LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(Autonomous)
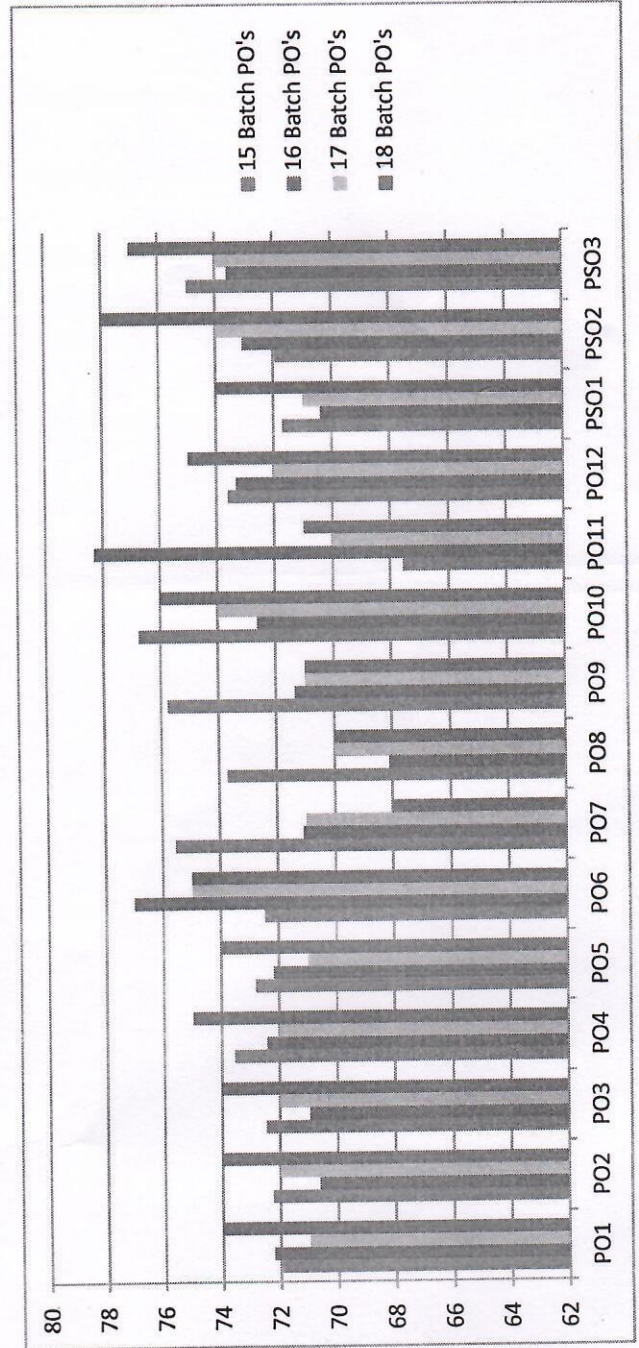
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Accredited by NAAC and NBA (CSE, IT, ECE, EEE & ME) under Tier – I

Comparion of 2015, 2016, 2017 and 2018 Batch PO's and PSO'S

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
15 Batch PO's	71.95	72.24	72.46	73.55	72.8	72.46	75.54	73.71	75.77	76.76	67.56	73.61	71.69	71.95	74.99
16 Batch PO's	72.22	70.63	70.95	72.42	72.18	77.01	71.09	68.11	71.34	72.62	78.29	73.3	70.39	73.06	73.59
17 Batch PO's	71	72	72	72	71	75	71	70	71	74	70	72	71	74	74
18 Batch PO's	74	74	74	75	74	75	68	70	71	76	71	75	74	78	77

Comparison of 2015,2016,2017 and 2018 Batch PO's and PSO's

Legend: ■ 15 Batch PO's ■ 16 Batch PO's ■ 17 Batch PO's ■ 18 Batch PO's

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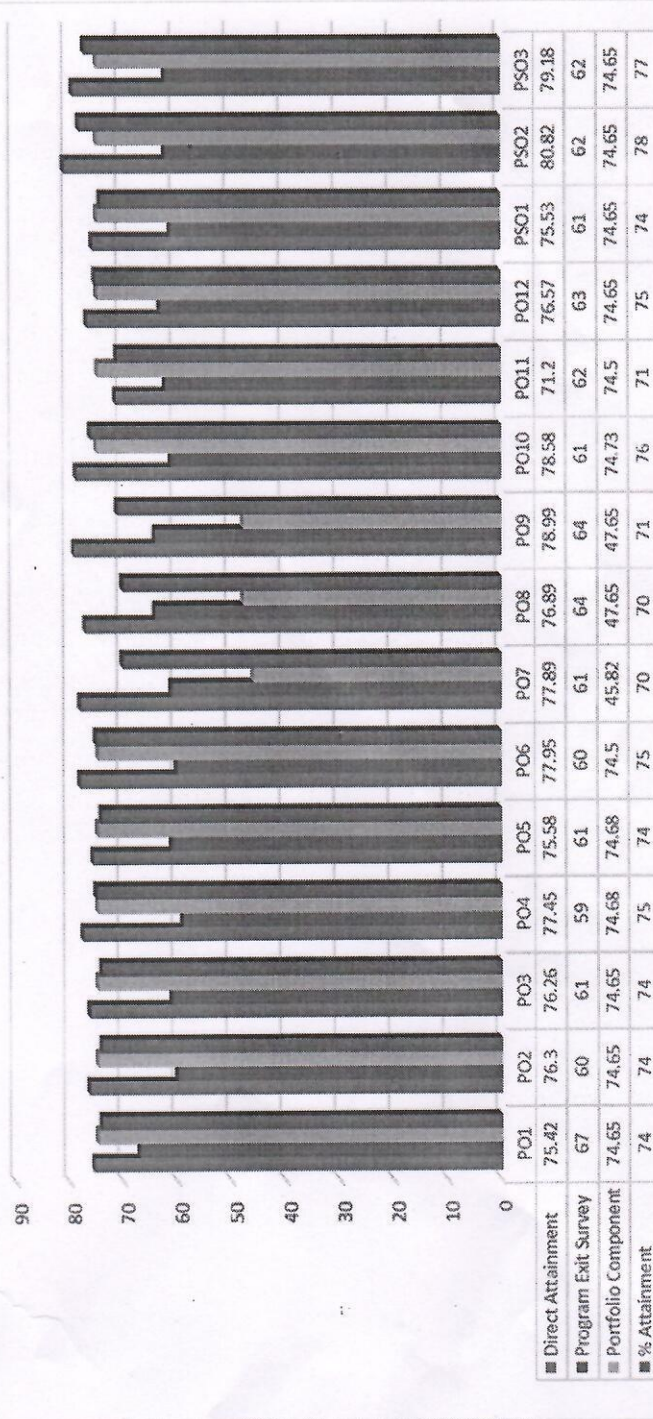### L.B.REDDY NAGAR, MYLAVARAM, KRISHNA DIST., A.P.-521 230.

Accredited by NAAC with 'A' Grade & NBA (Under Tier – I), ISO 9001:2015 Certified
Institution, Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
hodcse@lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Final Attainment of 2018 Admitted Batch (Direct & Indirect)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Direct Attainment	75.42	76.3	76.26	77.45	75.58	77.95	77.89	76.89	78.99	78.58	71.2	76.57	75.53	80.82	79.18
Program Exit Survey	67	60	61	59	61	60	61	64	64	61	62	63	61	62	62
Portfolio Component	74.65	74.65	74.65	74.68	74.68	74.5	45.82	47.65	47.65	74.73	74.5	74.65	74.65	74.65	74.65
% Attainment	74	74	74	75	74	75	70	70	71	76	71	75	74	78	77

2018 Batch PO & PSO Values

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
■ Direct Attainment	75.42	76.3	76.26	77.45	75.58	77.95	77.89	76.89	78.99	78.58	71.2	76.57	75.53	80.82	79.18
■ Program Exit Survey	67	60	61	59	61	60	61	64	64	61	62	63	61	62	62
■ Portfolio Component	74.65	74.65	74.65	74.68	74.68	74.5	45.82	47.65	47.65	74.73	74.5	74.65	74.65	74.65	74.65
■ % Attainment	74	74	74	75	74	75	70	70	71	76	71	75	74	78	77

POs& PSOs Attainment Levels and Actions for improvement – AY 21-22(18-Batch)

PO	Target (%)	Attained (%)	Observation
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	68	74	• Target reached
Action1: To strengthen the PO1, department is organizing various workshop on "Microsoft Certification Programs and AWS Cloud Practitioner Certification" **Action2:** Department is planning to conduct a various workshops and hands-on session in emerging technologies like DevOps, Advanced Python Programming etc. **Action3:** To instil coding skills among the student's department introduced Code Cracker Club.			
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	73	74	• Target reached
Action1: For improving problem analysis skills among students, new courses are included like Industrial IoT Fundamentals on AWS, Intelligent Machining as per the suggestions from BOS members and industry representatives. **Action2:** Planning to conduct guest lectures by renowned academicians to strengthen problem solving skills for the students. **Action3:** Department is encouraging the students to perform experiments beyond the syllabus in the Virtual Labs designed by IIT-Bombay			
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	69	74	• Target reached
Action1: Department will ensure to further strengthen this PO, various new courses will be included viz. "Design Thinking, Predictive Analytics, Gaming using Python, Wireless Adhoc and Sensor Network Open-Source Software. **Action2:** Our faculty members are trained in E-Box tool in problem solving through programming. **Action3:** The department will incorporate Virtual-Lab by IIT-Bombay environment, 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	71	75	• Target reached
Action1: Department is initiate students to enrol into course advanced skill-oriented courses conducted by Udemy, Coursera etc and get certified. **Action2:** The department will incorporate Virtual-Lab by IIT-Bombay environment, to our students to design and develop new simulators for academic purpose that will enhance the students programming skills.			
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	71	74	• Target reached
Action1: Department is initiate students to enrol into course like Web design using Django / Flask, Natural Language Processing Tool Kit, Cyber Security and publish papers and poster presentation on various latest trends in computer science and organized events accordingly, under the banner of "Association of Computer Geeks (ACG)", a student association of CSE.			

Action2: The department will incorporate Virtual-Lab by IIT-Bombay environment, to our students to design and develop new simulators for academic purpose that will enhance the students programming skills.

Action3: Planning to conduct various certification programs like Cisco, Microsoft, Amazon AWS.

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	73	75	• Target reached

Action1: Courses like Fundamentals of Entrepreneurship Principles of Technology and Innovation Management, and Professional Communication will include to strengthening this PO. More practice is required in Professional Communication that improves the placements in the future.

Action2: Department is planning to conduct a various workshop in related with Human Values, and Professional Communication.

Action3: Two courses are going to introduce viz. professional communication skills, management science for engineers are introduced to improve decision making skills of the students.

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	71	68	• Target not reached

Action1: Directed the concerned faculty to put more focus on Environmental Science by giving assignments which may lead students to find Engineering solutions in this context.

Action2: Students are encouraged to indulge in projects, in which global and environmental issues are improved, with respect to consumption of energy and utilization of renewable energy resources.

Action3: A new course entitled Environmental chemistry and Ecology is also introduced to understand the importance of balance in the ecology and sustainability.

PO	Target (%)	Attained (%)	Observation
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	68	70	• Target reached

Action1: Projects/ mini projects will be scrutinized, code reviews will be conducted, plagiarism check will be done to determine the originality of the project to ensure professional ethics.

Action2: Department is conducting expert lecture on professional ethics and laws.

Action3: Department will ensure to further strengthen this PO, new course NASSCOM Associate Analytics, Ethical Values for Business and Intellectual Property Rights, Innovation and Technology will be included in the curriculum

PO	Target (%)	Attained (%)	Observation
PO9: Individual and teamwork: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	69	71	• Target reached

Action1: To enhance Individual performance among students, department will be including courses like Skill development courses are introduced along with NPTEL.

Action2: Projects pertaining to the latest problems were analysed with frequent interactions from industrial experts and to distribute the work within the team towards its execution of through academic projects.

Action3: Students are to be encouraged to participate in teams in various technical events such as hackathons, and coding contests, etc.

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	73	76	• Target reached

Action1: In the practical sessions of English language Communication skills lab and Effective English

Communication and soft skills courses engineering students are encouraged to use english language more effectively in writing reports, notes and summaries.

Action2: Involvement of students by conducting the activities through Association of Computer Geeks (ACG).

Action3: Encourage students to participate in the Intercollegiate competitions, publishing technical articles.

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	69	71	• Target reached

Action1: For improving Project Management skills among students, the courses like Management Science for Engineers, Finance for Non-Finance Executives will be included based on the feedback from industry and academia.

Action2: The awareness is created among the student regarding the management principles and managing projects. The relevant courses are revised and upgraded regularly to cater to latest techniques and trends in the area.

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	70	75	• Target reached

Action1: Students are made to recognize the importance of lifelong learning through pep/ motivational talks and programmes. Using ICT facilities, such as PPTs, live demonstration of topics imparted using video lecture and real time webcast and lecture contents including new technological developmental tools and knowledge of new products, gives students and lifelong knowledge to be further improved upon.

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

Action3: The faculty is encouraged to guide and motivate the students to write articles in leading journals, participate in national and international conferences with the articles.

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

PSO	Target (%)	Attained (%)	Observation
PSO1: The ability to apply Software Engineering practices and strategies in software project development using open-source programming environment for the success of organization.			
PSO1	66	74	• Target reached

Action1: Even though there is improvement, we are concentrating on Application Oriented Teaching to further enhance students' professional skills.

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

- Data Science Lab
- Big Data and Cloud Computing
- Data Analytics and Visualization Lab

PSO	Target (%)	Attained (%)	Observation
PSO2: The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.			
PSO2	66	78	• Target reached

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:

- Bioinformatics for Engineers
- Digital Image Processing
- Computational Geometry
- Symbolic Logic and Automated Reasoning
- High Performance Computing

Action2: Maintain a technical questionnaire database to train students for placement and competitive

exams.

PSO	Target (%)	Attained (%)	Observation
PSO3: To inculcate an ability to analyse, design and implement database applications.			
PSO3	67	77	• Target reached
Action1: To strengthen the domain knowledge and make them job ready graduates, department is planning to introduce a greater number of professional elective courses.			
Action2: Department will provide a platform students will be encouraged to undergo various training program to develop different application in Data Engineering and its allied areas.			
Action3: Students are encouraged to publish research papers in various national and international journals/conferences.			

Head of the Department

HEAD
Department of Computer Science & Engineering
Lakireddy Balireddy College of Engineering
MYLAVARAM-521 230, A.P. INDIA