THIAGARAJAR COLLEGE OF ENGINEERING, MADURAI-15
(A Govt. Aided, Autonomous Institution affiliated to Anna University)
Department of Mechatronics Engineering

Minutes of the Meeting

Date of the Meeting	:	25.11.2022
Name of the Meeting	:	Consolidated Curriculum Review for B.E. Mechatronics based on Feedback from Stake holders
Venue	:	Mechatronics Workshop
Time	:	03.00 pm – 04.30 pm

Attended by:

1. Dr. M. Palaninatharaja, Principal in charge, Professor and Head, MECT, TCE
2. Dr. G. Kumaraguruparan, Associate Professor, MECT, TCE
3. Dr. G. Kanagaraj, Associate Professor, MECT, TCE
4. Mr. S. Julius Fusic, Assistant Professor, MECT, TCE
5. Mr. H. Ramesh, Assistant Professor, MECT, TCE
6. Mr. S. Parthasarathi, Assistant Professor, MECT, TCE
7. Mr. M. A. Ganesh, Assistant Professor, MECT, TCE
8. Mr. B. Praveen Kumar, Assistant Professor, MECT, TCE
9. Mr. S.A.R. Sheik Masthan, Assistant Professor, MECT, TCE
10. Mr. S. Manikandan, Assistant Professor, MECT, TCE
11. Mr. M.M. Devarajan, Assistant Professor, MECT, TCE

Stakeholders : Students, Course handling faculty, Alumni & Employer

Curriculum reviewed : B.E Mechatronics Regulation 2018

Curriculum Proposed : B.E Mechatronics Regulation 2022

25/11

Consolidated feedback, suggestion by the stake holders

Stake holder	Suggestions
BoS Members (Industry Persons, Academic Person from IISc, Alumni)	• Splitting of major project into four theme areas • A Course titled Introduction to Mechatronic Systems has to be introduced exposed for better understanding of Mechatronic product • Artificial Intelligence, Product Development, cyber physical system, Electric vehicle technology and digital manufacturing related course needs to be provided • Professional practice in the final year could help the students to become professionals • Core robotics should contain robot kinematics, dynamics and trajectories in industrial robotics course • Thermal Fluid system must contain Industrial hydraulics and pneumatics – 70 % and Basic thermal engineering and fluid mechanics – 30% • Topics related to power supply selection has to be introduced in any of the electronics course
Alumni	• Desire for more emphasis on AI and Cloud Computing in the curriculum • Request for a more in-depth coverage of Robotics and Core Electronics • Desire for a course on an advanced programming language • Suggestion to include a course on CAD/CAM technology • Interest in courses covering Frequency Drives and HMI • Interest in elective courses on Data Structures, Data Warehousing, and Cloud Computing. • Interest in a course specifically on Artificial Intelligence
Faulty	• Unmanned Aerial Vehicles one credit course can be offered specifically on Drone technology. • Control related lab experiments can be introduced in parallel
Student	Supportive courses that can be added from students' perspective. • Basics of Java • C++, Embedded C, Python • Python, Java, and OOPS Concepts • Java/C# • Open-Source Knowledge Courses • Robotics and Automation • Web Designing • Environment Analysis • AI and Robotics • Automated Related Courses • VLSI Technology • Value Analysis and Value Engineering (VA VE) • Quantum Computing, Generative Design • MySQL • Artificial Intelligence • HTML, CSS
Employer	• Object Oriented programming concepts to be added with separate Laboratory • Analog and Digital subject to be split into two different subjects and labs • To Add Embedded system course in the Core of Mechatronics • Industry supported courses to be introduced for the students

25/11

Action taken based on the consolidated feedback from stake holders:

Based on the consolidated feedback from the stake holders, the following scheduling of courses is proposed for B.E. Mechatronics, regulation 2022 and will be placed in the forthcoming Board of Studies which is planned on 03-Dec 2022.

Sem	Theory / Theory cum Practical / Laboratory Courses								CDIO / Audit Courses / Project
I	22MA110-Calculus for Engineers	22PH120-Physics	22CH130-Chemistry	22EG140-Technical English	22ME160-Engineering Graphics	22EG170-English Laboratory	22PH180-Physics Laboratory	22CH190-Chemistry Laboratory	22ES150-Engineering Exploration
II	22MT210-Matrices and Ordinary Differential Equations	22MT220-Analog Electronics	22MT230-Free Body Mechanics	22MT240-Problem Solving using C	22MT250-Manufacturing Process	22MT260-Mechatronic Workshop	22MT270-Manufacturing Laboratory	22MT280-Introduction to Mechatronic Systems	Audit Course 1
III	22MT310-Partial Differential Equations	22MT320-Digital Electronics	22MT330-Kinematics and Dynamics of Machinery	22MT340-Thermal Fluid Systems	22MT350-Electrical Machines	22MT360-Thermal Engineering Laboratory	22MT370-Electrical Machines Laboratory	22MT380-Electronic Circuits and Digital Laboratory	22ES390-Design Thinking
IV	22MT410-Probability and Statistics	22MT420-Microcontroller based system design	22MT430-Power Electronics and Drives	22MT440-Sensors and Measurements	22MT450-Digital Signal Processing	22MT460-Project Management	22MT470-Microcontroller Laboratory	22MT480-Sensors and Measurements Laboratory	Audit Course 2
V	22MT510-Control Systems	22MT520-Design of Machine Elements	22MT530-Industrial Automation	22MT540-CNC Technology	22MTPx0-Program Elective-I	22yyGx0-Inter disciplinary Elective	22MT550-CAD / CAM Laboratory	22MT560-Industrial Automation Laboratory	22MT570-Sensors and Instrumentation Project
VI	22MT610-Accounting and Finance	22MT620-Industrial Robotics	22MTPx0-Program Elective II	22MTPx0-Program Elective III	22MT630-Professional Communication	22yyFx0-Basic Science Elective	22MT640-Control and Dynamics Laboratory	22MT650-Robotics Laboratory	22MT660-Mechanical Systems Project
VII	22MT710-Mechatronics System Design	22MTPx0-Program Elective IV	22MTPx0-Program Elective V	22MTPx0-Program Elective VI	22MTPx0-Program Elective VII	22MT720-System Integration Laboratory	---	---	22MT730-Robotics and Automation Project
VIII	22MTPx0-Program Elective VIII	22MTPx0-Program Elective IX	---	---	---	---	---	---	22MT810-System Integration Project

25/11

In addition to the above scheduling of courses, the following Elective Courses are proposed for B.E. Mechatronics, regulation 2022 and will be placed in the subsequent Board of Studies Meeting. The electives are grouped under four theme areas.

Sensors & Instrumentation	Mechanical Systems	Robotics & Automation	System Integration
Embedded Systems and Real-time Operating Systems	Additive Manufacturing	Virtual and Augmented Reality	Data Analytics for Mechatronics Systems
Internet of Things	Smart HVAC	Human Robot Interaction	Industry 4.0
Battery Technology and Management System	Design and Analysis of Experiments	Autonomous Mobile Robots	Introduction to Cyber Physical Systems
Machine Vision System	Electronics Systems Packaging	Under water Autonomous Vehicle	Machine Learning and Applications
Edge Computing	Semiconductor Manufacturing	Robotic Process Automation	Cyber Security
Automotive Electronics	Reliability of Mechatronic Systems	Air Mobility Systems	Fluid Power Automation
Wireless Sensor Network	Sustainable Engineering Practices	Bio Mechatronics	Digital Twin Technology
Biomimicry Engineering	Bio Inspired Algorithms	Intelligent Control Systems	Integrated Product Development
Electric Vehicle Technology	Block Chain in Logistics	Medical Robotics	Hybrid Vehicle Technology
LASER Technology	Introduction to Bio-Mechatronics	Robot Programming	Industrial Communication Networks
Sensor Fusion and Integration	Micro Electro Mechanical Systems	Cognitive Robotics	Artificial Intelligence
Design of Actuators	Intelligent Transportation System	Soft Robotics	Object Oriented Programming
Optical Sensors and Instrumentation	Predictive Maintenance Analytics	Biomimetics, Bio Cybernetics	Motion Control Drives

BoS Coordinator **Program Coordinator** **HOD MECT** 25/1/22

Note:

To be circulated among Faculty members.

The faculty members are advised to design the curriculum, syllabus based on the comments from the stakeholders