Department of Automation and Robotics

Course Design Review

Action Taken Report of the University on the Feedback of Stakeholders
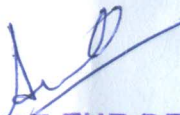
Programme Outcomes (PO's)

The graduates will have,

PO 1: Engineering knowledge	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization for the solution of complex engineering problems.
PO 2: Problem analysis	Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3: Design/Development of Solutions	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 public health and safety, and cultural, societal, and environmental considerations.
PO 4: 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.
PO 5: 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.
PO 6: 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.
PO 7: 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.
PO 8: Ethics	Apply ethical principles and commit to professional ethics, responsibilities, and norms of the engineering practice.
PO 9: Individual and team work	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10: Communication	Communicate effectively on complex engineering activities with the engineering community and with t h e 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 11: Project management and finance	Demonstrate knowledge and understanding of t h e 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 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.
PSO 13: Interdisciplinary Problem Solving	Demonstrate an ability to integrate principles of mechanical engineering, electrical and electronics and computer science to solve complex engineering problems.
PSO 14: Automation, Robotics and AI	Demonstrate an ability to use automation, robotics and AI to solve complex engineering problems.

1. **Action Taken Report Approved in Board of Studies dated** 5th **June 2021, and implemented with effect from** August 2021

Observations/ Recommendations based on feedback	POs impacted
Teachers Feedback (Pre-BoS MoM): • The faculty member Amit T expressed the need for introduction of a new elective and presented the syllabus on Robot Dynamics & Control (RDC) to mainly deal with the basic concepts on different types of motion planning problems and properties of motion planners, design the manipulator based on the dynamic task requirements. Hence a new elective introduced titled Robot Dynamics & Control, 17EARE302 for which the course objectives, syllabus content, In semester and end semester assessment was carried out. The elective course was approved.	PO1

Actions taken	Course Revised (R)/ Added (A)	BoS approved Date
Robot Dynamics & Control (RDC)- 17EARE302 introduced with the objectives listed below: • Derive the Lagrangian – Euler equations of motion for simple robot systems. • Determine the motor torque and the effect of gear reductions ratio • Explain the control strategies that achieve the desired path ideally. • Express a trajectory, which is a configuration as a function of time, as the composition of a geometric path (a configuration as a function of a path parameter) and a time-scaling and apply the motion planning schemes to industrial robot arm • Understand different types of motion planning problems and properties of motion planners and design the manipulator based on the task requirements.	Added (A)	5th June 2021

HEAD OF THE DEPT.
Automation & Robotics
K.L.E. Technological University,
HUBBALLI-31.

Department of Biotechnology

Course Design Review

Action Taken Report of the Department on the Feedback of Stakeholders

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Department of Biotechnology

Action Taken Report Approved in Board of Studies dated 06th June 2021 and implemented with effect from August 2021

Observations/ Recommendations based on feedback	POs impacted

Employers Feedback:
• Students need to improve the ability of problem solving skills.
• Students need to improve the knowledge and usage of modern tools.
 	
Teachers Feedback:
1. In Pre-BoS meetings, it was discussed to introduce the following new courses to address the latest advances in the field of Biotechnology
    • Vaccine technology
    • Genomic data analysis
2. It was also discussed to modify the course content of "Industrial Biotechnology" course.
 	
Students Feedback:
• Students expressed that the structured inquiry and open ended experiments in different labs have helped them in better understanding of the course.
• Students appreciated the department initiative about industry internship
• Students expressed the requirement of hands on training on the operation of fermenter.
• Students expressed the inclusion of concepts of design of experiments (DOE) in Biostatistics course has helped in better execution of minor and senior design project.
 	
Alumni Feedback:
• Students need to enhance capabilities for design and development of solution.
• Students need to improve the ability of problem solving skills.
• Students need to improve the knowledge and usage of modern tools.
• Data analysis skill has to be strengthened.
	PO2- Problem analysis
	
	PO4-Investigations of complex problems
	
	PO5-Modern tool usage
	
	PO12-Life long learning

2

Actions taken	Course Revised/ Added	BoS approved Date
Action 1: New department elective "Vaccine Technology" (21EBTE401) was incorporated in the curriculum to introduce the specific knowledge and process related information in the development and manufacturing of vaccines.	**Course added** Vaccine Technology	
Action 2: New department elective "Genomic Data Analysis" (21EBTE402) was added in the curriculum to introduce the concepts related to genomic data analysis.	**Course added** Genomic Data Analysis	06/06/2021
Action 3: The content modification was done in the following courses based on the inputs from different stake holders.	**Courses modified** Industrial Biotechnology, Immunology, Downstream Processing Technology	

School of Civil Engineering

Course Design Review

Action Taken Report of the University on the Feedback of Stakeholders

Year 2021-22
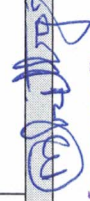
i. Action Taken Report Approved in Board of Studies dated 23/05/2021 and implemented with effect from 2021-22

ii.

Observations/ Recommendations based on feedback	POs impacted
Employers Feedback: According to data collected from the employers, improvement was needed in courses related Modern tool usage, ethics, life long learning and construction materials. **Teachers Feedback (Pre-BoS MoM):** i. For the Design of RCC structures course of the 5th semester, the Design of Isolated footing subjected to both axial load and eccentric loads must be included in Unit-3. Design of slabs and beams chapters must be combined into a single chapter as the design of flexural members. ii. Include topic on micro irrigation in Unit-II and Rename failure analysis to Stability analysis of dam. iii. For Highway Engineering Lab in 5th semester, it was suggested to included combined flakiness and elongation index under aggregate shape test. iv. For Solid Waste Management in 7th semester, Chapter 1 is updated to reflect the latest trends in solid waste management as introduction. v. For the Advanced RCC course of the 7th semester, the Design of special type of slabs is introduced in chapter 2. Design of combined footing and raft footing is combined into a single chapter. **Students Feedback:** According to data collected from the student, content on latest technology used in construction industry is required. **Alumni Feedback:** According to data collected from the alumni, improvement was needed in project management and Ethics.	PO 3, PO 5, PO 8, PO 11, PO 12, PO 13, PO 15

Professor & Head
School of Civil Engineering
KLE Technological University
Hubballi.

Actions taken	Course Revised/ Added	BoS approved Date
Chapter 6 Sustainability in Construction Industry and Chapter 7 BIM and Technology trends in Construction are introduced in the course "Construction Project Management".	Construction Project Management (21ECVC206)	23/05/2021
For the Design of RCC structures course of the 5th semester, the Design of Isolated footing subjected to both axial load and eccentric loads are included in Unit-3. Design of slabs and beams chapters are combined into a single chapter as the design of flexural members.	Design of RCC structures (15ECVC303)	23/05/2021
For the Advanced RCC course of the 7th semester, the Design of special type of slabs is introduced in chapter - 2. Design of combined footing and raft footing is combined into a single chapter.	Advanced RCC (15ECVE402)	23/05/2021
Advanced project Management course is moved from 5th semester core course to 7th semester elective. The following new chapters are introduced in this course Chapter 2 – Cost Controls Chapter 3 – Construction Site Layout Chapter 4 - Construction dispute and their Settlement Chapter 5 – Risk and Insurance in Construction Chapter 7 – Construction Labour and Labour Laws	Advanced project Management (21ECVE408)	23/05/2021

Professor & Head
School of Civil Engineering
KLE Technological University
Hubballi.

Action Taken Report

Computer Science & Engineering (UG)

Action Plan – Academic Review of Computer Science & Engineering

Action Taken Report Approved in Board of Studies dated May 2021 and implemented with effect from July 2022

2021-22

2	Observations/ Recommendations based on feedback	POs impacted
	Feedback from Employer 1. The students need to focus on C, usage of Data Structures and Algorithmic skills. 2. The students need to be exposed to Industry related project and problem statements. 3. The students are able to present their AI and ML knowledge skills via projects. 4. The students need to improve their database concepts. 5. Knowledge of multimedia networks concepts required for networking based industries. **Feedback from Faculty --- Pre BoS MOM** 1. To enhance the MEAN stack development by including the React JS in Web Technologies. 2. To deliver object oriented programming concepts using C++. 3. The computer organization and architecture course content upgraded and lab tutorials needs to be introduced for effective delivery. 4. To introduce the data integration and cloud services course to upskill students for data specific industry placements. **Course Feedback:** 1. The students requested to include electives like signals & systems, digital image processing, NN & deep learning related courses for project development. 2. The students requested to cover pre-requisites like data types and data visualization concepts in data mining course. **Feedback from Alumni:** 1. Expose the students to recent technology trends by making them to adopt in their projects.	**PO1** **PO2** **PO3** **PO5** **PO6** **PO9** **PO10** **PO12** **PSO2**

2. To make students participate in more and more technical competitions.
3. To identify set of companies to focus on industry-student profile match.
4. Industry institute collaborations need to be increased in the focused areas.
5. To introduce blockchain technology as a core course due to industry demand.

Actions taken: Based on the feedback from stakeholders, employers, faculty, alumni and students the following actions are initiated.	Course Revised/ Added	BoS approved Date
	Courses Revised:	**29-05-2021**
Inclusion of web architecture followed by React JS in place of DJango to cover the complete Mean stack in Web Technologies course.	Web Technologies Lab (21ESCP304) (0-0-2)	
The computer organization and architecture course content upgraded and lab tutorials introduced for effective delivery.	COA (3-0-1) 21ECSC201	
Additional credit is given to DM&A course for covering the pre-requisite wrt python programming, data types and data visualization at 4th sem.	Data Mining & Analysis (4-0-1)	
	Courses Introduced:	
Introduction of Blockchain and Distributed Ledgers course with concepts on cryptography, consensus mechanism, blockchain platforms & its applications.	Blockchain and Distributed Ledgers (21ECSC307) (2-0-1)	
Elective baskets: Signals & Systems, Fundamentals of Image and Video Processing, Neural Networks & Deep Learning introduced to upgrade knowledge and skills for conducting industry collaborative projects (Samsung, Spicer India, Humanoid)	Signals & Systems (21ECSE313) (3-0-0) Fundamentals of Image & Video Processing (21ECSE312) (3-0-0) Neural Networks & Deep Learning (21ECSE314) (3-0-0)	
DevOps course for skill enhancement in software development was introduced as per the suggestion of BoS members.	DevOps (21ECSE310) (0-0-3)	
Multimedia Networks course introduced for enhancement of employability.	Multimedia Networks (21ECSE311) (3-0-0)	
Data Integration & Cloud Services course in collaboration with Informatica towards enhancing collaborative teaching and learning.	Data Integration & Cloud Services (21ECSE331) (0-0-3)	

Department of Electrical & Electronics Engineering

Action report based on analysis report in Pre-BOS meeting for the batch 2021-22

Employers Feedback:
1. The students should be able to analyse and interpret data to reach valid conclusions.
2. The students should be able to understand technical literature and prepare effective reports and design documents.

Teachers Feedback (Pre-BoS MoM):
1. Students should have more exposure to hardware laboratory.
2. Focus on exposure to industries working in power systems and electric vehicle domain.

Students Feedback:
1. Introduce industry specific skills for employability.

Alumni Feedback:
1. Industry problem statements should be considered in Projects.
2. Industry institute collaborations needs to be increased.
3. Create awareness among students on engineer's role to resolve societal issues.

Actions taken:
1. Linear ICs and Control System Lab introduced at 5th semester to increase the skill of the students to have laboratory experience of the concepts learnt in Linear Integrated Circuits and Linear Control Systems theory courses.
2. Institutional Research Project (IRP) introduced at 7th semester to enhance research capability among undergraduate students in Electric Vehicle Domain.
3. AUTOSAR change in syllabus by 25%
4. Industry internship projects and industry internship training are introduced to enable students to work on industry projects.

These changes have been approved during the BOS Meeting of 5th June 2021.

School of Management Studies and Research

Course Design Review

Action Taken Report of the University on the Feedback of Stakeholders

School of Management Studies and Research

Action Taken Report Approved in Board of Studies dated 25/05/2022 and implemented with effect from June, 2022.

1	Observations/ Recommendations based on feedback	POs impacted
Employer Feedback: . Sales Management and Retail management courses have to be modified to bring about relevant changes in tune with the contemporary industry demands. **Teachers Feedback (Pre-BoS MoM):** Retail management has been a great learning for the students of marketing. It is also observed that majority of the students opt for marketing specialization and also placed in this area. Hence, it necessitates for modification and include concepts like Customer buying behaviour, Retail market strategy, Customer relationship management,Market Basket analytics, RFM analysis, Optimizing Direct mail Campaigns, Scan *Pro Model. This will help the students to understand Retail Management better and improve placements further **Alumni Feedback: NA** **Students Feedback:** 25% of the students surveyed for the course feedback reported that there is need for modification in the content of the retail management course.	**PO 2:** An ability to evaluate business scenarios (political/ economical/ social/ technological/ legal/ cultural/ environmental) from an organizational sustainability perspective and entrepreneurial avenues in social context

Actions taken		Course Revised	BoS approved Date
Modifications are incorporated in Retail Management course.		Retail Management	25/05/2022

2	Observations/ Recommendations based on feedback	POs impacted
Employer Feedback: **Teachers Feedback (Pre-BoS MoM):** The course has a great importance and acts as a support to existing course Security Analysis and Portfolio Management. The course instructor observed scope to offer a new course that establishes a relation between expected behaviour and actual behaviour of the FI investors. During his research, course instructor obtained insights of behavioural finance and hence the course is offered. The course will provide insights on rationale behaviour of investors and actual behaviour carried out in the market. This will make students to understand FI investor's behaviour towards investment activities, their preferences, and biases towards decision making. **Alumni Feedback: NA** **Students Feedback: NA**	**PO 2:** An ability to evaluate business scenarios (political/ economical/ social/ technological/ legal/ cultural/ environmental) froman organizational sustainability perspective and entrepreneurial avenues in social context

Actions taken	Course Revised	BoS approved Date
New course Behavioural Finance- IIis introduced.	Behavioural Finance- II	25/05/2022

3	Observations/ Recommendations based on feedback	POs impacted
Employer Feedback: NA **Teachers Feedback (Pre-BoS MoM):** The current trends in human resource management today, demands that HR should treat people as resources and integrate their aspirations with corporate goals. At sometimes, aligning individual goals to corporate goal has been witnessed difficult. Also, new aspects post Covid situation has coined new terms like Hybrid work model, HR in Gig economy,HR Accounting, HRD Audit, Digitalization of HR, and Artificial Intelligence in HR. Hence to deal with these it was essential to introduce the course. **Alumni Feedback: NA** **Students Feedback:** The student feedback revealed that 20% of the students suggested changing or modifying the existing content in tune with the contemporary changes in the real business world.	PO 3: An ability to analyze, synthesize and solve organizational and societal issues

Actions taken	Course Revised	BoS approved Date
Modifications are incorporated in Emerging Trends in HR Practices course.	**Emerging Trends in HR Practices**	25/05/2022

4	Observations/ Recommendations based on feedback	POs impacted
Employer Feedback: The employer feedback broadly suggests introducing courses on analytics in different domains. As analytics is gaining a lot of importance across all the industries, course on analytics will provide edge to the students in the industry. **Teachers Feedback (Pre-BoS MoM):** The analytics in the HR field has been an area most preferred by many HR executives. The companies do look for analytical skills in the field of HR with special emphasis on quick resolving and compilation of data. The course is introduced for HR specialization-oriented students in the second year. This would certainly improve the employment in the HR field. **Alumni Feedback: NA** **Students Feedback: NA**	**PO 2:** An ability to evaluate business scenarios (political/ economical/ social/ technological/ legal/ cultural/ environmental) froman organizational sustainability perspective and entrepreneurial avenues in social context

Actions taken	**Course Revised**	**BoS approved Date**
HR Analytics course is introduced.	HR Analytics	25/05/2022

5	Observations/ Recommendations based on feedback	POs impacted
Employer Feedback: The experts from the industry suggested including data science for the final year students instead of business analytics. This would help the students to understand and gain expertise in the specialized area that is less explored. This would help in improving the employability of the students too. **Teachers Feedback (Pre-BoS MoM):** Data Science is an important course that is offered by the majority of the universities. The innovative and data driven companies are looking out for the manpower that is trained with data science technology. Hence the course is offered as a specialization under Operations stream. It is expected that data trained students would help the companies to leverage data driven informed decisions. The skilled students would also get good placement opportunities. **Alumni Feedback: NA** **Students Feedback: NA**	PO4: An ability to critically analyze system for decision making and orient towards research

Actions taken	**Course Revised**	**BoS approved Date**
Modifications are incorporated in Data Science for Managers course.	Data Science for Managers	25/05/2022

6	Observations/ Recommendations based on feedback	POs impacted
Employer Feedback: NA **Teachers Feedback (Pre-BoS MoM):** The existing syllabus was not accommodative to host intense research methodology. In order to intensify and accommodate quantitative and qualitative methodologies, the restructuring was necessary and hence the courses were bifurcated and offered in two semesters. Basically, in first semester focus was towards awareness of research methodologies. This would help the students in better understanding of research methodologies in the very first semester of MBA **Alumni Feedback: NA** **Students Feedback:** Student feedback suggests relooking at the content of the course as 26% of the students opined that the existing content had minimum relevance to the future.	PO4: An ability to critically analyze system for decision making and orient towards research

Actions taken	Course Revised	BoS approved Date
Modifications are incorporated in Business Research Methods course.	Business Research Methods	25/05/2022

6	Observations/ Recommendations based on feedback	POs impacted
Employer Feedback: **Teachers Feedback (Pre-BoS MoM):** In order to intensify the research, the applications of research concepts were intensified by offering Applied Business Research course in the second semester. The tools and techniques were added to ensure the application of the concepts. Data Visualization, Data Analysis, Multi-criteria Decision Modelling& Bench Marking will be explored by the student that really adds value **Alumni Feedback:** **Students Feedback:**		PO4: An ability to critically analyze system for decision making and orient towards research

Actions taken	Course Revised	BoS approved Date
Modifications are incorporated in Applied Business Research course.	Applied Business Research	25/05/2022

6	Observations/ Recommendations based on feedback	POs impacted
Employer Feedback: **Teachers Feedback (Pre-BoS MoM):** The analytics has been an area of choice and demand to students. The same was absent and was earlier offered only to specialized course under Operations specialization. In order to offer to all, the same has been modified and introduced in the first semester. The students would get an insight of the analytics in various aspects like Retail Analytics, Marketing Analytics, Financial Analytics, Healthcare Analytics, and Supply Chain Analytics. This would also help students in better placements **Alumni Feedback:** **Students Feedback:**	**PO 4:**

Actions taken	Course Revised	BoS approved Date
A new course on Analytics for Business is introduced for the 1ˢᵗ Semester	Analytics for Business	25/05/2022