


LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (Autonomous)

L.B. Reddy Nagar , Mylavaram-521 230. Andhra Pradesh, INDIA
 Affiliated to JNTUK, Kakinada & Approved by AICTE New Delhi
 New Delhi & Certified by ISO 9001:2015, <http://www.lbrce.ac.in>

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Phone: 08659-222933/Extn: 203

hr@lbrce.ac.in, ee@lbrce@gmail.com
POs Attainment Levels and Actions for improvement – (2017-2021 Batch.)

POs	Target Level	Attainment Level	Observations
PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	70	65.94	<ol style="list-style-type: none"> 1. Some subjects of Basic & Engineering Science, Program core, EM-I Lab, THPM-Lab, Mini-Project and Program Electives have contributed less than the Target PO Attainment. 2. Online workshops and training programs, use of learning management systems and Teaching Aids have contributed in the Knowledge gain leading to the PO1 Attainment value.
Action 1: To improve the Engineering knowledge, hands on experience on implementation of mathematical, science and engineering techniques for complex engineering problems using hardware and simulation tools for students are achieved with skill development programmes. Action 2: To enhance the knowledge in state of art developments in electrical and electronics engineering subjects beyond curriculum, students are enrolled to NPTEL online courses.			
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.			
PO2	70	65.83	<ol style="list-style-type: none"> 1. Some subjects of Basic & Engineering Science, Program core, EM-I Lab, THPM-Lab, Mini-Project and Program Electives have contributed less than the Target PO Attainment. 2. Simulation tools, online workshops and training programs have contributed in the gain of Analysis Skills, leading to the PO2 Attainment value.
Action 1: To achieve Higher levels Blooms Taxonomy of learning in Laboratory Experiments; they are Analyzed using Simulation tools. Action 2: To enhance the knowledge in state of art developments in electrical and electronics engineering subjects beyond curriculum, students are enrolled to NPTEL online courses.			
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.			
PO3	70	65.58	<ol style="list-style-type: none"> 1. Some subjects of Basic & Engineering Science, Program core, EM-I Lab, THPM-Lab and Program Electives have contributed less than the Target PO Attainment. 2. Major Project work, Seminar, online workshops

			and training programs, PAL and PBL have contributed in the gain of Design Skills, leading to the PO3 Attainment value.
<p>Action 1: To create awareness among students, Engineers role in the societal problems and solutions as humans, Universal human values course has been introduced in R20 regulation.</p> <p>Action 2: To achieve Higher levels Blooms Taxonomy of learning in Laboratory Experiments, they are Analyzed using Simulation tools.</p>			
<p>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.</p>			
PO4	70	67.41	<ol style="list-style-type: none"> 1. Some subjects of Basic & Engineering Science, Program core, EM-I Lab, THPM-Lab and Program Electives have contributed less than the Target PO Attainment. 2. Simulation and design experiments in the Labs, Major Project works, PAL, PBL have contributed in understanding the implementation of complex engineering problems leading to the PO4 Attainment value.
<p>Action 1: Complex engineering problems are Analyzed, interpreted the results obtained experimentally as well as using Simulation tools.</p> <p>Action 2: Students are encouraged to publish their research outcomes in reputed Journals/Conferences as part of their Major Project works.</p>			
<p>PO5: Modern tool usage: 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.</p>			
PO5	70	66.41	<ol style="list-style-type: none"> 1. Some subjects of Basic & Engineering Science, Program core, EM-I Lab, THPM-Lab, Mini-Project and Program Electives have contributed less than the Target PO Attainment. 2. Simulation Tools, Teaching Aids and workshop training programs have contributed in better understanding of modern industrial engineering systems leading to the PO5 Attainment value.
<p>Action 1: To achieve Higher levels Blooms Taxonomy of learning in Laboratory Experiments; they are Analyzed using Simulation tools.</p> <p>Action 2: Based on the stakeholders feedback Students Programming skills are enhanced with the introduction of Python Programming course in curriculum-R20.</p>			
<p>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.</p>			
PO6	70	69.37	<ol style="list-style-type: none"> 1. Professional Communication – I, Applied Chemistry, Professional Ethics and Human Values, PSA, Mini-Projects have contributed less than the Target PO attainment. 2. Institute Level/Local Community National Social Services, NCC and University level Awards have contributed to the Attainment value

			of PO6.
<p>Action 1: To enhance role of engineering students as a responsible citizen, constitution of India course has been included in the curriculum.</p> <p>Action 2: To create awareness among students, Engineers role in the societal problems and solutions as humans, Universal human values course has been introduced in R20 regulation.</p>			
<p>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.</p>			
PO7	65	67.25	<ol style="list-style-type: none"> 1. Applied Chemistry, Professional Ethics and Human Values, A&DSP, PSA, PSP, Mini-Projects have contributed less than the Target PO attainment. 2. Green Energy Campus – Energy Audits, Environmental and Green Energy Technical clubs seminars, Guest lecturers have contributed to the Attainment value of PO7.
<p>Action 1: Students are involved to participate in the technical programs conducted by Environmental and Green Energy clubs like quiz, poster, and paper presentation competitions, to get awareness about impact of pollution and energy conservation in day to day living.</p> <p>Action 2: To create awareness among students, Engineers role in the societal problems and solutions as humans, Universal human values course has been introduced in R20 regulation.</p>			
<p>PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</p>			
PO8	65	66.28	<ol style="list-style-type: none"> 1. Engineering Workshop, Professional Ethics and Human Values, Mini-Project and PSP have contributed less than the Target PO attainment. 2. Professional Ethics and conduction of engineering practices in academics with students placements and higher education have contributed to the Attainment value of PO8.
<p>Action 1: Continuous Internal evaluation (CIE) in theory and laboratories courses follow the rubrics which are disseminated among the stake holders (students) as per norms of engineering practice as mentioned in the regulations.</p> <p>Action 2: Students are encouraged to participate in yoga, sports, games and cultural activities to enhance their intra-personality development skills.</p>			
<p>PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.</p>			
PO9	65	67.95	<ol style="list-style-type: none"> 1. Professional Communication – I, Engineering Workshop, Professional Ethics and Human Values, ERE, HVE, Mini-Project and PS-Lab have contributed less than the Target PO attainment. 2. Innovative Project works, Internships and Major Project works in multidisciplinary topics have contributed to the Attainment value of PO9.
<p>Action 1: Students are encourage to plan, conduct the cultural, sports and games events regularly to learn intra-personnel skills as well as leadership qualities.</p> <p>Action 2: Students are motivated to propose innovative ideas in the use of technologies for the</p>			

societal and environmental needs and participate at the National level competitions.

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.

PO10	65	69.89	<ol style="list-style-type: none"> 1. Professional Communication – I, Computer Programming, A & DSP, Mini-Project, HVE, and PS-Lab have contributed less than the Target PO attainment. 2. Seminars, Technical Quiz, Problem based Learning, Mini-project, Major project works and Placement and Higher education have contributed to the Attainment value of PO10.
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Action 1: Professional Communication skills of students are improved by participating in the national level technical quiz, paper presentations, also their report writing skills are enhanced with CIE of Seminar, Mini-Project, Major Project works as per the rubrics disseminated among the students.

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.

PO11	65	69.32	<ol style="list-style-type: none"> 1. Thermal and Hydro Prime Movers, Mini-Project, PSP have contributed less than the Target PO attainment. 2. Institute Level/Local Community National Social Services, NCC and Institute/University level Sports and Games Awards have contributed to the Attainment value of PO11.
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Action 1: As a member and leader of a team, students are made to perform their engineering knowledge and practical skills in mini-project, Industrial visits, Internships, Seminar and Major project work, under the supervision/guidance of faculty and industrial experts in the multidisciplinary environments.

Action 2: Students are encouraged to participate at national level extracurricular activities like sports, games, NSS, NCC and yoga under the guidance of mentors in the respective activities.

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.

PO12	65	66.82	<ol style="list-style-type: none"> 1. Some subjects of Basic & Engineering Science, Program core, EM-I Lab, Mini-Project and Program Electives have contributed less than the Target PO Attainment. 2. Online Workshops and Training programs, Webinars, Training and Placements, Higher Education have contributed to the Attainment value of PO12.
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Action 1: Students Professional communication, Aptitude, Technical Skills and ability to involve independently and learn the technological changes in the electrical and electronics engineering and applied fields by outcome based education system in the academics as well as by conducting various Guest lectures by industrial experts on the latest developments in the technological changes, Workshop training programs for getting hands-on experience in

implementation of the working of complex engineering systems and training of students with computer coding skills as per the requirement of industrial automation.

POs	Target Level	Attainment Level	Observations
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PSO1: Specify, design and analyze systems that efficiently generate, transmit and distribute electrical power

PSO1	65	67.06	<ol style="list-style-type: none"> 1. Some subjects of Program Core, EW-Lab, EM-I Lab, Mini-Project, and PS-Lab have contributed less than the Target PO Attainment. 2. Certification programs, Workshops, Online certification courses have contributed to the Attainment value of PSO1.
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Action 1: Program core and program elective subjects contents of the curriculum are updated with the current needs of the industry, where the students learn the analysis methods and design procedures of various power engineering systems, including the planning, operation, control and protection of the power equipments.

Action 2: Basic science and Basic engineering subject's contents are updated with inputs from various stake holders (Parents, BoS members, Students, Industrial experts, Alumni) where students learn the engineering systems working and principle of operation with mathematical modelling and analytical methods of analyzing the systems.

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

PSO2	65	67.37	<ol style="list-style-type: none"> 1. Some subjects of Program Core, EW-Lab, EM-I Lab, Mini-Project, and PS-Lab have contributed less than the Target PO Attainment. 2. Journal Publications, Industrial visits, Webinars, Seminars, Guest Lectures, training programs have contributed to the Attainment value of PSO2.
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Action 1: Program core and program elective subjects contents of the curriculum are updated with the current needs of the industry, where the students learn the analysis methods and design procedures of various power engineering systems, including the planning, operation, control and protection of the power equipments.

Action 2: Basic science and Basic engineering subject's contents are updated with inputs from various stake holders (Parents, BoS members, Students, Industrial experts, Alumni) where students learn the engineering systems working and principle of operation with mathematical modelling and analytical methods of analyzing the systems.

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

PSO3	65	65.8	<ol style="list-style-type: none"> 1. Engineering Workshop-Lab, ECA, A&DSP and Mini-Project have contributed less than the Target PO Attainment. 2. Program Elective Subjects, Certification programs, Workshops, Online certification courses have contributed to the Attainment
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			value of PSO3.
<p>Action 1: Program core and program elective subjects contents of the curriculum are updated with the current needs of the industry, where the students learn the analysis methods and design procedures of various power engineering systems, including the planning, operation, control and protection of the power equipments.</p> <p>Action 2: Basic science and Basic engineering subject's contents are updated with inputs from various stake holders (Parents, BoS members, Students, Industrial experts, Alumni) where students learn the engineering systems working and principle of operation with mathematical modelling and analytical methods of analyzing the systems.</p>			
<p>PSO4: Design controllers for electrical and electronic systems to improve their performance</p>			
PSO4	65	65.34	<ol style="list-style-type: none"> 1. Mini-Project, Advanced Control Systems and High Voltage Engineering have contributed less than the Target PO Attainment. 2. Program Core subjects, Program Electives have contributed to the Attainment of PSO4.
<p>Action 1: Program core and program elective subjects contents of the curriculum are updated with the current needs of the industry, where the students learn the analysis methods and design procedures of various power engineering systems, including the planning, operation, control and protection of the power equipments.</p> <p>Action 2: Basic science and Basic engineering subject's contents are updated with inputs from various stake holders (Parents, BoS members, Students, Industrial experts, Alumni) where students learn the engineering systems working and principle of operation with mathematical modelling and analytical methods of analyzing the systems.</p>			


PAC Coordinator

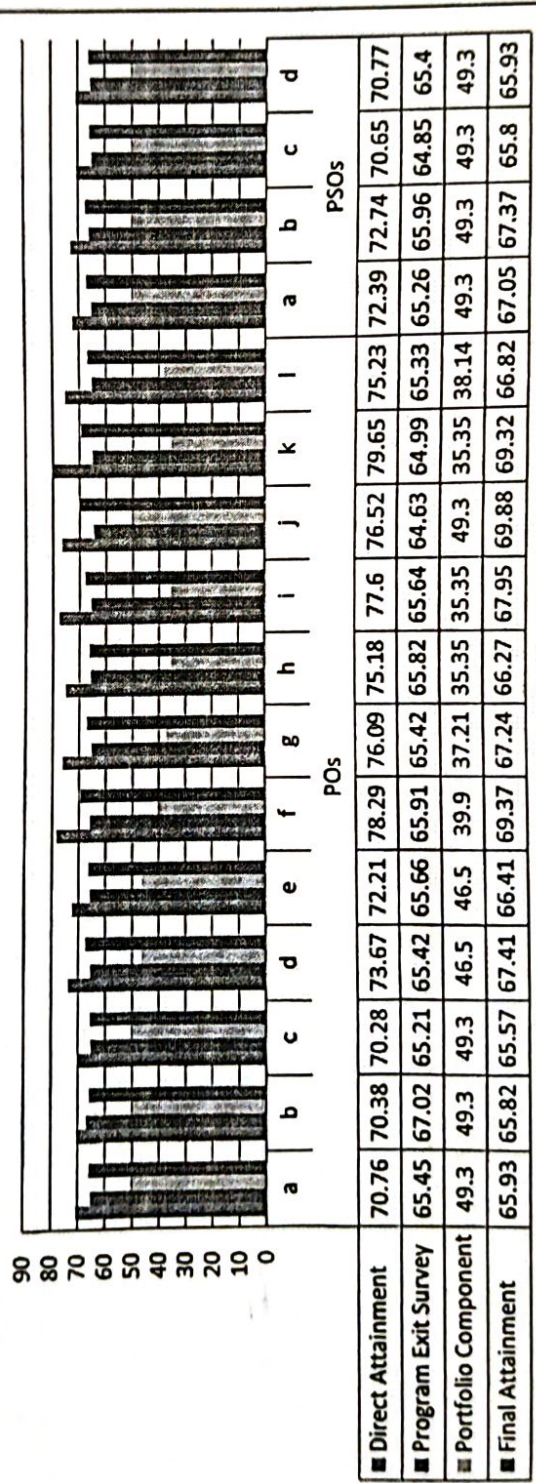

Head of the Department



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2017-Admitted Batch PO & PSO Attainments

2017-21 Batch



Final Attainment = 0.7 x (Direct Attainment) + 0.1 x (Program Exit Survey) + 0.2 x (Student Portfolio)

PAC Coordinator

Head of the Department