



# PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

(Approved by AICTE & Affiliated to Anna University, Chennai)

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## Research and Development Cell

Pandian Saraswathi Yadav Engineering College boasts three Anna University approved Research and Development (R&D) centers, each equipped with experienced faculty members and state-of-the-art facilities. These R&D centers are housed within the departments of Electronics & Communication Engineering, Mechanical Engineering, and Computer Science and Engineering.

Pandian Saraswathi Yadav Engineering College, through its Anna University approved Research and Development (R&D) centers, consistently organizes a range of seminars, workshops, and conferences every semester and academic year. These events are tailored to address emerging trends and advancements across all departments, fostering a culture of continuous learning and innovation.

### **Regular Seminars:**

Each semester, the R&D centers host seminars that bring together experts from academia, industry, and research institutions. These seminars cover a wide array of topics, such as the latest advancements in telecommunications, developments in renewable energy, cutting-edge software engineering practices, and more. These sessions provide faculty and students with insights into current research, practical applications, and future directions in their respective fields.

### **Hands-On Workshops:**

Workshops are a regular feature at the college, aimed at providing hands-on experience with new technologies and methodologies. Topics may include advanced manufacturing techniques, IoT device programming, machine learning algorithms, and cybersecurity measures. These workshops are designed to enhance the technical skills of students and faculty, enabling them to apply theoretical knowledge to real-world problems.

### **International Conferences:**

The college organizes conferences that attract participants from across the country and even internationally. These conferences serve as a platform for presenting research findings, sharing knowledge, and networking with peers. Each conference focuses on emerging trends and challenges in engineering, such as sustainable technology, artificial intelligence, smart manufacturing, and data science.

### **Interdisciplinary Collaboration:**

Recognizing the importance of interdisciplinary research, the R&D centers also organize events that encourage collaboration between different departments. For example, a workshop on renewable energy might bring together experts from mechanical engineering, electrical engineering, and computer science to explore integrated solutions.

### **Guest Lectures and Special Talks:**

Throughout the academic year, the college invites distinguished speakers to deliver guest lectures and special talks. These events cover a broad spectrum of

emerging topics, from the latest in VLSI design to innovations in robotics and automation. These lectures provide students with a broader perspective on the current state and future of engineering and technology.

### **Student Involvement and Competitions:**

To nurture the entrepreneurial spirit and innovative thinking among students, the R&D centers frequently organize competitions and hackathons. These events challenge students to develop innovative solutions to contemporary problems, providing a practical outlet for their creativity and technical skills.

Through these regular seminars, workshops, conferences, and other events, Pandian Saraswathi Yadav Engineering College ensures that its faculty and students remain at the forefront of technological advancements. This proactive approach not only enhances the academic environment but also prepares students to meet the dynamic demands of the engineering industry.

1. **Electronics & Communication Engineering R&D Center:** This center focuses on cutting-edge research in areas such as telecommunications, signal processing, embedded systems, VLSI design, and IoT (Internet of Things). Faculty members here engage in collaborative research projects, publish in reputed journals, and contribute to technological advancements in the field.

### **Department R&D Coordinator**

Dr.B.Ambika M.E., Ph.D  
Associate Professor,  
Electronics & Communication Engineering



- Mechanical Engineering R&D Center:** The R&D center in Mechanical Engineering emphasizes research in areas like advanced manufacturing, materials science, robotics, renewable energy systems, and automotive engineering. It serves as a hub for innovation where faculty and students explore new technologies and sustainable solutions for industrial applications.

### **Department R&D Coordinator**

Dr.S.Rajamuneeswaran M.E., Ph.D  
Professor, Mechanical Engineering

## **LIST OF MAJOR EQUIPMENTS**

### **Manufacturing Technology Laboratory - I**

Horizontal Milling Machine -Lathe Tool Dynamometer

Vertical Milling Machine

### **Fluid Mechanics And Machinery Laboratory**

Pelton wheel setup

Francis turbine setup

Kaplan turbine setup

### **Manufacturing Technology Laboratory–II**

Gear Hobbing Machine

Surface Grinding Machine

### **Cylindrical Grinding Machine**

CNC Lathe


CNC Milling machine

3. **Computer Science and Engineering R&D Center:** Within this center, research efforts span artificial intelligence, machine learning, data science, cybersecurity, cloud computing, and software engineering. The faculty members collaborate with industry partners and academia to develop solutions that address contemporary challenges in computing and information technology.

### **Department R&D Coordinator**

Dr.A.Askarunisha M.E., Ph.D

Professor, Computer Science & Engineering

<div style="text-align: center;">  <h3 style="color: purple;">Applications Lab/AI &amp; DS Lab</h3>  </div> <div style="display: flex; justify-content: space-between;">  <div style="border: 1px solid gray; border-radius: 15px; padding: 10px; background-color: #f0f0f0;"> <p><b>Total No. of Systems : 105</b></p> <p><b>Hardware</b></p> <ul style="list-style-type: none"> <li>✓ Intel i5 6th Gen HP, 500 GB HDD, 8 GB Ram, Monitor, Keyboard, Mouse-100</li> <li>✓ Intel Dual Core Processor, 4GB RAM, 160GB HDD, Monitor, Keyboard, Mouse - 5</li> <li>✓ Ultra Net 5 KWA UPS – 2</li> <li>✓ Exide 12V PowerSafe Sealed UPS Battery</li> <li>✓ D-LINK Switch 24 port</li> </ul> <p><b>Software</b></p> <ul style="list-style-type: none"> <li>✓ Platform : Ubuntu</li> <li>✓ Packages : Relevant Open source software</li> </ul> </div>  </div>	<div style="text-align: center;">  <h3 style="color: purple;">Other Facilities</h3>  </div> <div style="display: flex; justify-content: space-between;">  <div style="border: 1px solid gray; border-radius: 15px; padding: 10px; background-color: #e0f0e0;"> <ul style="list-style-type: none"> <li>✓ Exclusively for Computer Science Department</li> <li>✓ Systems : 3</li> <li>✓ Projector : 1</li> <li>✓ Television : 1</li> </ul> </div> </div> <div style="background-color: #ffff00; padding: 10px; border: 1px solid gray;"> <p><b>DEPARTMENT LIBRARY</b></p> <p>Includes</p> <ul style="list-style-type: none"> <li>✓ Text/Reference Books</li> <li>✓ Conference/Workshop Proceedings</li> <li>✓ Students' Project Reports</li> <li>✓ E-Books</li> </ul> </div> 
<div style="text-align: center;">  <h3 style="color: purple;">Internet Lab / Networks Lab</h3>  </div> <div style="display: flex; justify-content: space-between;">  <div style="border: 1px solid gray; border-radius: 15px; padding: 10px; background-color: #f0f0f0;"> <p><b>Total No. of Systems : 51</b></p> <p><b>Hardware</b></p> <ul style="list-style-type: none"> <li>✓ Lenovo All in one PC, intel pentium 7th GEN, 4GB RAM, 1TB HDD -16</li> <li>✓ Intel Dual Core Processor, 2GB RAM, 160GB HDD – 25</li> <li>✓ Wipro Dual Core 2.6Ghz, 1GB RAM, 160 GB HDD – 10</li> <li>✓ Console 10 KWA UPS - 1</li> <li>✓ D-LINK Switch - 4</li> </ul> <p><b>Software</b></p> <ul style="list-style-type: none"> <li>✓ Platform : Windows 10 / Ubuntu</li> <li>✓ Packages : Java, Net Beans, Eclipse 3.0, AGROUML</li> </ul> </div>  </div> <div style="border: 1px solid gray; border-radius: 15px; padding: 10px; background-color: #f0f0f0; margin-top: 10px;"> <p><b>Student's Projects:</b></p> <ul style="list-style-type: none"> <li>➤ <b>Mini Projects</b> <ul style="list-style-type: none"> <li>▪ Internet Based Multi-User Online Game using Java</li> <li>▪ Analysis of DNA Structure using JavaScript</li> <li>▪ Hospitality Management using PHP</li> </ul> </li> <li>➤ <b>Capabilities:</b> <ul style="list-style-type: none"> <li>▪ Tool development using Object Oriented and other programming languages</li> </ul> </li> </ul> </div>	<div style="text-align: center;">  <h3 style="color: purple;">Space for Research</h3>  </div> <div style="display: flex; justify-content: space-between;">   </div>
<div style="text-align: center;">  <h3 style="color: purple;">Projects and Consultancy</h3>  </div> <p><b>Projects done:</b></p> <ul style="list-style-type: none"> <li>▪ An IOT Based Anti Theft Security System With Video Monitoring Facility</li> <li>▪ Fast R-CNN based currency recognition and fake detection frame work for Visually Impaired People</li> <li>▪ Electronic health record sharing model based on blockchain with checkable state</li> <li>▪ Fault Tolerance in the scope of Cloud computing</li> <li>▪ An Approach to Organize Extracted Text from Image using OCR</li> <li>▪ AI based Drowsiness detection</li> <li>▪ Smart bus tracking system using Android</li> <li>▪ Face recognition based attendance System</li> </ul>	<div style="text-align: center;">  <h3 style="color: purple;">Softwares Available</h3>  </div> <p><b>Python:</b> A versatile programming language.</p> <p><b>SimPy:</b> A discrete-event simulation library for Python</p> <p><b>Scikit-learn:</b> A popular machine learning library for Python.</p> <p><b>Apache Kafka:</b> A distributed streaming platform used in research on data streaming, real-time analytics.</p> <p><b>R:</b> Statistical analysis and data visualization tool.</p> <p><b>Deep Learning Frameworks:</b> Tools like TensorFlow, PyTorch, and Keras are essential for deep learning and neural network research.</p> <p><b>Cloud Computing Services:</b> Platforms like Amazon Web Services (AWS), Google Cloud Platform (GCP), and Microsoft Azure are useful for scalable computing and data storage in research.</p> <p><b>Big Data Tools:</b> Hadoop, Spark, and Apache Flink for processing and analyzing large datasets.</p> <p><b>Databases:</b> PostgreSQL, MySQL, MongoDB, and NoSQL databases like Cassandra for data storage and retrieval.</p> <p><b>Compiler Tools:</b> GCC (GNU Compiler Collection) for compiler design and optimization research.</p> <p><b>Natural Language Processing (NLP):</b> NLTK, spaCy, and BERT-based models for NLP.</p> <p><b>Computer Vision:</b> OpenCV for computer vision and image processing research.</p> <p><b>Research Collaboration Tools:</b> Tools for collaboration, such as Overleaf for LaTeX-based collaborative writing</p>

Each R&D center at Pandian Saraswathi Yadav Engineering College plays a pivotal role in fostering a culture of research excellence, innovation, and interdisciplinary collaboration. These centers not only enhance the academic

environment but also contribute significantly to the college's reputation as a hub for cutting-edge research and development in engineering disciplines.