

MINUTES OF THE MEETING OF FIFTH BOARD OF STUDIES MEETING HELD ON 17.09.2022 AT 10.00 AM IN HYBRID MODE TOWARDS CONSIDERING THE PROPOSED R2020 UG PROGRAMME, B.E. – MECH CURRICULUM & SYLLABI (VII SEMESTER & VIII SEMESTER), R2021 UG PROGRAMME, B.E. – MECH CURRICULUM & SYLLABI (IV SEMESTER), & B.E. – MECH CURRICULUM (V SEMESTER, VI SEMESTER, VII SEMESTER & VIII SEMESTER)

Platform: MS Teams

Meeting Link: https://teams.microsoft.com/l/meetup-join/19%3ameeting_YzFjYjQ3MjMtNWQ1ZS00ZWJjLWEzMWItMWMvNiIxNDA1Mzhi%40thread.v2/0?context=%7b%22Tid%22%3a%222666d919-f1fc-4027-b9c5-212d4e95e68a%22%2c%22Oid%22%3a%229e69172c-74cd-4bfe-a6a8-b68a6d86a288%22%7d

Dr.S.S.Saravanakumar, HOD (Department of Mechanical Engineering) welcomed all the members of the Board of studies and Faculty members of Department of Mechanical Engineering to the 5th BOS meeting. The following members were present.

S.No	Name of the Expert	Designation	Capacity
1.	Dr. S.Supriya, M.E.(Engg. Design),MISTE,Ph.D.	Professor (CAS) & Head of the Department, Mechanical Engineering Department, Government College of Engineering, Tirunelveli	Anna University Nominee
2.	Dr. S.C. Vettivel, Ph.D.,	Associate Professor/Mechanical Engineering, Chandigarh College of Engineering and Technology, Chandigarh	Academic Council Nominee
3.	Dr. V. Anandakrishnan, Ph.D.,	Associate Professor/Production Engineering National Institute of Technology, Tiruchirappalli – 620015.	Academic Council Nominee
4.	Er. K. Rajarathinam B.E.,	Proprietor Essar Engineers, Coimbatore	Industrialist Nominee
5.	Er.K. Vijayabharathi B.E.,	Technical lead Infosys, Chennai	Alumni Nominee

Internal Members of BoS – Mechanical Engineering Department

S.No	Name of the Faculty	Designation
1.	Dr. S. S. Saravanakumar	Head / Mech Chairman of BoS
2.	Dr. S. Senthil	Professor/ Principal In-charge
3.	Dr. P. Narayanasamy	Associate Professor / MECH
4.	Dr. S. Thanga Kasi Rajan	Assistant Professor / MECH Associate Dean Academics, UG Programme Coordinator
5.	Dr. B. Prabhu	Assistant Professor / MECH
6.	Dr. M. Prithiviraj	Assistant Professor / MECH
7.	Dr. B. Balavairavan	Assistant Professor / MECH BoS coordinator
8.	Mr. D. Palani Kumar	Assistant Professor / MECH
9.	Mr. N. R. Madhan	Assistant Professor / MECH
10.	Mr. R. Sakthivel Murugan	Assistant Professor / MECH PG Programme Coordinator
11.	Mr. B. K. Parrthipan	Assistant Professor / MECH
12.	Mr. S. Devaraj	Assistant Professor / MECH
13.	Mr. T. Suresh	Assistant Professor / MECH
14.	Mr. A.Sankara Narayana Murthy	Assistant Professor / MECH
15.	Mr. K. Muruganathan	Assistant Professor / MECH
16.	Mr.P.SenthamaraiKannan	Assistant Professor / MECH
17.	Mr. S. Muthu Natarajan	Assistant Professor / MECH

MINUTS OF MEETING

THE MEETING IS CALLED FOR CONSIDERING THE R2020 UG PROGRAMME, B.E. – MECH CURRICULUM & SYLLABI (VII SEMESTER & VIII SEMESTER), R2021 UG PROGRAMME, B.E. – MECH CURRICULUM & SYLLABI (IV SEMESTER) & R2021 UG PROGRAMME, B.E. – MECH PROPOSED CURRICULUM (V SEMESTER, VI SEMESTER, VII SEMESTER & VIII SEMESTER)

DISCUSSIONS:

BOS 005.01

HOD/Mech recorded his appreciation to the external experts for their suggestions and valuable inputs in framing the curriculum and syllabi. He expressed his special thanks to Dr. A. Valan Arasu, Anna University Nominee for his unanimous support in framing the Mechanical Engineering curriculum and syllabi of KCET. His tenure was completed now. He also welcomed the new Anna university nominee Dr. S. Supriya, Prof & Head, Government college of Engineering, Tirunelveli. He welcomed all the BoS members for the 5th Board of Studies meeting

BOS 005.02

Hod/Mech introduced the new BoS members Dr,S. Supriya (Anna University Nominee) and Er. K. Vijaya Bharathi (Representing Alumni) to the 5th BoS members.

BOS 005.03

Dr. S. Thanga Kasi Rajan presented the highlights of the proposed new Regulation R2021:

- The highlights of the new proposed Regulation KCET R2021 is presented to the BoS members.
- The student can earn credits through value added courses / Internship under Employability Enhancement Course (EM) category however the total credits earned are marked as Over and Above credits.
- Similar to the new amendment of AU R 2017, In R2021, the students are given to carry forward their secured internal mark for one arrear attempt only. From second arrear attempt onwards, their internal marks are nullified and the student should get pass by securing 50 % from the end semester examination.
- The internal marks of the students will be calculated as per the continuous assessment pattern policy framed by the institute.
- Relative grading system will be followed in regulation R2021.
- Discussed the introduction of dual degree “Minor” degree and “Honours” degree.
- Informed that professional electives are offered as verticals

- Discussed about the First year common courses, second year fundamental courses, third year comprise of professional elective and open electives and final year consist of open electives and project work
- The student can do online course optionally. On successful completion, he/she can skip one professional elective courses
- Informed that two week industry internship is mandatory for students.

BOS 005.04

Dr. S. Thanga Kasi Rajan gave a brief presentation for the approval of 4th BOS minutes held on March 19, 2022 and action taken report

- Dr.S.Thanga Kasi Rajan gave a brief presentation about the action taken on the 4th BoS meeting.
- **As per the BoS members suggestions, Modifications are proposed in Regulation 2021.**

Total Credits: 165 to 170, Professional Electives are offered as Verticals.

Honours and Minor degree are introduced in the Regulation R2021.

Mandatory Summer Internship is introduced. Relative grading System is followed.

- As per the Expert Suggestion, Courses in Professional Elective I & II are grouped into Design, Manufacturing and Thermal stream.
- In Metrology and Measurement Techniques subject, modified the experiment name as Measurement of surface roughness using Surface roughness tester instead of that Measurement of surface roughness using talysurf instrument. In Computer Integrated Manufacturing subject Robots and automation topic included in Unit V. For open elective the subject renamed as Thermal Engineering instead of that Refrigeration and Power generation in Mechanical Engineering. For Non-Destructive Testing subject the action verb for course outcome was modified. Theory of Bonded joints, Crank shaft and connecting rod topics are not removed in Design of Machine Elements. In Design of Transmission Systems subject, the unit V title changed as Design of Electrical motors, instead of that Selection of Electrical Motors. In Dynamics of Machines subject, types and characteristics of governors topic included. In Computer Aided Design subject the introduction to cloud based CAD topic modified. In Refrigeration and Air Conditioning subject the action verb for course outcome 2&4 modified.

PROFESSIONAL ELECTIVE

SEMESTER VII, ELECTIVE III

SL.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1	ME 1731	New Product Development	PE	3	3	0	0	3
2	ME1732	Concepts of Engineering Design	PE	3	3	0	0	3
3	ME1733	Solar Energy Technology	PE	3	3	0	0	3
4	ME1734	Mechatronics and IoT	PE	3	3	0	0	3
5	ME1735	Waste management and energy recovery	PE	3	3	0	0	3

SEMESTER VII, ELECTIVE IV

SL.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1	ME1736	Supply Chain Management	PE	3	3	0	0	3
2	ME1737	Composite Materials	PE	3	3	0	0	3
3	ME1738	Power Plant Engineering	PE	3	3	0	0	3
4	ME1739	Process Planning and Cost Estimation	PE	3	3	0	0	3
5	ME1740	Precision Manufacturing	PE	3	3	0	0	3

SEMESTER VII, ELECTIVE V

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1	ME1741	Entrepreneurship Development	PE	3	3	0	0	3
2	ME1742	Lean Manufacturing	PE	3	3	0	0	3
3	ME1743	Maintenance Engineering	PE	3	3	0	0	3
4	ME1744	Introduction to Industry 4.0	PE	3	3	0	0	3
5	GE1773	Total Quality Management	PE	3	3	0	0	3

- All Other corrections suggested by the members are carried out in the curriculum and syllabus of R2020.
- All the suggestions are meticulously worked out
- The members of the BoS resolved and approved the same.

BOS 005.05

Dr. S. Thanga Kasi Rajan presented the proposed R2020 UG IV year Curriculum & Syllabi of B.E – Mechanical Engineering programme.

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	ME 1701	Principles of Industrial Engineering	PC	3	3	0	0	3
2	ME 1702	Robotics	PC	3	3	0	0	3
3		Open Elective – II	OE	3	3	0	0	3
4		Professional Elective – III	PE	3	3	0	0	3
5		Professional Elective – IV	PE	3	3	0	0	3
6		Professional Elective – V	PE	3	3	0	0	3
7		Online Course – 2**	OL	0	0	0	0	3*
PRACTICAL								
8	ME 1721	Automation & IOT Laboratory	PC	4	0	0	4	2
9	ME 1711	Technical Seminar	EEC	2	0	0	2	1
TOTAL				24	18	0	6	24*

****The students shall complete the online course in this semester and credits would be added in consolidated mark sheet.**

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
PRACTICAL								
1	ME1821	Project Work	EEC	20	0	0	20	10
2		Online course – 2**						
TOTAL				20	0	0	20	10

****The students shall complete the online course in this semester and credits would be added in consolidated mark sheet.**

Discussion and approval of

- i. Common courses in Final year if any (R2020)
- ii. Open Elective papers (to be offered to other departments) R2020

Common Courses offered

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1	ME1737	Composite Materials	PE	3	3	0	0	3
2	ME1743	Maintenance Engineering	PE	3	3	0	0	3
3	GE1773	Total Quality Management	PE	3	3	0	0	3

Open Elective – II

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1	OME761	3-D Printing and Design	OE	3	3	0	0	3
2	OME762	Selection of Materials	OE	3	3	0	0	3
3	OME763	Testing of Materials	OE	3	3	0	0	3
4	OME764	Industrial Safety	OE	3	3	0	0	3

Dr.S.Thanga Kasi Rajan/ Domain Expert of Manufacturing Stream presented the following subjects:

- Lean Manufacturing
- Composite Materials
- Process Planning and Cost Estimation
- Precision Manufacturing
- Maintenance Engineering

Suggestions given by BoS expert members for Manufacturing stream subjects:

- Dr.V.Anandkrishnan suggested to give the equal weightage for all units in terms of hour allocation and also CO4 to be modified for the subject Lean Manufacturing.

- Dr.V.Anandakrishnan insisted to change the Unit IV title as Testing of Composite Materials instead of that Testing of Polymer Composite Materials for the subject Composite Materials.
- Dr. S.C. Vettivel insisted to add the microwave assisted topic in Unit II for the subject Composite Materials.
- Dr.A.Anandakrishnan suggested to remove the word selection from Unit I for the subject Process planning and Cost estimation.
- Dr. S.C. Vettivel insisted to change the Unit I title as Process planning methods instead of that Process planning methods and its activities for the subject Process planning and Cost estimation.
- Er.K.Vijayabharathi insisted to add the process modelling in lab exercises.

Dr.B.Balavairavan / Domain Expert of Design Stream presented the following subjects:

- Automation and IoT lab
- Robotics
- Concepts of Engineering design
- Mechatronics and IoT
- Product design and value Engineering

Suggestions given by BoS expert members for Design stream subjects:

- Dr.A.Anandakrishnan suggested to rearrange the lab exercises and also one of the lab exercise name to be modified as Energy meter monitoring instead of that Energy meter monitoring for theft detection for the subject Automation and IoT lab.
- Er.K.Vijayabharathi insisted to include the SCADA study exercise in Automation and IoT lab.
- Dr.A.Anandakrishnan suggested that Machine vision for robots topic to be included in Unit IV for the subject Robotics.
- Dr.A.Anandakrishnan insisted to follow the new edition textbook for the subject Concepts of Engineering Design.
- Dr.A.Anandakrishnan insisted to modify the Unit V title as Development of IoT Solutions instead of that Introduction to IoT and Development with Arduino, Raspberry PI for the subject Mechatronics and IoT.
- Dr.A.Anandakrishnan suggested to reframe the contents of Unit V for the subject Mechatronics and IoT.

Dr.B.Prabhu / Domain Expert of Thermal Stream presented the following subjects:

- Solar energy technology
- Waste Management and Energy Recovery
- Powerplant Engineering
- Technical Seminar

Suggestions given by BoS expert members for Thermal stream subjects:

- Er.K.Vijayabharathi insisted to include the ISO standard topics in Waste Management and Energy Recovery subject.
- Er.K.Vijayabharathi suggested that, CO2 to be modified for the subject Power Plant Engineering.
- Dr.A.Anandakrishnan suggested that, in CO1 the word interpret to be modified as Demonstrate for the subject Technical Seminar.

Dr.S.Thanga Kasi Rajan/ Domain Expert of Manufacturing Stream presented the following Industrial Engineering subjects:

- Entrepreneurship Development
- Total Quality Management
- Supply Chain Management
- Testing of Materials

Mr.R.Sakthivel Murugan/AP/Mech presented the following Industrial Engineering subjects

- Introduction to Industry 4.0
- 3D Printing and Design

Mr.D.Palanikumar/AP/Mech presented the following Industrial Engineering subject

- Industrial Safety

Suggestions given by BoS expert members for Industrial Engineering subjects:

- Dr.A.Anandakrishnan and Er.Vijayabharathi suggested that, the topic startup to be included in Unit V for the subject Entrepreneurship Development.
- All BoS experts are suggested that, objectives should be written in bulletin format for the subjects Entrepreneurship Development.
- Dr.A.Anandakrishnan suggested to modify the topic as Performance measures for various organizations instead of that performance measures Washington accord and Blooms taxonomy for the subject Total Quality Management.
- Er.K.Vijayabharathi insisted to modify the word as authorities instead of that agencies for the subject Total Quality Management.
- Er.K.Vijayabharathi suggested to modify the topics as Supply chain models and Stakeholder Management in Unit V instead of that Customer Relationship Management for the subject Supply Chain Management.
- Dr.A.Anandakrishnan suggested to modify the Unit V title as Case Studies instead of that Advances in Robotics in the Era of Industry 4.0 for the subject Introduction to Industry 4.0
- Dr.A.Anandakrishnan insisted that, CO4 and Objective 3 to be modified for the subject 3D Printing and Design.
- Dr.A.Anandakrishnan suggested to give the equal weightage for all units in terms of hour allocation and also to split the Unit II as Two separate units for the subject 3D Printing and Design.
- Dr.A.Anandakrishnan insisted that, Unit V contents to be rearranged for the subject 3D Printing and Design.

BOS 005.06

Dr. S. Thanga Kasi Rajan explained the Introduction in about the R2021 Honours and Minor degree in R2021

Honours Degree	Minor Degree
The student should select 6 courses Offered in Parent department verticals and earn 18 credits	The student should select 6 courses Offered from other department verticals offered for minor degree or institute level courses offered as minor degree and earn 18 credits

Eligibility: upto 4 th Semester, the CGPA >7.5 with out any backlog	Eligibility: upto 4 th Semester, the CGPA >7.5 with out any backlog
Offered from 5 th semester onwards	Offered from 5 th semester onwards
The student may or may not select the course from same verticals	The student should undergo 6 courses from same verticals offered as minor either from institute level common minor verticals or other department minor verticals.

BOS 005.07

Dr. S. Thanga Kasi Rajan presented the R2021 UG II year (IV Semester Curriculum & Syllabi), III year (V Semester & VI Semester Curriculum) & IV year (VII Semester & VIII Semester Curriculum) of B.E – Mechanical Engineering programme.

SEMESTER IV

Sl. No	AU R2021						Proposed KCET R2021						
	Course Name	L	T	P	C	hr	Course Name	Stream	L	T	P	C	Hr
1	Theory of Machines	3	0	0	3	3	Theory of Machines	Design	3	1	0	4	4
2	Thermal Engineering	4	0	0	4	4	Thermal Engineering	Thermal	3	0	0	3	3
3	Hydraulics and Pneumatics	3	0	0	3	3	Strength of Materials	Design	3	0	0	3	3
4	Manufacturing Technology	3	0	0	3	3	Manufacturing Technology – II	Mfg.Engg	3	0	0	3	3
5	Strength of Materials	3	0	0	3	3	Engineering Materials and Metallurgy	Mfg.Engg	3	0	0	3	3
6	Environmental Sciences and Sustainability	2	0	0	2	2	Probability Statistics and Numerical methods	-	3	1	0	4	4
7	NCC Credit Course Level 2	3	0	0	3	3	Scientific Thoughts in Tamil *	-	1	0	0	0	1*
							Aptitude	-	1	0	0	1	1
Practical													

1	Strength of Materials and Fluid Machinery Laboratory	0	0	4	2	4	Manufacturing Technology Laboratory	Mfg. Engg	0	0	3	1	3
2	Thermal Engineering Laboratory	0	0	4	2	4	Fluid Mechanics and Strength of Materials Laboratory	Thermal	0	0	3	1	3
3							Theory of Machines Laboratory	Design	0	0	3	1	3
Total		18	0	8	22	26			20	1	9	24	31

*Scientific Thoughts in Tamil included 4th semester only for students those who admitted in 2021.

SEMESTER V

Sl. No.	AU R2021						Proposed KCET R2021						
	Course Name	L	T	P	C	hr	Course Name	Stream	L	T	P	C	Hr
1	Design of Machine Elements	4	0	0	4	4	Design of Machine Elements	Design	3	1	0	4	4
2	Metrology and Measurement	3	0	0	3	3	Metrology and Measurement	Mfg. Engg	3	0	0	3	3
3	Professional Elective I	-	-	-	3	-	Professional Elective I	-	3	0	0	3	3
4	Professional Elective II	-	-	-	3	-	Professional Elective II	-	3	0	0	3	3
5	Professional Elective III	-	-	-	3	-	Professional Elective III	-	3	0	0	3	3
6	Mandatory Course-I	3	0	0	0	3	Mandatory Course-II*	-	3	0	0	0	3*
Practical													
1	Summer Internship*	0	0	0	1	0	Summer Internship	-	0	0	0	1	-
2	Metrology and Dynamics Laboratory	0	0	4	2	4	Metrology Laboratory	Mfg. Engg	0	0	3	1	3
							IC Engine and Steam Laboratory	Thermal	0	0	3	1	3
							CAD Laboratory	Design	0	0	3	1	3
Total					19				18	1	9	20	28*

SEMESTER VI

Sl. No.	AU R2021						Proposed KCET R2021						
	Course Name	L	T	P	C	hr	Course Name	Stream	L	T	P	C	hr
1	Heat and Mass Transfer	3	1	0	4	4	Heat and Mass Transfer	Thermal	3	1	0	4	4
2	Professional Elective IV				3		Professional Elective IV	-	3	0	0	3	3
3	Professional Elective V				3		Professional Elective V	-	3	0	0	3	3
4	Professional Elective VI				3		Professional Elective VI	-	3	0	0	3	3
5	Professional Elective VII				3		Professional Elective VII	-	3	0	0	3	3
6	Open Elective – I*	3	0	0	3	3	Open Elective -1	-	3	0	0	3	3
7	Mandatory Course-II	3	0	0	0	3							
	NCC Credit Course Level 3	3	0	0	3	3							
Practical													
1	CAD/CAM Laboratory	0	0	4	2	4	3D Printing and CAD Laboratory	Design	0	0	3	1	3
2	Heat Transfer Laboratory	0	0	4	2	4	Heat Transfer Laboratory	Thermal	0	0	3	1	3
							Fluid power Laboratory	Mfg. Engg	0	0	3	1	3
							Advanced Reading and writing		0	0	2	1	2
	Total				23		Total		18	1	11	23	30

SEMESTER VII

Sl. No.	AU R2021						Proposed KCET R2021					
	Course Name	L	T	P	C	hr	Course Name	L	T	P	C	Hr
1	Mechatronics and IoT	3	0	0	3	3	Mechatronics and IoT	3	0	0	3	3
2	Computer Integrated Manufacturing	3	0	0	3	3	Computer Integrated Manufacturing	3	0	0	3	3
3	Human Values and Ethics	2	0	0	2	2	Management Studies *	3	0	0	3	3
4	Industrial Management	3	0	0	3	3	Human values and professional ethics	2	0	0	2	2
5	Open Elective – II**	3	0	0	3	3	Open Elective 2	3	0	0	3	3
6	Open Elective – III***	3	0	0	3	3	Open Elective – 3	3	0	0	3	3
7	Open Elective – IV***	3	0	0	3	3	Open Elective - 4	3	0	0	3	3
Practical												
1	Mechatronics and IoT Laboratory	0	0	4	2	4	Summer internship/Mini project	0	0	0	1	3*
2	Summer Internship#	0	0	0	1	0	Mechatronics and IoT Laboratory	0	0	4	2	4
	Total	20	0	4	23	24		20	0	4	23	24

*Management studies course common paper for all department offered by Institution. The students can do mini project instead of summer internship and special permission must be obtained.

SEMESTER VIII

Sl. No.	AU R2021						Proposed KCET R2021					
	Course Name	L	T	P	C	hr	Course Name	L	T	P	C	Hr
1	Project work / Internship	0	0	20	10	20	Project work/ Internship	0	0	20	10	20

Dr. S. Thanga Kasi Rajan explained about the Vertical of R2021

Sl. No.	AU R2021	PROPOSED KCET R2021
	Verticals name given	Verticals name proposed
1	Modern mobility systems	Modern mobility with green energy
2	Product and process development	Product and process development
3	Robotics and automation	Robotics and automation
4	Digital and green manufacturing	Digital and green manufacturing
5	Process equipment and piping design	Materials and manufacturing
6	Clean and green energy technologies	Quality control and supply chain management
7	Computational Engineering	Computer applications in mechanical Engg
8	Logistics and supply chain management	Diversified courses -1
9	Diversified courses group 1	
10	Diversified courses group 2	
11	Diversified courses group 3	

Vertical 1		
Sl. No.	AU R2021	Proposed KCET R2021
	MODERN MOBILITY SYSTEMS	MODERN MOBILITY WITH GREEN ENERGY
1	Automotive Materials, Components, Design & Testing	Automotive materials, components, Design and testing
2	Conventional and Futuristic Vehicle Technology	Conventional and Electric vehicles
3	Renewable Powered Off Highway Vehicles and Emission Control Technology	Renewable Energy Technologies
4	Vehicle Health Monitoring, Maintenance and Safety	Vehicle Health Monitoring, Maintenance and Safety
5	CAE and CFD Approach in Future Mobility	Energy Conservation in Industries

6	Hybrid and Electric Technology	Energy storage Devices
7	Thermal Management of Batteries and Fuel Cells	Waste management and conversion technologies

Vertical 2 (Minor)		
Sl. No.	AU R2021	Proposed KCET R2021
	PRODUCT AND PROCESS DEVELOPMENT	PRODUCT AND PROCESS DEVELOPMENT
1	Value Engineering	Value Engineering
2	Additive Manufacturing	Process Planning
3	CAD/CAM	Computer Aided Design
4	Design For X	Design For X
5	Ergonomics in Design	Ergonomics in Workplace Analysis
6	New Product Development	New Product Development
7	Product Life Cycle Management	Product Life Cycle Management

Vertical 3		
Sl. No.	AU R2021	Proposed KCET R2021
	ROBOTICS AND AUTOMATION	ROBOTICS AND AUTOMATION
1	Sensors and Instrumentation	Design of Fluid Power Circuits
2	Electrical Drives and Actuators	Mechanical Drives and Actuators
3	Embedded Systems and Programming	Mechanics and control of Robotic manipulators
4	Robotics	Industrial Automation and control
5	Smart Mobility and Intelligent Vehicle	Applied Robotics and operating systems
6	Haptics and Immersive Technologies	Computer Aided Inspection and testing
7	Drone Technologies	Robotics in Smart Manufacturing

Vertical 3* (Common vertical for MTR and Mech)		
Sl. No.	Proposed KCET R2021	Proposed KCET R2021
	ROBOTICS	AUTOMATION
1	Robotics in Smart Manufacturing	Computer Aided Inspection and Testing
2	Welding Robotics	Design of Fluid power circuits for automation.
3	Micro Robotics	Digital Twin and Industry 5.0
4	Agricultural and medical Robotics	Virtual Instrumentation
5	Collaborative Robotics	Industrial Automation and Control
6	Robot operating Systems	Total Integrated Automation
7	Drone Technologies	Industry 4.0

Vertical 4		
Sl. No.	AU R2021	Proposed KCET R2021
	DIGITAL AND GREEN MANUFACTURING	DIGITAL AND GREEN MANUFACTURING
1	Digital Manufacturing and IoT	Digital Manufacturing and IoT
2	Lean Manufacturing	Lean Manufacturing
3	Modern Robotics	CNC Machine tool and Programming
4	Green Manufacturing Design and Practices	Green Manufacturing Design and Practices
5	Environment Sustainability and Impact Assessment	Sustainable Manufacturing and Technologies
6	Energy Saving Machinery and Components	Rapid Prototyping and tooling
7	Green Supply Chain Management	Micro Manufacturing

Vertical 5 (Minor)		
Sl. No.	AU R2021	Proposed KCET R2021
	PROCESS EQUIPMENT AND PIPING DESIGN	MATERIALS AND MANUFACTURING
1	Design of Pressure Vessels	Advanced Manufacturing Processes
2	Failure Analysis and NDT Technique	Processing of Composite Materials
3	Material Handling and solid processing Equipment	Nondestructive Testing and Evaluation
4	Rotating Machinery Design	Selection of Materials
5	Thermal and Fired Equipment design	Materials Testing and characterization
6	Industrial Layout Design and Safety	Materials Management
7	Design Codes and Standards	Nanotechnology for Mechanical Engineers

Vertical 6 (Minor)		
Sl. No.	AU R2021	Proposed KCET R2021
	LOGISTICS AND SUPPLY CHAIN MANAGEMENT	QUALITY CONTROL AND SUPPLY CHAIN MANAGEMENT
1	Automation in Manufacturing	Statistical Quality Control
2	Warehousing Automation	Warehousing Automation
3	Material Handling Equipment, Repair and Maintenance	Six Sigma
4	Robotics	Reliability Engineering
5	Container Logistics	Precision Technology
6	Logistics in Manufacturing, Supply Chain and Distribution	Logistics in Manufacturing, Supply Chain and Distribution
7	Data Science	Innovation by Design

Vertical 7		
Sl. No.	AU R2021	Proposed KCET R2021
	COMPUTATIONAL ENGINEERING	COMPUTATIONAL ENGINEERING
1	Computational Solid Mechanic	Artificial Intelligence for manufacturing
2	Computational Fluid Dynamics and Heat transfer	Computational Solid Mechanics
3	Theory on Computation and Visualization	Theory on Computation and Visualization
4	Computational Bio-Mechanics	Computer Aided Engineering
5	Advanced Statistics and Data Analytic	Advanced Statistics and Data Analytics
6	CAD and CAE	IoT and Industry 4.0
7	Machine Learning for Intelligent Systems	Machine Learning for Intelligent Systems

Vertical 8 (Diversified courses -1)	
Sl. No.	Proposed KCET R2021
	Diversified
1	Automobile Engineering
2	Powerplant Engineering
3	Non-traditional Machining Processes
4	Design of Transmission System
5	Refrigeration and Air Conditioning
6	Maintenance Engineering
7	Welding Technology
8	Finite Element Analysis

Finally, Dr.A.Anandkrishnan suggested to frame list of subjects, then we can fix the title for the verticals. Special Appreciation to all the faculty members for their good initiatives.

OPEN ELECTIVE I AND II (EMERGING TECHNOLOGIES)
offered for our Mechanical Students

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	OCS351	Artificial Intelligence and Machine Learning Fundamentals	OEC	2	0	2	4	3
2	OCS352	IoT Concepts and Applications	OEC	2	0	2	4	3
3	OCS353	Data Science Fundamentals	OEC	2	0	2	4	3
4	OCS354	Augmented and Virtual Reality	OEC	2	0	2	4	3

OPEN ELECTIVES – III&IV

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.		New Product Development	OEC	3	0	0	3	3
2.		Thermal Engineering	OEC	3	0	0	3	3
3.		World Class Manufacturing	OEC	3	0	0	3	3

OPEN ELECTIVES – III & IV

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.		3-D Printing and Design	OEC	3	0	0	3	3
2.		Selection of Materials	OEC	3	0	0	3	3
3.		Testing of Materials	OEC	3	0	0	3	3
4.		Additive Manufacturing	OEC	3	0	0	3	3

BOS 005.09

Dr. B.Balavairavan informed that, Mr.K.Vijayabharathi, Technical lead, Infosys one of the Program Assessment Committee member (external stake holder) representing the KCET Alumni, suggested to include IoT, Industry 4.0, Current technologies used in industry, Artificial Intelligence and emerging technologies. Dr. B.Balavairavan resolved to implement the same in R2021 curriculum.

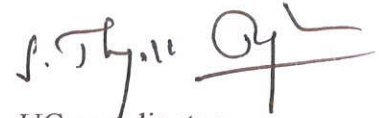
BOS 005.010

The meeting ended with the Vote of Thanks by Dr. P.Narayanasamy, Associate Professor, Department of Mechanical Engineering, Kamaraj College of Engineering and Technology, Virudhunagar.



BoS coordinator

(Dr.B.Balavairavan)



UG coordinator

(Dr.S.Thanga Kasi Rajan)



(Dr.S.S.Saravanakumar)

BoS Chairman

HOD/MECH