

**Freshman Engineering Department**

The attainment of Program Outcomes of R23 regulation all first year courses for the academic year 2023-24.

S.No.	Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
1	23CS01	Introduction to Programming	2.27	2.27	2.25									
2	23FE01	Communicative English				2.46					2.46	2.46		2.46
3	23FE02	Chemistry	2.39	2.36	2.36	2.36		2.35	2.35					2.37
4	23FE03	Linear Algebra and Calculus	2.42	2.41										2.42
5	23FE04	Engg Physics	2.08	2.08	2.08	2.08	2.08	2.08	2.09					2.08
6	23ME01	Engineering Graphics	2.41	2.40	2.42									2.40
7	23EE01	Basic Electrical and Electronics Engineering	2.43	2.46	2.33			2.67					2.67	2.45
8	23MC01	Basic Civil and Mechanical Engineering	2.34				2.31		2.32			2.22		2.31
9	23CS51	Computer Programming Lab	2.62	2.62	2.65		2.62			2.62	2.62	2.62	2.62	2.62
10	23FE51	Communicative English Lab				2.80		2.80			2.80	2.80		2.78
11	23FE52	Chemistry Lab	2.69	2.70	2.69		2.69	2.68	2.70					
12	23IT51	IT Workshop	2.82				2.83				2.77	2.77	2.77	
13	23FE53	Engineering Physics Lab	2.48	2.48	2.48	2.48				2.48	2.48			2.48
14	23EE51	Electrical & Electronics Engineering Workshop	2.54	2.55	2.70	2.55	2.57			2.55	2.54	2.55	2.59	2.52
15	23ME51	Engineering Workshop	2.83	2.83	2.83	2.83				2.87	2.82			2.83
16	23FE05	Differential Equations & Vector Calculus	2.03	2.00										2.03
17	23CS02	Data Structures	2.39	2.39	2.35	2.35								
18	23FE06	Engineering Chemistry	1.91	1.93	1.93	1.93		1.94	1.94					1.92
19	23EE52	Electrical Circuit Lab	1.98	1.98	1.87	1.99	2.01			1.98	1.98	1.98		
20	23EC51	Network Analysis And Simulation Lab	2.97	2.97		2.97	2.97					2.97	2.97	2.97
21	23EC01	Network Analysis	2.40	2.41	2.34	2.17								
22	23EE02	Electrical Circuit Analysis-I	2.18	2.18	2.14									
23	23ME02	Engineering Mechanics	1.76	1.72	1.53	1.86								1.76
24	23ME52	Engineering Mechanics Lab	2.64				2.57	2.37						2.57
25	23CE51	Engineering Mechanics And Building Practices	2.76	2.91		2.91								2.73
26	23FE54	Engineering Chemistry Lab	2.21	2.17	2.28		2.20	2.25	2.17					
27	23CS52	Data Structures Lab	2.37	2.37	2.37	2.37	2.37			2.49	2.49	2.49	2.49	2.49
28	23AU01	HWYS						2.04		2.04	2.04	2.03		2.04
29	23AU02	NNCS						2.59	2.64	2.59	2.62	2.61		2.61
		Average PO Values	2.40	2.37	2.31	2.41	2.47	2.38	2.32	2.49	2.51	2.50	2.67	2.42
		Target	2.40	2.10	2.00	2.00	2.20	2.40	2.40	2.40	2.60	2.60	2.50	2.50



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(Autonomous)

Approved by AICTE, New Delhi and Permanently Affiliated to JNTUK, Kakinada
Accredited by NAAC with "A" Grade and NBA (CSE, IT, ECE, EEE & ME) under Tier - I



Freshman Engineering Department

POs Attainment Levels and Actions for Improvement- (2023-24)

The contribution of PO attainments from all first-year courses to the overall POs is analyzed and compared with target levels. The corresponding actions taken are tabulated in the above table. However, the overall attainment of POs and PSOs depends on all the remaining courses in the specific UG program

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

	Target	Attainment	
PO1	2.40	2.40	The application of engineering knowledge is less in courses such as Introduction to Programming, Chemistry, Engineering Physics, BCME, Differential equations and vector calculus (DEVIC), Data Structures (DS), Engineering chemistry, EC Laboratory, Electric Circuit Analysis (ECA) -1, Engineering Mechanics (EM), EC Lab, and DS Lab. These courses have not met the target.

Action 1: Changed the teaching methods to strengthen the attainment of PO1.

Action 2: Conduct tutorial classes.

Action 3: During laboratory sessions, showed video content related to the laboratory.

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.

	Target	Attainment	
PO2	2.10	2.37	The problem analysis level is found to be lower in the following courses: Engineering Physics, Differential equations and vector calculus (DEVIC) EC, EC Lab, ECA, and EM. These courses have PO attainment values below the target.

Action 1: The faculty are instructed to discuss and prepare analysis-level problems in class and assignments to strengthen the attainment.

Action 2: The faculty are instructed to conduct additional tutorials to improve student performance in the analysis-level section.

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.

	Target	Attainment	
PO3	2.00	2.31	The development of solutions is found to be lower in Engineering Mechanics, EC, and EC Lab, which are the courses that have not met the target.

Action 1: The attainment of courses that address development of solutions for the complex problems enhanced by providing additional tasks and follow-up actions.

Action 2: Conducted tutorial sessions with senior faculty to enhance the development of solutions.

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.

	Target	Attainment	
PO4	2.00	2.41	Fifteen courses are mapped to PO4, and three of them have not met the target. These courses are EC, EC Lab, and EM.

	Action 1: Conducted workshops on design and analysis-level experiments. Action 2: Faculty are encouraged to emphasize the importance of data interpretation and information synthesis to students by providing complex problems.		
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	Target	Attainment	Eleven courses are mapped to the modern tool usage PO5. Only two courses have fallen short of the target, namely Electrical Circuit Lab and Engineering Physics.
	2.20	2.47	
	Action 1: Conducted workshops by the Engineering departments to help students understand the importance of modern tools used in engineering and real-life problem-solving. Action 2: Emphasized the importance of applying IT tools and hardware tools in laboratories.		
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	Target	Attainment	Observations - Target not reached: There are 10 courses mapped to this PO, and 6 of them have not met the target.
	2.40	2.38	
	Action 1: Placed greater emphasis on health and wellness, yoga, and sports activities to enhance students' personality development. Action 2: Encouraged students to actively participate in various NSS and NCC activities to foster a sense of social responsibility.		
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	Target	Attainment	Observations - Target not reached: Only 7 courses are mapped to the Environment and Sustainability PO, and 5 of them have not met the targets.
	2.40	2.32	
	Action 1: The Prakruthi Club has organized various activities to raise awareness among students about the environment and its preservation. Action 2: In addition to second-year students, first-year students were also involved in the Environmental Club activities.		
PO 8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	Target	Attainment	Observations - Target Reached: Only 9 courses are mapped to this PO, and 2 courses have not met the target.
	2.40	2.49	
	Action 1: Introduced some credit courses in the first year to raise students' awareness of ethical principles in professional engineering practice. Action 2: Conducted guest lectures on ethical principles to motivate students with real-life examples and encourage them to debate ethical decisions and judgments. Action 3: Inculcated the importance of assignments and tutorial hours to the students.		
PO 9: Individual and team work: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.			
PO9	Target	Attainment	Observations - Target not reached: A total of 11 courses are mapped to this PO, and 6 courses have not met the target.
	2.60	2.52	

Action 1: Encouraged students to participate in both individual and team/group activities during laboratory sessions.

Action 2: Motivated students to engage in individual and team activities in club events.

Action 3: Inspired students to take part in a greater number of extracurricular activities.

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.

	Target	Attainment	Observations - Targets not reached:
PO10	2.60	2.51	Eleven courses contribute to this PO. It has been observed that 6 courses have not met the target: Communicative English, BCME, Electrical and Electronics Engineering Workshop, EC Lab, and DS Lab.
<p>Action 1: The college organized certificate courses on soft skills, and technical skills every year, in addition to regular classes as per the schedule.</p> <p>Action 2: Students are encouraged to participate in group discussions, role plays, debates, quizzes, essay writing, elocution competitions, and various club activities.</p> <p>Action 3: Spoorthi, the Literary Club, NSS Unit of LBRCE, and Saheli organized different events to enhance communication skills.</p>			

PO 11: 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.

leader in a team to manage projects and in multidisciplinary environments.			
PO11	Target	Attainment	Observations – Target reached:
	2.50	2.67	Only five courses contributed to this PO.
	Action 1: Inspired the students to participate in technical fests that focus on managing financial issues.		

PO 12: 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.

in independent and life-long learning in the broadest context of technological change.			
PO12	Target	Attainment	Observations - Target not reached: A total of 21 courses are mapped to this PO, and only 7 courses have met the target.
	2.50	2.42	
	Action 1: Students are encouraged to develop communication and technical skills by participating in various activities. Action 2: Organized alumni meetings every year to enhance students' learning skills. Action 3: Inculcate the importance of assignments and tutorial hours to the students.		

922 ✓
PRINCIPAL

PRINCIPAL

Lakireddy Bali Reddy College of Engg
MYLAVARAM-521230., NTR Dist.