



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

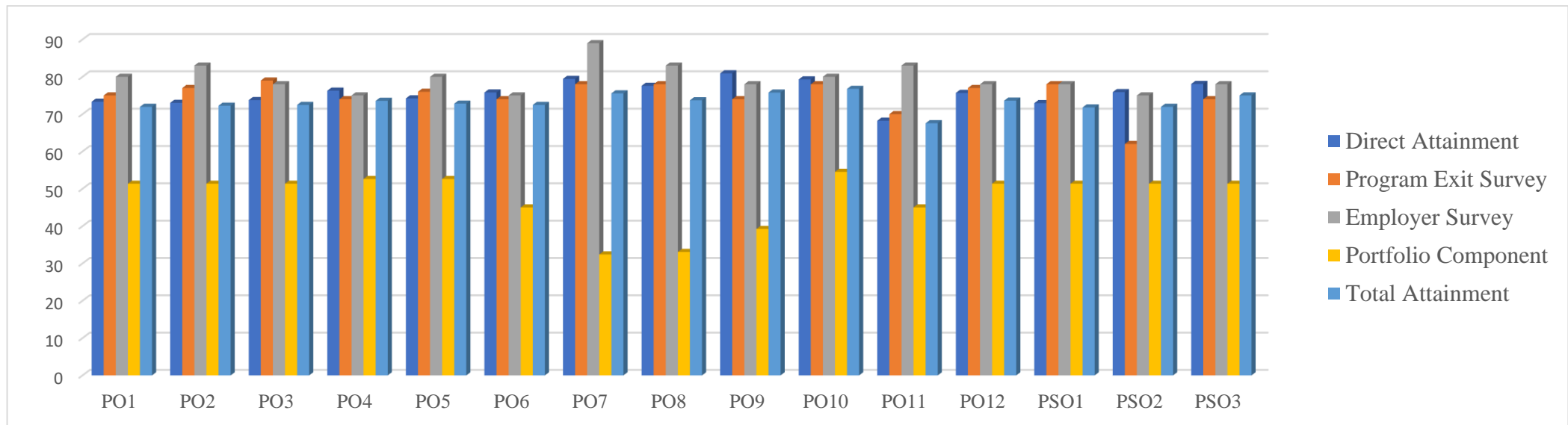
Accredited by NAAC & NBA (CSE, IT, ECE, EEE & ME)

Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada

L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

Final Attainment of 2015 Admitted Batch (Direct & Indirect)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Direct Attainment	73.32	73.02	73.76	76.28	74.21	75.8	79.43	77.58	80.93	79.3	68.24	75.68	72.94	75.89	78.08	
Indirect Attainment	Exit Survey	75	77	79	74	76	74	78	78	74	78	70	77	78	62	74
	Employer Survey	80	83	78	75	80	75	89	83	78	80	83	78	78	75	78
	Student portfolio	51.35	51.35	51.35	52.62	52.62	45	32.4	33.07	39.23	54.53	45	51.35	51.35	51.35	51.35
Total Attainment	71.96	72.25	72.47	73.56	72.81	72.46	75.55	73.72	75.78	76.77	67.57	73.62	71.8	71.96	75	





ATR ON POs AND PSOs ATTAINMENTS FOR THE A.Y.:2018-2019 (15 Admitted Batch)

PO	Target (%)	Attained (%)	Observation
PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	70	71.96	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 59 courses contributed to PO1 • Attainment in courses like Basic Electrical Engineering, Physics, Chemistry, Discrete Mathematics, Computer Networks, Computer Organization, Operating system, and Information security need to be improved. • Indirect attainment from student-portfolio need to be improved

Action1: To strengthen the PO1, department was organized a two-day workshop on "Microsoft Cloud Technologies".

Action2: To further strengthen PO1, Department is planning to organize a one-week workshop on "Data science with Python".

PO	Target (%)	Attained (%)	Observation
PO2: Problem analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	70	72.25	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 59 courses contributed to PO2 • Attainment in courses like Basic Electrical Engineering, Physics, Chemistry, Discrete Mathematics, Computer Networks, Computer Organization, Operating system, and Information security need to be improved.

Action1: For improving problem analysis skills among students, new courses are included. Statistical programming with R language is one such example as per the suggestions from BOS members and industry representatives.

Action2: Mandatory Courses like Problem Assisted Learning and Problem based learning are included in the new regulations.

Action3: Planning for a guest lecture from academician to strengthen problem solving skills.

PO	Target (%)	Attained (%)	Observation
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	72.47	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 60 courses contributed to

			PO3 <ul style="list-style-type: none"> • Attainment in Mini project, Main project and courses like programming languages, UML and Design patterns, Web technologies, and Computer networks and information security is not adequate and need to be improved. • Indirect attainment from student-portfolio especially project expo and workshops is not adequate and need to be improved.
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Action1: Department will ensure to further strengthen this PO, various new courses will be included viz. “Python Programming, Statistical Programming with R, Problem Assisted Learning, Problem Based Learning, Swift Programming, Scala Programming, PHP Programming, Google Go Programming, and Android Technologies”.

Action2: Students & Faculty members were trained by Amphisoft in E-Box in problem solving through programming.

Action3: The department will incorporate Virtual-lab environment (by IITs), to our students to design and develop new simulators for academic purpose that will enhance the students programming skills.

PO	Target (%)	Attained (%)	Observation
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.			

PO4	60	73.56	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 39 courses contributed to PO4 • Attainment in Laboratory courses ,Mini project, Main project and courses like programming languages, UML and Design patterns, Web technologies is not adequate and need to be improved. • Indirect attainment from student-portfolio especially project expo and workshops is not adequate and need to be improved
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Action1: The Department initiated the students to publish papers and poster presentation on recent cutting edge technologies in Computer Science and organized events accordingly, under the banner of “Association of Computer Geeks (ACG)”, a student association of CSE.

PO	Target (%)	Attained (%)	Observation
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.			

PO5	65	72.81	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 28 courses contributed to PO5 • Selection of projects in mini, major projects and topics in the seminar are obsolete. • Indirect attainment from student-portfolio especially project expo and workshops is not adequate and need to be improved
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Action1: For making students to more familiar with modern tools, the department will include “Android Technologies and R programming” to develop real-time applications.

Action2: Planning a DevOps guest lecture to enhance latest developments in cloud computing.

PO	Target (%)	Attained (%)	Observation
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.			
PO6	60	72.46	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 22 courses contributed to PO6 • Selection of projects in mini, main projects and topics in the seminar are obsolete and doesn't meet the requirements of the society. • Indirect attainment from student-portfolio especially the participation in NSS and NCC is low and need to be improved.
<p>Action1: Courses like Software Engineering, professional Ethics & Human Values and Professional Communication will include to strengthen the PO. More practice is required in Professional Communication that improves the placements in the future.</p> <p>Action2: Two new courses are introduce viz. Employability Enhancement Skills I & II to strengthen the dynamic decisions of engineering solutions for the better society needs by the students.</p>			
PO	Target (%)	Attained (%)	Observation
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.			
PO7	60	75.55	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 11 courses contributed to PO7 • Selection of projects in mini, main projects and topics in the seminar are obsolete. • Indirect attainment from student-portfolio especially project expo and workshops is not adequate and need to be improved
<p>Action1: The concerned faculty is directed to put more focus wherever necessary on Environmental Science by giving an assignment which may lead students to find Engineering solutions in this context.</p>			
PO	Target (%)	Attained (%)	Observation
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	65	73.72	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 19 courses contributed to PO8
<p>Action1: Directed concerned faculty of Professional Ethics and Human values course to give some example scenarios which may happen in real world and notice student responses, in order to inculcate ethical values and social responsibilities.</p>			

PO	Target (%)	Attained (%)	Observation
PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			

PO9	65	75.78	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 29 courses contributed to PO9 • Selection of projects in mini, main projects and topics in the seminar are obsolete. • Indirect attainment from student-portfolio especially project expo and workshops is not adequate and need to be improved
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Action1: To enhance Individual performance among students, department will be including courses like “Problem Assisted Learning, Problem Based Learning”.

Action2: Students will be directed to do theoretical and applied research in latest trends in computer science and engineering as a small group that enhance the team work and leadership qualities.

Action3: Students will be directed to implement various real-time applications that can be deployed in various domains.

PO	Target (%)	Attained (%)	Observation
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	76.77	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 28 courses contributed to PO10 • Documentation of projects in mini,main and topics in the seminar are not adequate and need to be improved • Indirect attainment from student-portfolio especially in paper presentation and group discussions is not adequate and need to be improved
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Action1: For improving Communication skills among students, department will include new course like “Employability Enhancement Skills” with the consideration of Employees from industry.

Action2: Students are ability to prepare a document for Projects, Seminars, Internship, Problem Assisted Learning and Problem Based Learning and need to give presentation about the same.

PO	Target (%)	Attained (%)	Observation
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	60	67.57	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 07 courses contributed to PO11 • Management activities of project like time limit ,team work and cost management need to be improved .
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Action1: For improving Project Management skills among students, the courses like “Project Management” will be included based on the feedback from faculties in our college.

PO	Target (%)	Attained (%)	Observation
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	73.62	<ul style="list-style-type: none"> Target reached Out of 68 courses 46 courses contributed to PO12
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Action1: Department will ensure that various new technologies are incorporated for upcoming regulations for making students to solve complex engineering problems using wide range of programming languages.

Action2: Department will constantly encouraging registering NPTEL courses for further enhancement of theoretical and practical experience.

Action3: Will organize intra-department competitions and National Level Technical Symposiums (Lakshya in our campus).

Action4: Encouraging students to participate in various events organized in outside colleges/ Institutions.

PSO	Target (%)	Attained (%)	Observation
PSO1: Programming Paradigms: To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.			

PSO1	70	71.8	<ul style="list-style-type: none"> Target reached Out of 68 courses 43 courses contributed to PSO1 Attainment in courses like programming languages , Data structures and algorithms need to be improved.
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Action1: To improve the Programming paradigm, department will be introducing various new programming Languages to the upcoming batches that may enhance students to be industry ready. Few courses are going to include: - Google Go, Swift Programming, Scala Programming etc.

Action2: To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills among students the following courses are to be incorporated viz.,

- Problem Assisted Learning (PAL)
- Problem Based Learning (PBL)
- Visualization tools

PSO	Target (%)	Attained (%)	Observation
PSO2: Data Engineering: To inculcate an ability to Analyse, Design and implement data driven applications into the students.			

PSO2	70	71.96	<ul style="list-style-type: none"> Target reached Out of 68 courses 28 courses contributed to PSO2 Attainment in courses like Data base Management Systems, UML and Design patterns , Data structures and algorithms, and Data mining and warehousing need to be improved
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Action1: To aware of data engineering domain, department will train the faculty and students together for enhancing their skills on real-time problems. The following courses will be incorporating to meet the industry requirements:

- Big Data Analytics
- Internet of Things
- Visual Analytics using Tableau or Power BI

PSO	Target (%)	Attained (%)	Observation
PSO3: Software Engineering:			Develop an ability to implement various processes/methodologies/practices employed in design, validation, testing and maintenance of software products.
PSO3	70	75	<ul style="list-style-type: none"> • Target reached • Out of 68 courses 20 courses contributed to PSO3 • Attainment in courses like Software Engineering, software project management , software testing and programming languages need to be improved.
<p>Action1: Department will encourage in building a software products and their maintenance using latest technology over a cloud like “DevOps” that will strength the student’s ability.</p> <p>Action2: Department will provide a platform Students will be encouraged to undergo a training program to develop a secure software applications and its life cycle.</p>			

Note: Even though the overall attainment is reached, However the department has noticed few subjects are under the target level, therefore the following actions are initiated.

Actions Initiated:

1. Remedial Classes conducted to the students
2. Hands on Workshops
3. Faculty Development Programs
4. NPTEL Courses
5. Guest Lectures by experts from Industry/ Academics.



Head of the Department
(Dr.Ch.V.Narayana)