LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with 'A' Grade, ISO 9001:2015 Certified Institution
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

FRESHMAN ENGINEERING DEPARTMENT

Action Taken Report

POs Attainment for the (Batch 2014-15) A.Y. 2014-15

Total number of First year Courses under R14 regulation = 42

COURSE CODE	COURSE NAME	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
S132	Applied Mathematics - I	72	72	72									72
S133	Applied Mathematics - II	75	75	75									75
S135	Applied Mechanics	62	62					62					62
S143	Basic Electrical Engineering	67	68	67	67	71							68
S145	Basic Electronics Engineering	64	64	61									61
S146	Basic Engineering Mechanics	68	68		68	68							
S147	Basic Mechanical Engineering	72	72	67	76		72	72	67			72	74
S150	Building Materials and Construction	59					59	59	59	59			59
S156	Circuit Theory	46	46										
S170	Computer Programming	60	60	59									60
S178	Data Structures	70	70	69	68								70
S191	Digital Logic Design	73	73	72	72								77
S209	Electrical Circuits - I	76	76										76
S211	Electrical Circuits and Networks – I	70	67	70									70
S212	Electrical Circuits and Networks – II	72	74	76									71
S224	Electronics Devices and Circuits	75	75	69									75

S232	Engineering Chemistry	72	72	72			72	72					72
S235	Engineering Graphics					72				72		72	72
S237	Engineering Mechanics	75	75	75									75
S238	Engineering Physics	63	63	64	63	63							63
S239	English - I						72			72	72		72
S240	English - II						73			73	73		73
S282	Introduction to Engineering Mechanics	63	63	63	63					64	63	63	63
S288	Mathematics I	83	84	83									84
S299	Mathematics II	70	70	70									70
L113	Basic Mechanical Engineering Lab	79	74	83	74		82	82	90				82
L114	Basic Simulation Lab	50	50			50							50
L115	Building Planning and Computer Aided Drawing					93	93	93					93
L122	Basic Electronics Lab.	65	65	65	65					65	65		65
L123	Computer Aided Engineering Drawing Lab					78				78		78	78
L124	Computer Aided Engineering Graphics Lab					67				67		67	67
L126	Computer Programming Lab	66	66	66	66	66			66		66		66
L128	Data Structures Lab	85	85	85	85				85	85	85		85
L131	Digital Electronics Lab	60	60	60	60	60			60	60	60		
L135	Electrical Circuits and Networks lab	67	67		67	67							
L139	Electronics Devices and Circuits Lab	62	62	63	62	62							
L140	Engineering Chemistry Lab	92	92		92		92	92					
L142	Engineering Physics Lab	87	87	87	87					87			87

L143	Engineering Workshop	76		76	76	76	76			76			76
L144	English Communication skills lab				92					92	92		92
L154	IT Workshop	82			83	80							83
L175	Raptor and Office Suite Lab		73	73	73			82		73		73	73
Average PO		70	70	71	73	70	77	77	71	73	72	71	72
Target		64	64	63	63	62	61	63	64	64	67	63	63

Actions taken based on the results of evaluation of relevant POs

PO Attainment Levels and Actions for improvement: (Batch 2014-15) A.Y. 2014 – 15

The contribution of PO attainments to all POs from all first year courses are analysed and compared with target levels and the actions taken correspondingly are tabulated in table below.

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	64	70	**Target reached** Out of 42 courses 81% of the courses have been mapped with this PO. 1. Basic simulation lab, Digital Electronics Lab, EDC lab courses have not attained the given target. 2. In theory Applied Mechanics, Building materials and constructions, C programming, Engineering Physics, Introduction to Engineering mechanics are lagging marginally. 3. The attainment of Circuit theory course is found very less compared with all other courses.
	Action 1: It is instructed to the concerned faculty members that the courses which didn't reach the target have to be improved. **Action 2:** It is advised to monitor the students at regular intervals during the lab session keenly to overcome the difficulty in doing the experiments. **Action 3:** Additional tutorial classes for Circuit theory have been conducted.		
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.			

<table>
<tr><td>PO2</td><td>64</td><td>69</td><td>Target reached
Out of 42 courses 71% of the courses have been mapped with this PO.
1. Basic simulation lab, Digital Electronics Lab courses have not attained the given target.
2. In theory Applied Mechanics, C programming, Engineering Physics, Introduction to Engineering mechanics are lagging marginally.
3. The attainment of Circuit theory course is found very less compared with all other courses.</td></tr>
<tr><td></td><td colspan="3">Action 1: It is instructed to the concerned faculty members that the courses which didn’t reach the target have to be improved.
Action 2: It is advised to monitor the students at regular intervals during the lab session keenly to overcome the difficulty in doing the experiments.
Action 3: Additional tutorial classes for Circuit theory have been conducted.</td></tr>
<tr><td colspan="4">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.</td></tr>
<tr><td>PO3</td><td>63</td><td>70</td><td>Target reached
Out of 42 courses 64% of the courses have been mapped with this PO.
1. Digital Electronics Lab, EDC Lab courses have not attained the given target.
2. In theory C programming, Electrical Circuits and Networks – I are lagging marginally.</td></tr>
<tr><td></td><td colspan="3">Action 1: It is instructed to the concerned faculty members to conduct additional tutorials and inspire students in repeating the experiments to improve the program outcome.
Action 2: Instructions have been given to the concerned faculty to re-verify the teaching techniques.</td></tr>
<tr><td colspan="4">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.</td></tr>
<tr><td>PO4</td><td>63</td><td>74</td><td>Target reached
Out of 42 courses only 45% of the courses have been mapped with this PO.
1. All theory courses attained the target.
2. All Laboratory courses, except EDC Lab attained the given target.</td></tr>
</table>

<table>
<tr><td></td><td colspan="3">Action 1: Some of the courses are well above the target.
Action 2: Faculty are advised to maintain this for course attainment of next year courses also.</td></tr>
<tr><td colspan="4">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.</td></tr>
<tr><td>PO5</td><td>62</td><td>70</td><td>Target reached
Out of 42 courses only 31% of the courses have been mapped with this PO.
1. Only 4 theory courses have been mapped with this PO. All courses have attained the target except Engineering Graphics. It is lagging by just 1%
2. Out of 9 lab courses which have been mapped, only 2 courses Basic Simulation Lab, Digital electronics Lab failed to attain the target.</td></tr>
<tr><td></td><td colspan="3">Action 1: It is suggested to use the modern tools effectively.
Action 2: As most of the courses mapped are laboratory courses, it is recommended to explain the experiments and encourage students for more practice.</td></tr>
<tr><td colspan="4">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.</td></tr>
<tr><td>PO6</td><td>61</td><td>75</td><td>Target reached
Out of 42 courses only 26% of the courses have been mapped with this PO.
1. Only Building Materials and construction failed to attain the Program attainment level.
2. The remaining courses are well above the target.</td></tr>
<tr><td></td><td colspan="3">Action 1: Instructions are given to the course coordinator to review the teaching methods in order to attain the target.
Action 2: Faculty are advised to maintain the course attainment for next year courses also.</td></tr>
<tr><td colspan="4">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.</td></tr>
<tr><td>PO7</td><td>63</td><td>77</td><td>Target reached
Out of 42 courses only 19% of the courses have been mapped with this PO.
1. Only Building Materials and construction failed to attain the Program attainment level.
2. The remaining courses are mostly labs and are well above the target.</td></tr>
</table>

<table>
<tr><td></td><td colspan="3">Action 1: It is suggested to review environmental aspects related to the syllabus content effectively.
Action 2: Faculty are advised to maintain the course attainment for next year courses also.</td></tr>
<tr><td colspan="4">PO 8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</td></tr>
<tr><td>PO8</td><td>64</td><td>71</td><td>Target reached
Out of 42 courses only 14% of the courses have been mapped with this PO.
1. Building Materials and construction failed to attain the Program attainment level in theory.
2. The attainment of Digital Electronics Lab is also lower than the target.</td></tr>
<tr><td></td><td colspan="3">Action 1: It is suggested to emphasize on ethics and responsibilities related to the contents of the syllabus.
Action 2: The course instructor has been advised to supervise lab sessions to follow basic ethics while performing the experiments.</td></tr>
<tr><td colspan="4">PO 9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.</td></tr>
<tr><td>PO9</td><td>64</td><td>72</td><td>Target reached
Out of 42 courses only 33% of the courses have been mapped with this PO.
1. In theory courses Building Materials and construction, Engineering Graphics failed to attain the Program attainment level.
2. The attainment of Digital Electronics Lab is also lower than the target.</td></tr>
<tr><td></td><td colspan="3">Action 1: It is Suggested to the course instructor, to demonstrate the concepts with the help of models effectively.
Action 2: Course instructor is advised to expose the students towards the benefits of team work as well as individual task.</td></tr>
<tr><td colspan="4">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.</td></tr>
<tr><td>PO10</td><td>67</td><td>72</td><td>Out of 42 courses only 19% of the courses have been mapped with this PO.
1. In theory courses Introduction to Engineering mechanics failed to attain the Program attainment level.
2. The attainment of Basic Electronics Lab, and C programming lab is also lower than the target by 1%.
3. Digital Electronics Lab is considerably</td></tr>
</table>

			lower compared to other courses.
	Action 1: It is suggested to give priority to model based teaching to improve their skill in problem solving in the courses. **Action 2:** It is insisted to allot projects to the students based on D.E lab experiments to improve the experimenting skill.		
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.			
PO11	63	69	Out of 42 courses only 19% of the courses have been mapped with this PO. 1. In theory courses Engineering Graphics attainment is lower than the target. 2. The attainment of EDC Lab is just 1% below the target.
	Action 1: It is suggested to allot few projects to work in group to improve the ability to work in team as well as individually. **Action 2:** It is suggested to monitor the lab sessions carefully to improve the attainment levels.		
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.			
PO12	63	72	Out of 42 courses only 86% of the courses have been mapped with this PO. 1. In theory courses Applied Mechanics, Basic Electronics Engineering, Building Materials and Construction, Electrical Circuits and Networks – I, Engineering Graphics attainment is lower than the target. 2. Basic Simulation Lab attainment is significantly low and EDC Lab attainment is marginally less.
	Action 1: It is advised to insist on correlation between the contents of the subject and their applications in view of technological changes in broader contexts**.** **Action 2:** It is suggested to revise the contents of the labs where the students can understand the applications in view of upcoming demands in technological changes.		