

## LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)

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### DEPARTMENT OF INFORMATION TECHNOLOGY

#### POs & PSOs Attainment Levels and Actions for improvement: Admitted Batch 2015-19 A.Y:2018-19

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-1. Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO 1	70	70.19	The number of courses mapped to this PO1 is 46. The number of courses that reached the target levels is 18 and 28 courses attainments were slightly less. After analyzing results and interacting with students, it was attributed that still they need more practice on problem solving with the help of mathematical logic/knowledge.
<p><b>Action Taken:</b></p> <p>Action 1: Conducted one day Orientation Programme on “Importance of engineering in the Society” on 28<sup>th</sup> June 2018 to improve the Engineering fundamentals and role of engineers in the current society.</p> <p>Action 2: For the theory courses the faculty are instructed to give more assignments for the students.</p> <p>Action 3: The faculties of the laboratory courses were advised to conduct more demonstration classes.</p>			
POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-2.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.			
PO 2	65	69.83	Out of 54 courses, 33 courses are mapped to this PO2.21 courses including laboratory and theory target levels are reached and for remaining 12 courses attainments were slightly less.
<p><b>Action Taken:</b></p> <p><b>Action 1:</b> Conducted Seminar on Visualization of Data Structures on 21<sup>st</sup> March 2016.</p> <p><b>Action 2:</b> For the theory courses the faculty are instructed to give more assignments for the students.</p> <p><b>Action 3:</b> The faculty of the laboratory courses was advised to conduct more demonstration classes.</p>			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-3.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.			
PO 3	65	70.53	52 courses are mapped to this PO3. Total 34 courses reached the target level including theory and laboratory. The target levels and attainment levels are low for 18 courses.
<b>Action Taken:</b> <b>Action 1:</b> More number of classes/tutorials were conducted for the courses which are contributing design & development of solutions. <b>Action 2:</b> Conducted a Workshop on “Ethical Hacking & Cyber Security” on 30 <sup>th</sup> and 31 <sup>st</sup> Oct 2015 to improve the research methods including design of experiments.			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-4. 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.			
PO 4	65	70.53	30 courses are mapped to this PO4. Target was reached but needs improvement. After analysis of results, it is observed that students are doing laboratory experiments without enough preparation i.e., in terms of designing experiment, analyzing and interpretation of results.
<b>Action Taken:</b> <b>Action 1:</b> To improve practical knowledge, Hands-on Sessions/Demonstration classes were conducted before executing the experiment. <b>Action 2:</b> Conducted workshop on “My Smart Phone kit for IOT- A Practical Approach” 27 <sup>th</sup> Feb 2016.			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-5. Modern tool usage:</b> Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.			
PO 5	65	69.21	Out of 34 courses, 23 courses are mapped to this PO2. Target was reached but needs improvement.
<b>Action Taken:</b> <b>Action 1:</b> Tutorials were conducted for the courses which contributed less. In addition to that tutorial hours are handled by two faculty members. <b>Action 2:</b> Conducted workshop on "5G Technologies" 7 <sup>th</sup> Sep 2018 to improve the modern tool usage. <b>Action 3:</b> Conducted Guest Lecture on “Linux Programming” on 10 <sup>th</sup> Oct 2015 to improve the practical knowledge on shell scripting.			

POs	Target Level (%)	Attainment Level (%)	Observations
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<b>PO-6. 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.			
PO 6	60	68.97	Number of courses mapped to PO6 are 18. The courses that reached the target level are 14 and 4 courses attainment levels are slightly less.
<p><b>Action Taken:</b></p> <p><b>Action 1:</b> Motivated the students by explaining the importance of doing internship and project work.</p> <p><b>Action 2:</b> The faculty are instructed to give practical examples relevant to engineering practices to enhance skills to handle problems in the societal context.</p> <p><b>Action 3:</b> The faculty are advised to allot a few topics for seminar related to society and the course content to present in the class room.</p>			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-7. 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.			
PO 7	60	68.49	Target was reached but needs improvement. 12 Courses are mapped to PO7. All the courses have reached the target comfortably.
<p><b>Action Taken:</b></p> <p><b>Action 1:</b> The faculty are instructed to teach and give practical approach of the topics in view of long term goals like environment and sustainability.</p> <p><b>Action 2:</b> It is advised to involve more number of students in the Environmental club activities.</p> <p><b>Action 3:</b> Inculcate the students to solve the problems on environmental oriented projects.</p>			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-8. Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO 8	60	74.42	9 courses are mapped to this PO8. Total 7 courses reached the target levels and for 2 course the attainment levels were marginal.(T290 and T138) After analysis of results and interacting with students, additional efforts required to improve knowledge on professional ethics and moral values.
<p><b>Action Taken:</b></p> <p><b>Action 1:</b> Faculty are advised to instruct the students about the importance of ethics in the engineering profession.</p> <p><b>Action 2:</b> Motivate the students on real life case study problems to debate on ethical decision and judgments.</p> <p><b>Action 3:</b> Faculty are advised to instruct students to follow ethical values while doing the programs, writing records and paper publications.</p>			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-9. Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			

PO 9	60	71.06	Out of 19 courses 17 courses are contributing to PO9. Totally 15 courses including theory and laboratory attained the target. 2 Course attainments were slightly less. (S312 and L166)
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**Action Taken:**

**Action 1:** Awareness on leadership qualities was created by project assessment and evaluation committee.

**Action 2:** Create awareness on teamwork by preparing the posters.

**Action 3:** Focus is given to motivate the students by conducting ICCIDE conference with in the Institution. So most of the students actively involved individually as well as team to make the event success.

**Action 4:** Conducted association activities to improve the teamwork/leadership qualities and communication skills.

**Action 5:** Organized National Level Technical Symposium “Lakshya 2K17” to improve the leadership qualities as well as teamwork of the students.

POs	Target Level (%)	Attainment Level (%)	Observations
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**PO-10. 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.

PO 10	60	71.72	16 courses are mapped to this PO10. Total 14 courses reached the target levels and for laboratory courses the attainment levels were marginal. 2 Courses attainments were slightly less in L166 and L164. After interacting with students, it was identified that additional focus required on development of communication skills.
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**Action Taken:**

**Action 1:** Group discussion / Role play/ Debate/ Quiz/Essay Writing competitions are encouraged at regular intervals.

**Action 2:** Classes on communication and soft skills, analytical aptitude, and technical skills are arranged by the college every year apart from regular classes as per schedule.

**Action 3:** Conducted association activities to improve the teamwork/leadership qualities and communication skills.

**Action 4:** Conducted workshop on Visualization of Data structures on 21<sup>st</sup> march 2016.

POs	Target Level (%)	Attainment Level (%)	Observations
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**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.			
PO 11	60	70.44	PO11 is mapped with only 15 courses. All courses reached the target. Still need to improve some courses.
<p><b>Action Taken:</b></p> <p><b>Action 1:</b> Focus is given to motivate the students by explaining the importance of doing internship and project work.</p> <p><b>Action 2:</b> Create awareness on project management by project assessment and evaluation committee.</p> <p><b>Action 3:</b> Conducted association activities to improve the teamwork/leadership qualities and communication skills.</p>			

POs	Target Level (%)	Attainment Level (%)	Observations
<b>PO-12. 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.			
PO 12	60	71.95	Out of 39 courses, 36 courses are contributing to PO12. Totally 36 courses including theory and laboratory attained the target. Only 3 Courses were not attainment. Attainment is low in the following Subjects S382, S395 and S163.
<p><b>Action Taken:</b></p> <p><b>Action 1:</b> Additional classes to be conducted to introduce Turing Machine and Push down automata concepts.</p> <p><b>Action 2:</b> Conducted two day workshop on digital marketing on 30<sup>th</sup> Aug and 31<sup>st</sup> Aug 2018 to enhance the employability skills of the students.</p>			

PSOs	Target Level (%)	Attainment Level (%)	Observations
<b>PSO1:</b> Organize, Analyze and interpret the data to extract meaningful conclusions.			
PSO 1	60	70.2	45 courses are contributing to PSO1. Totally 32 courses including theory and laboratory attained the target. 13 Courses failed to attain. Attainment is low in the following Courses L166, S163 and S382.

**Action Taken:**

**Action 1:** The faculty handling the courses who failed to attain the target are instructed to give more assignments for the students. In addition to that tutorial hours are handled by two faculty members.

**Action 2:** The faculty of the laboratory courses who failed to attain the target are advised to conduct more demonstration classes before attending laboratory.

**Action 3:** Organized one day guest lecture on "Influence Of Technology In Financial Industry" on 4<sup>th</sup> Sep 2018 to create awareness on industrial requirements.

PSOs	Target Level (%)	Attainment Level (%)	Observations
<b>PSO2:</b> Design, Implement and Evaluate a computer-based system to meet desired needs.			
PSO 2	65	69.73	Out of 45 courses 34 courses are contributing to PSO2. Totally 34 courses including theory and laboratory attained the target. 11 Courses failed to attain. Attainment is low in the following Subjects S163, L130 and L166.

**Action Taken:**

**Action 1:** More examples on Turing Machine practiced by students in additional classes (S163)

**Action 2:** The faculty of the laboratory courses who failed to attain the target are instructed to demonstrate experiments using video lectures in order to motivate students. (L166 and L130)

**Action 3:** Organized Two day Workshop on Python Programming, APSSDC, 7<sup>th</sup> to 9<sup>th</sup> Dec 2017.

PSOs	Target Level (%)	Attainment Level (%)	Observations
<b>PSO3:</b> Develop IT application services with the help of different current engineering tools.			
PSO 3	65	69.91	Out of 68 courses 25 courses are contributing to PSO3. Totally 11 courses including theory and laboratory attained the target. 14 Courses failed to attain. Attainment is low in the following Subjects L184, L120 and S163.

**Action Taken:**

**Action 1:** The faculty of theory courses whose target has not reached are instructed to conduct more tutorials to improve the student performance.

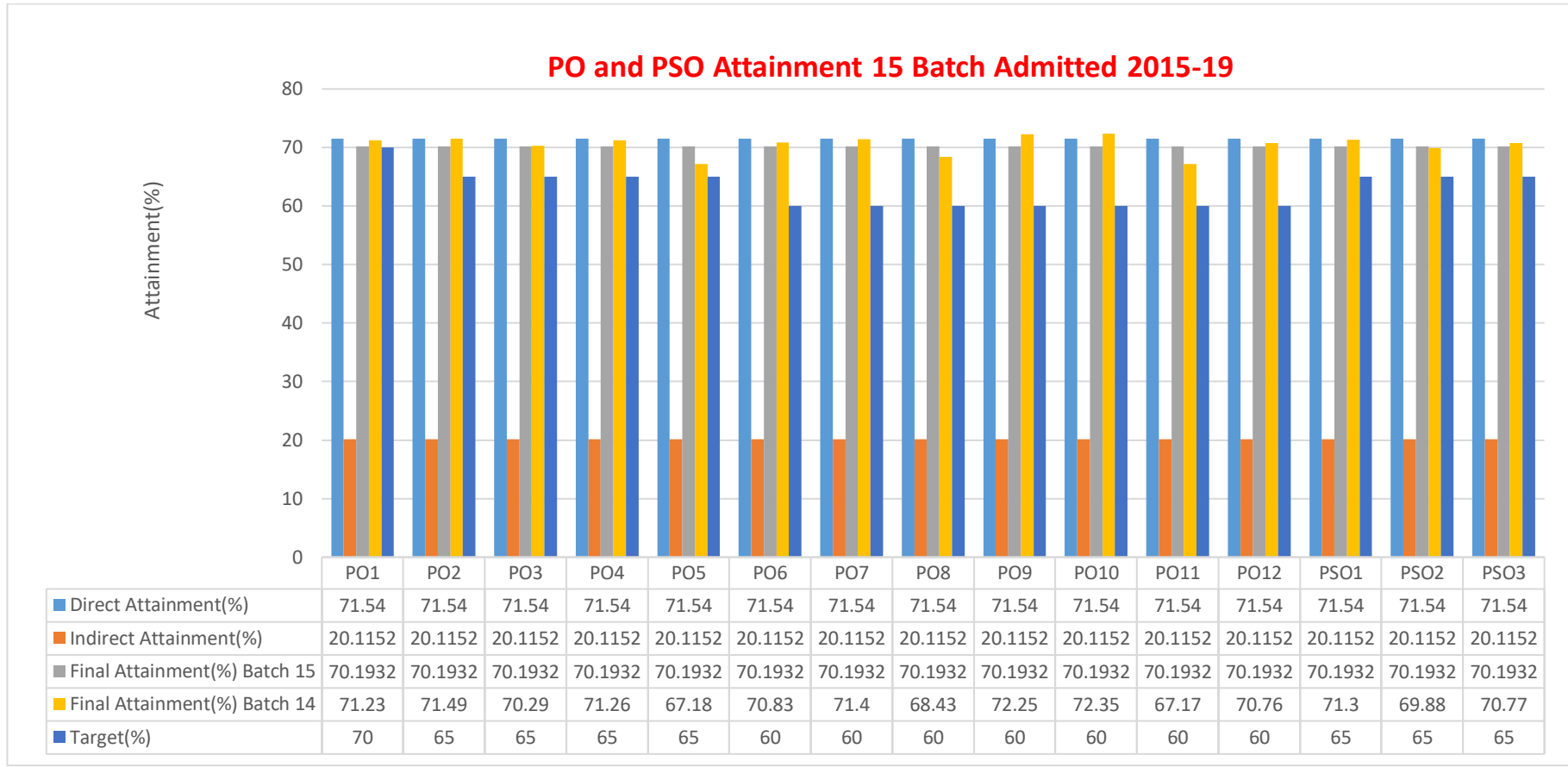
**Action 2:** To strengthen the L120, workshop is Conducted on Web Trends ON 13<sup>th</sup> Dec 2017. So that students can improve the development & programming skills.

**Action 3:** The faculty are advised to conduct Bridge course for the students who are lagging in basics of S157, S382 and S163.

**Action 4:** Conducted workshop on Blogging and Ethical hacking on 2<sup>nd</sup> and 3<sup>rd</sup> August 2014.

**Table B.7.IPOs & PSOs Attainment Levels and Actions for improvement**

**Observations and Action Taken Report:**



It is observed that the skills of admitted graduates of 2015-19 batch were improved in the following POS i.e PO5,PO8,PO11 and PSO2, Decreased in PO1,PO2,PO4,PO7,PO9,PO10,PSO1 and Stable in PO3,PO6,PO12 and PSO3 when compared with 2014-18 batches.

**Signature of the IQAC Member**  
**(Mrs.K.Anupriya)**

**Signature of HOD**  
**(Dr.B.Srinivasa Rao)**

**Signature of IQAC Coordinator**  
**(Prof.B.Ramesh Reddy)**

**Signature of Principal**  
**(Dr.K.Appa Rao)**