



Date: 11/07/2022

## ATR on Pos/PSOs Attainments for the admitted batch – 2018-2022

POs	Target Level	Attainment Level	Observations
<b>PO1: Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	70	71.35	<ol style="list-style-type: none"> <li>Most of the Basic Science, Engineering Science, Program Core and Elective subjects have contributed more than Target PO1 Attainment.</li> <li>Workshops, Industrial Training, Internships, Problem Assisted Learning with the use of ICT Tools and Online Learning have contributed the Engineering Knowledge gain leading to the PO1 Attainment.</li> </ol>
<p><b>Action 1:</b> Hands on learning of Industrial Automation tools and computer Programming languages has improved the students learning skills to understand and implement the Engineering Knowledge in real world problems.</p> <p><b>Action 2:</b> Students knowledge beyond the curriculum in the field of Electrical and Electronics Engineering is enhanced with NPTEL courses.</p>			
<b>PO2: Problem analysis:</b> Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	70	71.54	<ol style="list-style-type: none"> <li>Engineering Science, Program Core and Elective subjects like Networks-I &amp; II, Power Generation &amp; Utilization, Power System Analysis, Power Electronics, Control systems have contributed close to the Target PO2 Attainment.</li> <li>Simulation Tools usage to demonstrate and analyze electrical and electronic experiments and programming skills have contributed to gain analysis skills leading to the Target of PO2.</li> </ol>
<p><b>Action 1:</b> To achieve Higher levels of Blooms Taxonomy of learning in analyzing laboratory experiments simulation tools are used.</p> <p><b>Action 2:</b> Students knowledge beyond the curriculum in the field of Electrical and Electronics Engineering is enhanced with NPTEL courses.</p>			
<b>PO3: Design/development of solutions:</b> 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.			
PO3	70	70.71	<ol style="list-style-type: none"> <li>Most of the Basic and Engineering science, Program core and Electives have contributed to the Attainment of Target value of PO3.</li> <li>Mini and Major projects, Internship, Seminar, Problem Assisted learning have contributed to attainment the target PO3.</li> </ol>
<p><b>Action 1:</b> Workshops and Industrial training programs have improved the students learning skills of electrical and electronic system design and develop solutions to specific problems.</p> <p><b>Action 2:</b> Online courses on programming skills have enhanced the implementation of solution to design problems in laboratories.</p>			



<b>PO4 : Conduct investigations of complex problems:</b> 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.			
PO4	70	73.56	<ol style="list-style-type: none"> <li>1. Most of the Basic and Engineering science, Program core and Electives have contributed to the Attainment of Target value of PO4.</li> <li>2. Mini and Major projects, Internship, Seminar, and Problem Assisted learning have contributed to attainment the target value of PO4.</li> </ol>
<b>Action 1:</b> Better understanding of engineering systems function is achieved by students, with the use of Teaching aids and simulation tools in the teaching and learning process.			
<b>PO5: Modern tool usage:</b> Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.			
PO5	70	71.5	<ol style="list-style-type: none"> <li>1. ICT Tools and Simulations in teaching the program core, program elective and Add-on course subject concepts have contributed to attainment the Target value of PO5.</li> </ol>
<b>Action 1:</b> Achievement of Higher levels of learning as per Blooms taxonomy have improved the analyzing skills of students using simulation Tools.			
<b>PO6: The engineer and society:</b> 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.			
PO6	70	76.85	<ol style="list-style-type: none"> <li>1. Professional communications-I &amp; II, Professional Ethics &amp; Human Values, Problem Assisted learning, Mini and Main Project works have contributed to the attainment value of Target PO6.</li> <li>2. Student portfolio attainment (Co-curricular and placement &amp; Higher education, NSS and NCC....etc) which is an indirect assessment tool mapped to PO6 is High.</li> </ol>
<b>Action 1:</b> Awareness programs on green energy, electrical safety, energy conservation,....etc are conducted with experts from industry and academia.			
<b>Action 2:</b> Students are motivated to take up extension activities through Association of Electrical Engineers of LBRCE, NSS, NCC.			
<b>PO7: Environment and sustainability:</b> Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
PO7	65	69.87	<ol style="list-style-type: none"> <li>1. Professional Ethics &amp; Human Values, Problem Assisted learning, Mini and Main Project works have contributed to the attainment value of Target PO7.</li> </ol>
<b>Action 1:</b> Awareness programs on green energy, energy efficiency, energy conservation & energy auditing,....etc are conducted with experts from industry and academia.			
<b>PO8: Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	65	74	<ol style="list-style-type: none"> <li>1. Engineering Laboratories, Professional Ethics &amp; Human Values, Seminar, Problem Assisted learning, Mini and Main Project works have contributed to the attainment value of Target PO8.</li> </ol>
<b>Action 1:</b> Students intra-personality skills are enhanced by incorporating the yoga, sports, and games as part of curriculum.			
<b>Action 2:</b> As per the norms of engineering practice as mentioned in the regulations continues internal evaluation in theory and practices courses follow rubrics which are disseminated among the stake holders.			



<b>PO9: Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	65	76.3	<ol style="list-style-type: none"> <li>1. Mini and Main project works in multidisciplinary topics have contributed to the Target value attainment of PO9.</li> <li>2. Student participation in Center of Innovation and Incubation cell activities has contributed to the Target value attainment of PO9.</li> </ol>
<b>Action 1:</b> Students are encouraged to plan, conduct the cultural, technical and sports events regularly to improve the intra-personnel skills as well as leadership qualities.			
<b>PO10: Communication:</b> 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.			
PO10	65	76.8	<ol style="list-style-type: none"> <li>1. Professional communications-I &amp; II, Engineering Laboratories, Professional Ethics &amp; Human Values, Seminar, Problem Assisted learning, Mini and Main Project works have contributed to the attainment value of Target PO10.</li> </ol>
<b>Action 1:</b> Students are encouraged to participate and present their Project works and deliver technical seminars at the national level technical symposiums and conferences.			
<b>PO11: Project management and finance:</b> 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.			
PO11	65	73.75	<ol style="list-style-type: none"> <li>1. Program Elective and Open Elective subjects like Engineering Economics and Accountancy, Industrial Engineering &amp; Management, also Mini and Main project works in multidisciplinary topics have contributed to the Target value attainment of PO11.</li> </ol>
<b>Action 1:</b> Students are encouraged to learn and manage the implementation of projects with start-ups as part of enhancing their entrepreneur skills with the guidance from Centre for Innovation and Incubation Cell established in the college as per AICTE.			
<b>PO12: Life-long learning:</b> 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.			
PO12	65	73.85	<ol style="list-style-type: none"> <li>1. Most of the Program core subjects and Integrated Learning Practices have contributed to the Target attainment value of PO12.</li> <li>2. Extracurricular Activities, Mini and Major projects, Internship, Seminar, and Problem Assisted learning have contributed to attainment the target value of PO12.</li> </ol>
<b>Action 1:</b> Students are made to independently engage in Integrated Learning Practices in the technical and Extra-curricular activities for life-long learning with the changes in the technologies in the field of electrical and electronics engineering.			
<b>POs</b>	<b>Target Level</b>	<b>Attainment Level</b>	<b>Observations</b>
<b>PSO1:</b> Specify, design and analyze systems that efficiently generate, transmit and distribute electrical power			
PSO1	70	72.12	<ol style="list-style-type: none"> <li>1. Majority of the Program core and Elective subjects, Laboratory courses and Integrated Learning Practices have contributed to the attainment value of the PSO1.</li> <li>2. Online courses, Workshops, Guest Lectures and training programs in Industrial Automation, SCADA, PLC, Operational practices of thermal power stations, Conservation of Energy have contributed to the attainment value of the PSO1.</li> </ol>



**Action 1:** Students are encouraged to produce Major Project works with Prototype model Implementation of the real-time projects with the knowledge gained out of the Program core and Elective Subjects in the area of power systems.

**Action 2:** Basic science and Basic Engineering course have made students learn the working and principle of operation with mathematical modelling and analysis methods with latest software utilization.

**PSO2:** Design and analyze electrical machines, modern drive and lighting systems

PSO2	70	72.3	<ol style="list-style-type: none"> <li>1. Students acquired sufficient knowledge from program core and program electives.</li> <li>2. Students Certified Programs, Training programs with hands on experience has contributed to the attainment value of the PSO2.</li> </ol>
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**Action 1:** Skill oriented programs are introduced in the new regulation R20 based on the feedback from various stake holders.

**PSO3:** Specify, design, implement and test analog and embedded signal processing electronic systems

PSO3	70	69.15	<ol style="list-style-type: none"> <li>1. Majority of the Program core and Elective subjects, Laboratory courses related to electronic systems and Integrated Learning Practices have contributed to the attainment value of the PSO3.</li> </ol>
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**Action 1:** Students can learn electronic course contents of signal processing in analog and digital systems in the upcoming curriculum regulation R20.

**Action 2:** Workshops, Guest lecturers arranged have contributed to the improvement in the students design and implementation of electronic systems.

**PSO4:** Design controllers for electrical and electronic systems to improve their performance

PSO4	70	72.38	<ol style="list-style-type: none"> <li>1. Majority of the Program core and Elective subjects, Laboratory courses related to electronic systems and Integrated Learning Practices have contributed to the attainment value of the PSO4.</li> <li>2. Problem Assisted Learning, Mini-projects and Major projects and seminars in the area of electrical and electronic systems have contributed to the attainment value of the PSO4.</li> </ol>
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**Action 1:** Based on stake holders feedback and CRC Reviews, new courses like Skill oriented courses in the area of electrical engineering are introduced in R20 regulation.

**Action 2:** In addition to above contents python programming, IoT and data science application to electrical and electronics engineering systems will enhance the employability skills of students.

  
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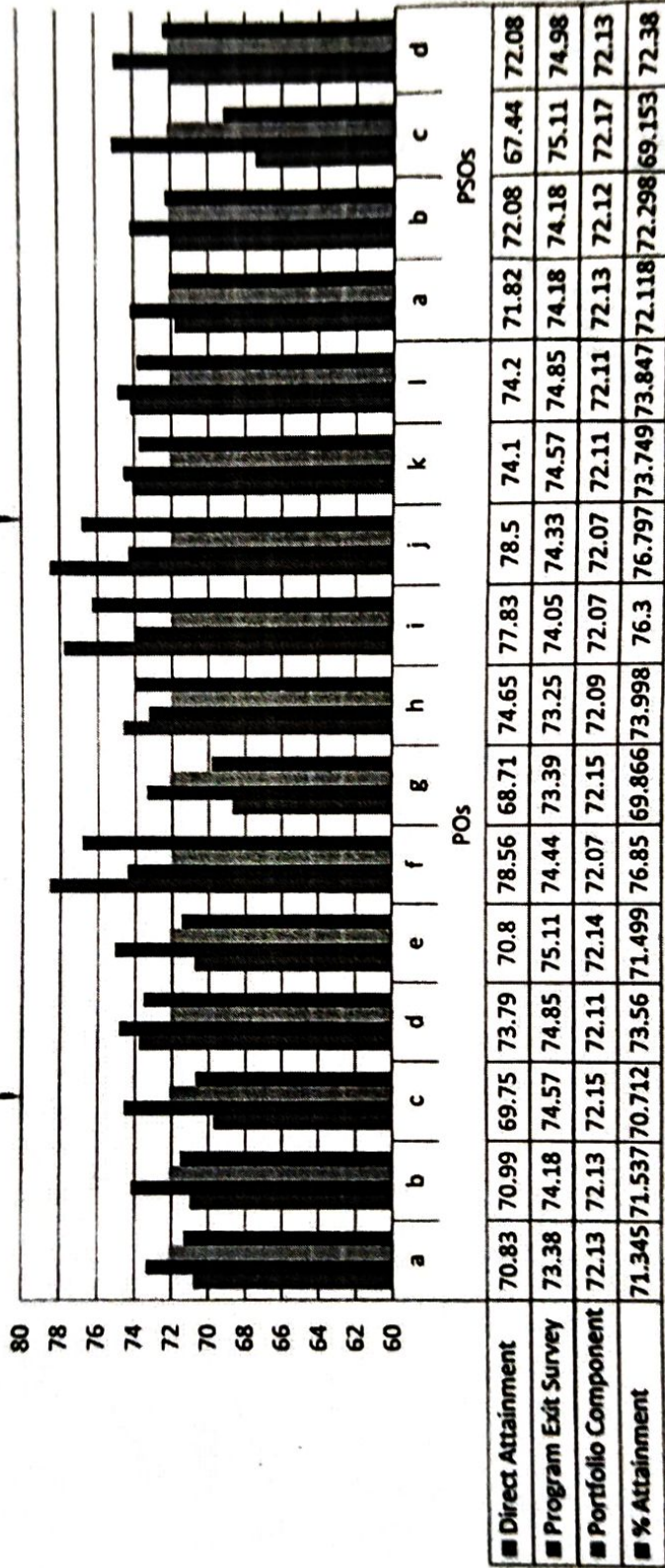
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**2018-22 Batch**



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