing the mechanical, electrical, and software components of robotics.
7. **Collaborative Workspaces**: Offering space for teamwork and innovation, where students, researchers, and industry professionals can collaborate on robotics projects.

These facilities collectively enhance the centre's ability to drive innovation, develop new technologies, and advance the field of robotics.

1.4 FACULTY COORDINATORS:

1. Mr.R. RAJASEKAR

2. Dr.K. SENTHAMARAI

1.5 ACTIVITIES PERFORMED:

1. The workshop on *"IoT"* was conducted in Robotics Lab, on 11th April, 2022, providing participants with valuable insights into the integration of IoT technology within robotics. Led by Mr. Arunaakanth S., the session likely covered fundamental concepts of IoT and its various applications in enhancing robotic systems. A total of 40 students participated, benefiting from the hands-on experience and expert guidance, which would help them understand how IoT can innovate and improve robotics in real-world scenarios.

2. The workshop on "*3D Printing & Robotics*," held on March 16, 2023, was led by Mr. Arunaakanth S. and benefited 35 students. It offered a practical understanding of how 3D printing can enhance robotic design and functionality, equipping participants with valuable skills and insights into the integration of these technologies.

3D printing & robotics workshop

1. The workshop on *"IOT based Drone"*, was conducted on May 6, 2024, led by Mr. Arunaakanth S. Forty students participated in the hands-on training programme.

2. The *"Adriano based robot with sensor"* seminar was conducted on 03.05.2024, led by Mr. Arunaakanth S. Thirty-five students participated and were benefited from this seminar.

1.6   OUTCOMES of the CENTRE:

1.6.1 Student project:

❖ The students have completed impressive projects like a Humanoid Control Robot, an Industrial Line Follower, and an Arduino Marine Research Vehicle, all utilizing the facilities available at the robotics centre. These projects showcase their creativity and technical skills in robotics and automation.

1.6.2 Placement Activity:

❖ Totally, 47 students got placements successfully, due to the comprehensive training and placement activities conducted by the Robotics Centre. This achievement underscores the effectiveness of our training programs in equipping students with the necessary skills and knowledge to excel in the robotics field.

HUMANOID CONTROL ROBOT