LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (Autonomous)
L.B. Reddy Nagar, Mylavaram-521 230, Andhra Pradesh, INDIA
Affiliated to JNTUK, Kakinada & Approved by AICTE New Delhi
New Delhi & Certified by ISO 9001:2015, http://www.lbrce.ac.in
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING
Phone: 08659-222933/Extn: 203 holeee@lbrce.ac.in, eeelbrce@gmail.com

Date: 16-11-2020

CIRCULAR

There will be a meeting of Department Academic Committee (DAC) and Program Assessment Committee (PAC) on 16th November 2020 from 2:00 PM onwards to assess the PO attainments of 2016 admitted batch.

Venue: EEE Seminar Hall

16/11/20

HOD / EEE

DAC Members

S.No	Names of the Members	Signature
1.	Dr. J. Siva Vara Prasad (Chairman)	
2.	Dr. K. Harinadha Reddy	
3.	Dr.M.Uma Vani	
4.	Dr.P. Sobha Rani.	
5.	Dr. M.S.Giridhar	
6.	Dr.K.R.L.Prasad	
7.	Dr. G. Nageswara Rao	
8.	Dr.A V G A Marthanda	
9.	Mr.P.Deepak Reddy	
10.	Mr. J.V.Pavan Chand	
11.	Mr.B.Pangedaiah	

PAC Members

S.No	Names of the Members	Signature
1	Dr.P. Sobha Rani.	
2	Dr. M.S.Giridhar	
3	Dr. G. Nageswara Rao	

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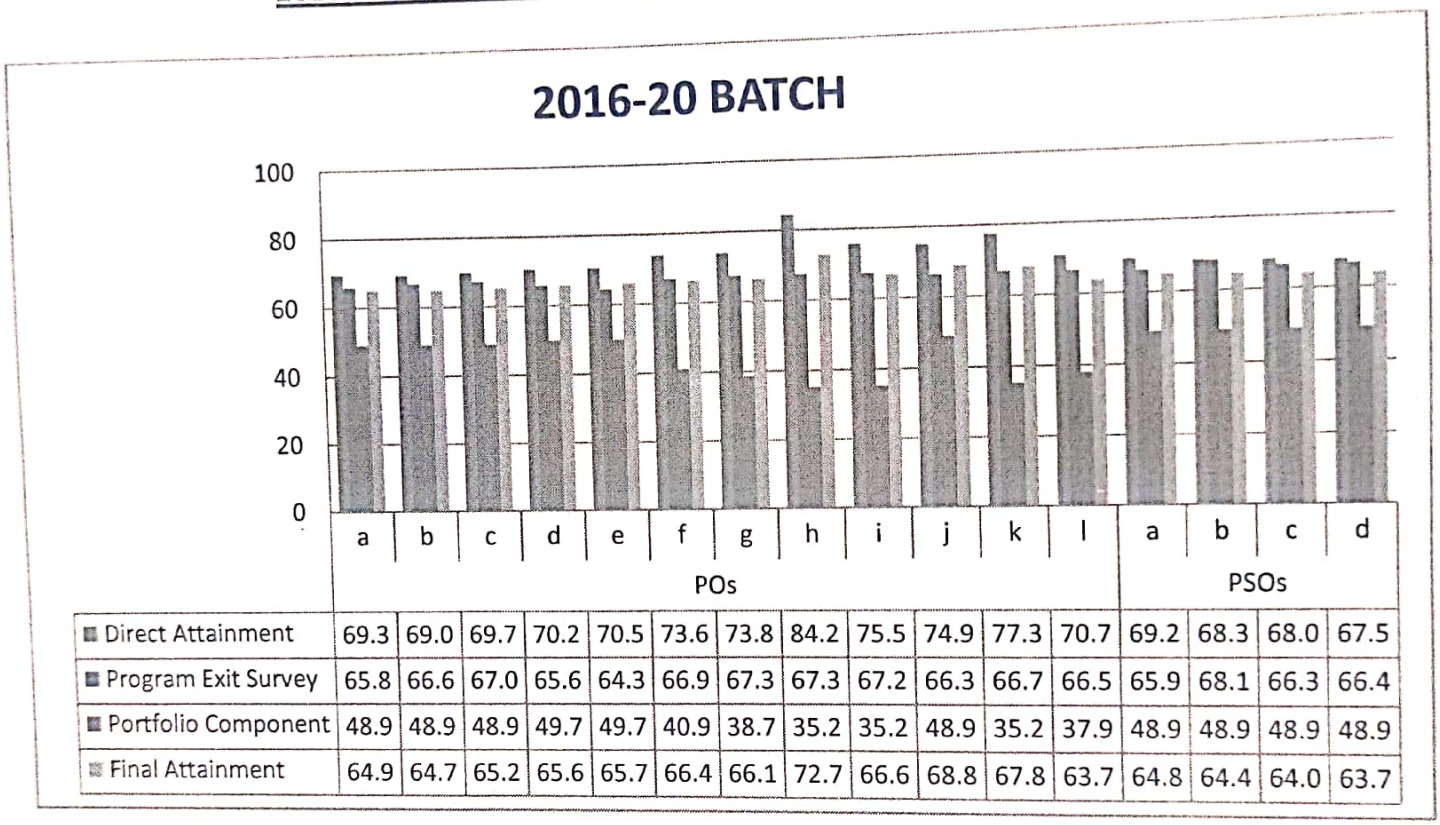
2016 Admitted Batch PO and PSO Attainments



	a	b	c	d	e	f	g	h	i	j	k	l	a	b	c	d
	POs												PSOs			
Direct Attainment	69.3	69.0	69.7	70.2	70.5	73.6	73.8	84.2	75.5	74.9	77.3	70.7	69.2	68.3	68.0	67.5
Program Exit Survey	65.8	66.6	67.0	65.6	64.3	66.9	67.3	67.3	67.2	66.3	66.7	66.5	65.9	68.1	66.3	66.4
Portfolio Component	48.9	48.9	48.9	49.7	49.7	40.9	38.7	35.2	35.2	48.9	35.2	37.9	48.9	48.9	48.9	48.9
Final Attainment	64.9	64.7	65.2	65.6	65.7	66.4	66.1	72.7	66.6	68.8	67.8	63.7	64.8	64.4	64.0	63.7

Final Attainment = 0.7 × (Direct Attainment) + 0.1 × (Programme Exit Survey) + 0.2 × (Student Portfolio)

PAC Coordinator

Head of the Department

SLP T6 | 11/20

Minutes of DAC and PAC Meeting held on 16th November 2020

POs Attainment Levels and Actions for improvement –2016 Batch.

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	75	64.91	1. Course attainments of majority of courses (Engineering chemistry, C programming, electronic devices and circuits, electromagnetic fields, electrical machines-I, Engineering thermodynamics, communication systems, Digital signal processing, Power Electronics, Computer Organization, High voltage engineering, Electrical Machines-II lab, Control Systems Lab,…etc) are less than the target values. These CO attainments which are mapped to PO1 are contributing to the direct attainment values of PO1. 2. Student portfolio attainment (Co-curricular and placement & Higher education…etc) which is an indirect assessment tool mapped to PO1 is low.
Action 1: In the courses related to programming languages, practical orientation is emphasized and a new lab course is introduced to improve the coding skills (Numerical Methods) which in-turn enhances the employability opportunities. **Action 2:** In program related courses to give better understanding of concepts, analysis using simulation tools is introduced in the R17 Regulation. **Action 3:** In addition to the curriculum experiments, project based experimentation is introduced to enable students achieve higher level learning outcomes. **Action 4:** To make students acquire additional skills needed for employment, various certification programs, workshops are being conducted regularly as per the calendar of events and NSS, Extra-curricular activities have been made mandatory in the R17 Regulation.			
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.			
PO2	75	64.79	1. Course attainments of majority of courses (Power system Lab, Electronic Devices and Circuits & LabVIEW Lab, microprocessor and microcontroller lab, Thermal and Hydro Prime Movers, Comprehensive Viva-voce-I & II, Engineering chemistry, computer programming, electrical power quality, solid state drives…etc) are less than the target values. Their CO attainments which are mapped to PO2 are contributing to the direct attainment values of PO2. 2. Student portfolio attainment (Co-curricular and placement & Higher education…etc)

			which is an indirect assessment tool mapped to PO2 is low.

Action 1: Additional classes are being planned to introduce the fundamental concepts of engineering courses (Basic engineering mechanics, Electrical circuit-I & II, Electrical Machines-I & II, Electromagnetic Fields).
Action 2: In program related courses to give better understanding of concepts, analysis using simulation tools is introduced in the R17 Regulation.
Action 3: In addition to the curriculum experiments, project based experimentation is introduced to enable students achieve higher level learning outcomes.
Action 4: Problem assisted learning (PAL) and problem based learning (PBL) are introduced to strengthen the problem analysis abilities of students.
Action 5: To make students acquire additional skills needed for employment, various certification programs, workshops are being conducted regularly as per the calendar of events and NSS, Extra-curricular activities have been made mandatory in the R17 Regulation.

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	75	65.28	1. Course attainment of few engineering sciences and core courses pertaining to design and development of engineering processes (Electrical circuit analysis-I, Pulse and Digital circuits, Control systems, Communication systems, Digital signal processing, Power electronics, Microprocessor and Microcontroller, Linear system analysis, Electrical machines-II lab, Objected Oriented Programming (C++) Lab,….etc) are low. 2. Student portfolio attainment (Co-curricular and placement & Higher education…etc) which is an indirect assessment tool mapped to PO3 is low.

Action 1: Problem assisted learning (PAL) and problem based learning (PBL) are introduced to strengthen the design abilities of students.
Action 2: Students are encouraged to carryout prototype projects for addressing the real time problems.
Action 3: To nurture the innovative ideas and development of innovative products, design contests/Project Expo's are conducted through Innovation & Incubation cell of the institute.

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	75	65.69	1. Core labs (Electronic Devices and Circuits & LabVIEW Lab, Fluid Mechanics and Hydraulic Machines Lab, Electrical circuits Lab, Computer programming, Electrical Machines-II Lab, Control Systems and Instrumentation Lab) and Integrated learning practices (Major project, Internship) related CO attainments are low.

			2. Student portfolio attainment (Co-curricular and placement & Higher education…etc) which is an indirect assessment tool mapped to PO4 is low.
Action 1: Curriculum labs are being updated with research equipment, sophisticated software tools to enable students learn content beyond the syllabus. **Action 2:** To create awareness about the research activities taking place in the area of electrical & electronics engineering, advanced labs (GETC, e Yantra Embedded systems & Robotics Lab) are setup. **Action 3:** Guest lectures, seminars, workshops, certification programs (Industrial Automation & SCADA, ANSYS) are being conducted on emerging technologies regularly to make students aware of the industry requirements.			
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	75	65.78	1. In few core courses including labs which are mapped to PO5 (Electrical Machines-I & II, Electrical power quality, Power System Operation and Control, Power Electronics, Power system analysis, Control systems, Power Quality, Communication systems) attainment values are less than target values. 2. Student portfolio attainment (Co-curricular and placement & Higher education…etc) which is an indirect assessment tool mapped to PO5 is low.
Action 1: To give better understanding of core concepts to student's analysis of concepts using simulation tools is introduced in R17 Regulation. **Action 2:** To give more emphasis to practical knowledge, Problem assisted learning (PAL) and problem based learning (PBL) are introduced in R17 curriculum. **Action 3:** Students are encouraged to take up industry and societal application based projects using emerging technologies. **Action 4:** Students are encouraged to participate in technical fests at the State and National level competitions.			
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	75	66.46	1. Course attainments of few core courses which are mapped to PO6 (Electronic devices and circuits, Switching Theory and Digital Logic, Environmental Studies, Communication systems, Digital signal processing, Power electronics….etc) and Integrated Learning Practices (Main project, Internship, Seminar-II) are below the target values. 2. Student portfolio attainment (Co-curricular and placement & Higher education, NSS and NCC….etc) which is an indirect assessment tool mapped to PO6 is low.

Action 1: Awareness programs on green energy, safety, energy conservation,….etc are conducted with experts from industry and academia.
Action 2: Students are motivated to take up extension activities through Association of Electrical Engineers of LBRCE, NSS, NCC.

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	70	66.19	1. It is observed that the course attainments of Engineering chemistry, Engineering Physics, Pulse and digital circuits, Control systems, Environmental studies, Power quality, and Main project are less than the target values. 2. Student portfolio attainment (Co-curricular and placement & Higher education, NSS and NCC….etc) which is an indirect assessment tool mapped to PO7 is low.

Action 1: Extension lectures by experts from industry and academia are being conducted regularly on environment and sustainability issues.
Action 2: Students are encouraged to take up extension activities on swatch Bharat, Energy conservation, digital India,….etc to create awareness among the rural communities..

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO8	70	72.74	1. Course attainments of seminar-I and Main project are low. 2. Student portfolio attainment (Co-curricular and placement & Higher education, NSS and NCC, and Extracurricular activities) which is an indirect assessment tool mapped to PO6 is low.

Action 1: Professional ethics and human values are embedded in the curriculum as mandatory course.
Action 2: Awareness is created among students to practice ethics while writing reports (Seminars, Mini and Main project, Internships, Technical publications).
Action 3: Students are encouraged to enroll in NSS and NCC units to inculcate ethical and moral values and serve the society.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO9	70	66.65	1. CO attainments of few laboratory courses (Electrical circuits lab, Electrical Machines-II Lab, Control Systems and Instrumentation Lab, Micro Processor and Micro Controllers lab, Power system lab,…etc) are observed to be less than the target values. 2. Course attainments of Integrated Learning Practices courses (Seminar-II, Internship, Comprehensive viva-voce-I & II, Major project,…etc) are low. 3. Student portfolio attainment (Co-curricular and placement & Higher education, NSS and NCC, and Extracurricular activities) which is an indirect assessment tool mapped to PO6 is

			low.
Action 1: Students are encouraged to register for online courses offered by NPTEL. **Action 2:** In R17 Regulations it has been made mandatory for students to participate in co-curricular and extra-curricular activities. **Action 3:** Students are encouraged to participate in department association activities which are embedded in the regular time table.			
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	70	68.89	1. CO attainments of lab courses (Electronic devices and circuits & LabView lab, Electrical Machines-II Lab, Micro Processor and Micro Controllers lab,...etc) and integrated learning practice courses (major project, Comprehensive Viva-voce-I & II, Seminar-I & II, Internship...etc) are below the target values. 2. Student portfolio attainment (Co-curricular and placement & Higher education...etc) which is an indirect assessment tool mapped to PO10 is low.
Action 1: To Involve all students to participate in AEEL activities, scheduled time has been allotted in the regular class Time-table. **Action 2:** Emphasis is given to ILP courses. **Action 3:** Career guidance training classes are made part of academic activity. **Action 4:** Students are motivated to participate in co-curricular activities at the State and National level competitions.			
PO11: Project management and finance: Demonstrate knowledge and understanding of the ring 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	70	67.85	1. The course attainments of Electronics Devices and Circuits, Switching Theory and Digital Logic, Control systems, Power system operation and control, Distribution Systems and Automation and Main project are below the target values. 2. Student portfolio attainment (Co-curricular and placement & Higher education, NSS and NCC, and Extracurricular activities) which is an indirect assessment tool mapped to PO11 is low.
Action 1: In the conduct of various department/institution activities students are involved to plan and execute the events so as to acquire managerial and leadership abilities. **Action 2:** Faculties act as facilitators in carrying out project works by the students.			
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	63.73	1. For majority of core and lab courses (Electrical Machines-I & II, Power systems-I & II, Pulse and digital circuits, Thermal and

			Hydro Prime Movers, Power electronics, Electrical Machines-II lab, Control systems and Instrumentation lab,...etc), ILP courses (major project, Comprehensive Viva-voce- I & II, Seminar-I & II,...etc) the attainment values are below the target values. 2. Student portfolio attainment (Co-curricular and placement & Higher education, NSS and NCC, and Extracurricular activities) which is an indirect assessment tool mapped to PO12 is low.
Action 1: Students are motivated to register for NPTEL courses to acquire self learning skills. **Action 2:** Students are involved in the conduction of Co-curricular/Extra-curricular activities to improve their soft skills.			
PSO1: Specify, design and analyze systems that efficiently generate, transmit and distribute electrical power			
PSO1	75	64.86	1. Majority of core courses (Electrical circuit analysis-I & II, Electromagnetic Fields, Electrical Machines-I, Control systems, Power system-I & II, Power system analysis, Control systems & Instrumentation lab, Electrical machines-II lab, Power electronics lab, Power systems lab, Seminar-I & II, Major project, ..etc) attainments are less than the target values. 2. Student portfolio attainment (Co-curricular and placement & Higher education...etc) which is an indirect assessment tool mapped to PSO1 is low.
Action 1: To enable students acquire the higher order learning outcomes, curricular labs are being up-graded with latest equipment. **Action 2:** To make students acquire interdisciplinary core competencies, advanced labs (e-yantra and GETC) are setup. Through these labs student's carryout mini and major project works. **Action 3:** To make students understand core concepts in a better way, analysis of core concepts using simulation tools is introduced in R17 regulation. **Action 4:** Seminars, Guest lectures and student workshops on emerging technologies are being conducted as per the calendar of events. **Action 5:** Project guidance by visiting faculties is arranged regularly to maintain the quality of main projects.			
PSO2: Design and analyze electrical machines, modern drive and lighting systems			
PSO2	75	64.42	1. Majority of core courses (Electrical Machines-I & II, Control systems, Power system protection and switchgear, Power system operation & control, Power Electronics, Control systems &

			Instrumentation lab, Electrical machines-II lab, Power electronics lab, Power systems lab, Seminar-I & II, Major project, ..etc) attainments are less than the target values. 2. Student portfolio attainment (Co-curricular and placement & Higher education…etc) which is an indirect assessment tool mapped to PSO2 is low.

Action 1: To enable students acquire the higher order learning outcomes, labs are being up-graded with latest equipment.

Action 2: To make students acquire interdisciplinary core competencies, advanced labs (e-yantra and GETC) are setup. Through these labs students carryout mini and major project works.

Action 3: To make students understand core concepts in a better way, analysis of core concepts using simulation tools is introduced in R17 regulation.

Action 4: Co-curricular activities on emerging technologies are being conducted as per the calendar of events.

Action 5: Project guidance by visiting faculties is arranged regularly to maintain the quality of main projects.

PSOs	Target Level	Attainment Level	Observations
PSO3: Specify, design, implement and test analog and embedded signal processing electronic systems			
PSO3	75	64.02	1. Course attainments of few electronic courses (Switching Theory and Digital Logic, Pulse and Digital circuits, Communication systems, Power electronics, Digital signal processing, Linear & Digital IC Applications, Electronic devices and circuits & LabView Lab, Microprocessor and microcontrollers lab) and ILP courses (Internship, Seminar-I & II, Comprehensive viva-voce-I & II,…etc) are less than the target levels. 2. Student portfolio attainment (Co-curricular and placement & Higher education…etc) which is an indirect assessment tool mapped to PSO3 is low.

Action 1: To improve the higher order core competencies of the students, MPMC and PE labs are up-graded.

Action 2: Students are motivated to use advanced labs facilities in the institute (NI, MEMS…etc) labs for carrying out their mini and main project works.

Action 3: To make students understand core concepts in a better way, analysis of core concepts using simulation tools is introduced in R17 regulation.

Action 4: Seminars, Guest lectures and student workshops on emerging technologies are

<table>
<tr><td colspan="4">being conducted as per the calendar of events.
Action 5: Project guidance by visiting faculties is arranged regularly to maintain the quality of main projects.</td></tr>
<tr><td colspan="4">**PSO4: Design controllers for electrical and electronic systems to improve their performance**</td></tr>
<tr><td>PSO4</td><td>75</td><td>63.71</td><td>1. For majority of core and elective courses (Electrical circuits-I & II, Electrical machines-I & II, Linear & Digital IC applications, Control systems, Power electronics, Special Machines, Solid state drives, High voltage engineering, Control systems & Instrumentation lab, Electrical circuits lab, power electronics lab, electrical machines-I lab, Seminar-I & II, Major project ....etc) attainments are less than the target values.
2. Student portfolio attainment (Co-curricular and placement & Higher education…etc) which is an indirect assessment tool mapped to PSO4 is low.</td></tr>
<tr><td colspan="4">Action 1: To enable students acquire the higher order learning outcomes, labs are being up-graded with latest equipment.
Action 2: To make students acquire interdisciplinary core competencies, advanced labs (e-yantra and GETC) are setup. Through these labs students carryout mini and major project works.
Action 3: To make students understand core concepts in a better way, analysis of core concepts using simulation tools is introduced in R17 regulation.
Action 4: Project guidance by visiting faculties is arranged regularly to maintain the quality of main projects.
Action 5: Advanced control techniques (Heuristic/Meta-Heuristic, Fuzzy, Neural) are introduced in relevant courses.</td></tr>
</table>

PAC Coordinator

Head of the Department

6/11/20