



Department of Electrical & Electronics Engineering

Course Design Review

Action Taken Report of the University on the Feedback of Stakeholders

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REGISTRAR
KLE Technological University
HUBBALLI-580 031

Department of Electrical & Electronics Engineering

2016-20 batch

Action Taken Report Approved in Board of Studies dated 15th April 2017 and implemented with effect from 2017-18


Observations/ Recommendations based on feedback	POs impacted	
<p>Employers Feedback:</p> <ol style="list-style-type: none"> 1. Introduce the courses which are relevant to present day Technological trends. 2. Industry Panel Members provided inputs to strengthen specializations in two or more areas like (1) Embedded Systems (2) Power Electronics and Drives and (3) Power and Energy Systems. <p>Teachers Feedback (Pre-BoS MoM):</p> <ol style="list-style-type: none"> 1. As per the Teachers' recommendations involved, increasing the focus on advanced electronics courses and programming courses for the students' enhancement in skills pertaining to fit in the Industry requirements. 2. Teachers have recommended to include more software related courses. <p>Students Feedback: Introduce new courses which are helpful for better employment.</p> <p>Alumni Feedback: More courses pertaining to soft skills may be introduced.</p> <p>Based on all of the above inputs the following changes have been incorporated.</p>	<p>PO1: Engineering knowledge</p> <p>PO2: Problem analysis</p> <p>PO5: Modern tool usage</p>	
Actions taken	Course Revised/ Added	BoS approved Date
<ol style="list-style-type: none"> 1. To enhance the Engineering Knowledge and Problem analysis skills, Electrical Machines course has been incorporated integrating Electrical Machines I and II. (POs addressed: 1, 2) 	<p>Course Revised Electrical Machines – 17EEEC201</p>	<p>15th April 2017</p>




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<p>2. Courses were organized into various Verticals catering to a specific stream as shown:</p> <p>I. Embedded Systems – 3 courses:</p> <ol style="list-style-type: none">1. Embedded Linux – 19EEEP403 (POs to address: 1, 2 and 5)2. IOT – 17EEEE302, (POs addressed: 1, 2)3. Autosar and Infotainment – 17EEEE401 (POs to address: 1, 2, 5 and 10) <p>II. Power Electronics and Drives – 3 courses:</p> <ol style="list-style-type: none">1. Digital Control Systems – 17EEEE301, (POs addressed: 1, 2, 3)2. Electric Drive Vehicles – 17EEEE402, (POs addressed: 1, 2, 3)3. Model Based Real Time Control Systems – 17EEEE407. (POs addressed: 1,2,3) <p>III. Modern Power and Energy Systems – 3 courses:</p> <ol style="list-style-type: none">1. Modelling and Analysis of Hybrid Electrical Systems – 17EEEE403 (POs addressed: 1, 2)2. Smart Grids – 17EEEE405, (POs addressed: 1, 2)3. Soft Computing Applications to Power Systems – 17EEEE404, (POs addressed: 2, 13) <p>Offering elective courses as three verticals will give more choices for the students to select relevant courses in verticals to seek more employment in chosen areas.</p>	<p>Courses Newly introduced under various Verticals</p> <ol style="list-style-type: none">1. Embedded Linux – 19EEEP4032. Internet of Things– 17EEEE3023. Autosar and Infotainment – 17EEEE4014. Multicore and Multiprocessor Architecture5. Digital Control Systems– 17EEEE3016. Electric Drive Vehicles– 17EEEE4027. Model based Real Time Control Systems – 17EEEE4078. Power Quality and Ancillary Services9. Modelling and Analysis of Hybrid Electrical Systems- 17EEEE40310. Smart Grids - 17EEEE40511. Soft Computing Applications to Power Systems– 17EEEE40412. Reliability Engineering	<p>15th April 2017</p> 
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2016-20 batch

Action Taken Report Approved in Board of Studies dated 7th April 2018 and implemented with effect from 2018-19

Observations/ Recommendations based on feedback	POs impacted	
<p>Employers Feedback: 1. Introduce more courses which are relevant to employability of students, such as OOPS with C++ etc. 2. Provide enough opportunities to use software tools and experimentation.</p> <p>Teachers Feedback (Pre-BoS MoM): 1. More software related courses, advanced electronics courses such as LIC and programming courses shall be introduced. 2. Power System Modeling, Operation and Control course shall be introduced at seventh semester level.</p> <p>Students Feedback: Increase such courses which are helpful for better employment.</p> <p>Alumni Feedback: Introduce more programming courses.</p> <p>Based on all of the above inputs the following changes have been incorporated.</p>	<p>PO1: Engineering knowledge</p> <p>PO2: Problem analysis</p> <p>PO4: Conduct investigations of complex problems</p> <p>PO5: Modern tool usage</p> <p>PSO2: Problem Solving.</p>	
Actions taken	Course Revised/ Added	BoS approved Date
<ol style="list-style-type: none"> To enhance the Engineering knowledge and Problem Analysis skills, Linear Integrated Circuits – 18EEEC301 Course has been introduced at 5th semester. (POs addressed 1,2,5 and 10). Control Systems Lab – 18EEEP302 has been introduced at 5th semester. (POs addressed 1,3,4,5,9 and PSO 2) Program Elective OOPS with C++ - 18EEEE301 has been introduced at 6th semester. (POs addressed 1,2,4,5 and PSO 2). 	<p>Courses Newly Introduced</p> <ol style="list-style-type: none"> Linear Integrated Circuits – 18EEEC301 Control Systems Lab – 18EEEP302 OOPS with C++ - 18EEEE301 	<p align="center">7th April 2018</p>




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<p>4. To enhance engineering knowledge and to solve complex engineering problems, Digital System Design using Verilog – 18EEEP303 has been introduced at 6th semester. (POs addressed 1 and 5)</p> <p>5. To enhance the Problem Analysis, mathematical modeling and simulation skills, Power System Modeling, Operation and Control – 19EEEC401 has been introduced at 7th semester. (PO addressed 2 and PSO 1).</p>	<p>4. Digital System Design using Verilog – 18EEEP303</p> <p>5. Power System Modeling, Operation and Control – 19EEEC401</p>	
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Observations/ Recommendations based on feedback	POs impacted
<p>Employers Feedback: 1. A course on Linux may be introduced as it is more relevant Operating System. 2. Introduce renewable energy systems as one of the electives for other branch students. 3. Embedded Linux course can be introduced because of strong market demand.</p> <p>Teachers Feedback (Pre-BoS MoM): 1. Flexible AC Transmission Systems course to be introduced under the Vertical Modern Power and Energy Systems. 2. Wind and Photovoltaic Systems course to be introduced as Open Elective.</p> <p>Students Feedback: Increase placement opportunities of Department students.</p> <p>Alumni Feedback: Increase focus on Embedded systems. Based on all of the above inputs the following changes have been incorporated.</p>	<p>PO1: Engineering knowledge</p> <p>PO2: Problem analysis</p> <p>PO3: Design/Development of Solutions</p> <p>PO4: Conduct investigations of complex problems</p> <p>PO5: Modern tool usage</p> <p>PSO1: Mathematical Modelling and Simulation</p>

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Actions taken	Course Revised/ Added	BoS approved Date
1. To encourage Team work in the form of course projects and enhance problem solving skills, Flexible AC Transmission Systems – 19EEEE401 has been introduced at 7 th semester. (POs addressed 1, 9 and PSO 1).	Course Newly Introduced under Modern Power and Energy Systems Vertical 1. Flexible AC Transmission Systems – 19EEEE401	
2. To encourage Wind and Photovoltaic Electrical Energy Systems – 19EEEE401 has been introduced as an open elective for 7 th Semester students. (PO addressed 1 and 3).	Course introduced as Open Elective 1. Wind and Photovoltaic Electrical Energy Systems – 19EEEE401	13 th April 2019
3. To inculcate problem analysis and conduct investigations of complex engineering problems, Embedded Linux – 19EEEP403 course has been introduced as a department Elective at 8 th semester. (POs addressed 1, 2 and 5).	Course introduced in Embedded Systems Vertical: 1. Embedded Linux – 19EEEP403	

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Observations/ Recommendations based on feedback		POs impacted
<p>Employers Feedback:</p> <ol style="list-style-type: none"> 1. Imbibe more team spirit among the students. 2. Provide enough opportunities to work in teams. 3. Increase placement opportunities by ensuring introduction of data structures using C. <p>Teachers Feedback (Pre-BoS MoM):</p> <ol style="list-style-type: none"> 1. Electrical Machines Lab course may be shifted to 5th semester. 2. DSD using Verilog Lab may be shifted to lower semester. <p>Students Feedback: Increase placement opportunities of Department students. Special programs on soft skills to be conducted in the Department.</p> <p>Alumni Feedback: More Power system related projects may be offered.</p> <p>Based on all of the above inputs the following changes have been incorporated.</p>		<p>PO1: Engineering knowledge</p> <p>PO4: Conduct investigations of complex problems</p> <p>PO5: Modern tool usage</p> <p>PO9: Individual and team work</p> <p>PO10: Communication</p>
Actions taken	Course Revised/ Added	BoS approved Date
<ol style="list-style-type: none"> 1. To make the students more competitive in solving the problems using coding language and enhance the logical thinking with respect to computer systems, Data structures using C – 18EEEP201 has been introduced at 3rd semester as core course. (POs addressed 1,4,5,9 and 10). 	<p>Course Newly Introduced</p> <p>Data structures using C – 18EEEP201</p>	7 th April 2018

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Department of Electrical & Electronics Engineering
2017-21 batch

Action Taken Report Approved in Board of Studies dated 13th April 2019 and implemented with effect from 2019-20

Observations/ Recommendations based on feedback	POs impacted
<p>Employers Feedback: 1. Introduction of a course on VLSI Circuits is preferable. 2. Enough opportunities can be created to equip students in Electrical Vehicles domain at least on simulation of EV power trains. 3. Recent campus interviews have asked questions on VLSI circuits.</p> <p>Teachers Feedback (Pre-BoS MoM): Battery Management Systems course may be introduced as Program Elective. A lab course on Electric Drives and Control may be introduced.</p> <p>Students Feedback: Problems of slow learners to be addressed.</p> <p>Alumni Feedback: Department may think of introducing a course on Electric Vehicles.</p> <p>Based on all of the above inputs the following changes have been incorporated.</p>	<p>PO1: Engineering knowledge</p> <p>PO2: Problem analysis</p> <p>PO5: Modern tool usage</p> <p>PO9: Individual and team work</p>

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Department of Electrical & Electronics Engineering

Actions taken	Course Revised/ Added	BoS approved Date
<ol style="list-style-type: none"> 1. To make the students more competitive in electronics related problem solving and develop the basic engineering knowledge, CMOS VLSI Circuits – 19EEEE301 has been introduced at 6th semester as Program Elective. (POs addressed 1 and 2). 2. To strengthen the e-mobility knowledge in students, Battery Management Systems – 19EEEE302 has been introduced as Program Elective under E-Mobility vertical at 6th semester. (POs addressed 1, 2, 3, 5 and 9). 3. To strengthen the Electrical machines and Power Electronics skills, Electric Drives and Control Lab – 19EEEP302 has been introduced. (POs addressed 1, 2, 4, 5 and 9). 	<p>Courses Newly Introduced</p> <ol style="list-style-type: none"> 1. CMOS VLSI Circuits – 19EEEE301 2. Battery Management Systems – 19EEEE302 3. Electric Drives and Control Lab – 19EEEP302 	<p>13th April 2019</p>

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**Department of Electrical & Electronics Engineering
2017-21 batch**

Action Taken Report Approved in Board of Studies dated 6th June 2020 and implemented with effect from 2020-21

Observations/ Recommendations based on feedback	POs impacted
<p>Employers Feedback: 1. It is desirable to introduce/revise courses which improves the creativity and parallel thinking among the students. 2. Introduce mathematical modeling and simulation of Electrical Vehicle Power Trains.</p> <p>Teachers Feedback (Pre-BoS MoM): The department should give more focus on Electric Vehicles by introducing relevant courses.</p> <p>Students Feedback: Increase placement opportunities of Department students.</p> <p>Alumni Feedback: 1. More simulation projects on real time data may be offered. 2. More projects from students will add value for students experiential learning.</p> <p>Based on all of the above inputs the following changes have been incorporated.</p>	<p>PO1: Engineering knowledge</p> <p>PO2: Problem analysis</p> <p>PO3: Design/Development of Solutions</p> <p>PO5: Modern tool usage</p> <p>PSO1: Mathematical Modelling and Simulation</p>



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Actions taken	Course Revised/ Added	BoS approved Date
<p>1. To provide the exposure of E-mobility specialization, two courses have been introduced, first one is Traction Systems for Electric Vehicles – 20EEEE401 (POs addressed 1, 2, 5 and PSO 1) and another one is Powertrain Control Laboratory – 20EEEE402 as Program Electives in this vertical. (POs addressed 1, 2, 3, 5, PSO1 and 2).</p> <p>2. To encourage the students for implementation of Capstone Project across different semesters, with introduction of Capstone Project Phase I of 6 credits (20EEEW401) in 7th semester, students will continue with Capstone Project Phase II of 11 credits in 8th semester. (POs addressed 2, 3, 4, 5, 9, 10 and PSO 1).</p>	<p>Courses Newly Introduced under E-mobility Vertical</p> <p>1. Traction Systems for Electric Vehicles – 20EEEE401 and Powertrain Control Laboratory – 20EEEE402</p> <p>Course Newly introduced as Project</p> <p>2. Capstone Project Phase I – 20EEEW401</p>	<p>6th June 2020</p>

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2018-22 batch

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Observations/ Recommendations based on feedback	POs impacted	
<p>Employers Feedback: 1. Communication skills of the students to be improved through introducing presentation and demonstrations in the courses. 2. Provide enough opportunities for participating in competitive exams like GATE, IES, UPSC.</p> <p>Teachers Feedback (Pre-BoS MoM): A beginners course on Signal Processing such as Signals and Systems may be introduced because of frequent questions asked on this course.</p> <p>Students Feedback: Increase placement opportunities of Department students.</p> <p>Alumni Feedback: More emphasis may be given to analyze electronic system problems through projects.</p> <p>Based on all of the above inputs the following changes have been incorporated.</p>	<p>PO1: Engineering knowledge</p> <p>PO2: Problem analysis</p> <p>PSO2: Problem Solving</p>	
Actions taken	Course Revised/ Added	BoS approved Date
<p>1. To enhance the engineering knowledge and problem solving skills of the students, Signals and Systems – 19EEEC205 has been introduced at 4th semester as a core course. (POs addressed 1 and 2).</p>	<p>Course Newly Introduced Signals and Systems – 19EEEC205</p>	<p>13th April 2019</p>




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