



VIMAL JYOTHI
ENGINEERING COLLEGE

*Affiliated to APJ Abdul Kalam Technological University &
Kannur University | Approved by AKTE
Under the Archdiocese of Thalassery*

DEPARTMENT OF MECHANICAL ENGINEERING

**IMPROVEMENTS IN CURRICULUM
FOR MAPPING POs & PSOs
(CURRICULUM GAPS AND
ACTIONS)**

DEPARTMENT OF MECHANICAL ENGINEERING

CURRICULAR GAP ANALYSIS (KTU 2019 SCHEME CURRICULUM)

The curricular GAP Analysis for KTU 2019 Scheme was conducted based on Content Level Gap Analysis & Structural Gap Analysis

CONTENT LEVEL GAP ANALYSIS

The university KTU 2019 scheme provides course outcomes and PO mapping for all courses. A committee consists of subject experts are tasked with finding out content level GAPs with respect to various courses. The committee identifies the GAPs for the syllabus (2019 Scheme) and relevant POs. They also suggests the proposed action plans to bridge these gaps and submit to PAQIC (Program Assessment & Quality Improvement Committee for further approval

STRUCTURAL GAP ANALYSIS

The Structural Gap Analysis was conducted based on mapping of various courses with respect to POs & PSOs. A Total of 42 Theory Courses, 14 Lab Courses, 05 Project/Seminar/Viva Courses were analyzed and details where attached as per table. It is observed that a significant mapping level of 50 % of the all courses with respect to POs and PSOs. However following PO/PSO less than 60% of mapping with respect to total no of courses.

	PO 1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
No of courses with high correlation	47	30	13	12	11	3	8	5	8	9	2	3	6	12
No of courses with medium correlation	9	14	25	15	16	12	9	8	11	17	8	28	5	11
No of courses with low correlation	1	6	2	6	5	9	4	7	5	3	3	9	1	2
No of courses with no mapping	4	9	19	26	27	33	37	37	34	30	44	20	44	31
Average contribution in the attainment of POs and PSOs (out of 3)	2.7	2.3	2.1	2.0	2.1	1.6	1.9	1.7	2.0	2.1	1.7	1.7	2.3	2.3

Average contribution in the attainment of POs and PSOs in terms of Percentage	88.8	77.1	71.0	68.0	69.1	51.9	64.7	56.5	66.6	68.4	57.1	56.7	75.6	77.7
Level of contribution in the attainment POs and PSOs	H	M	M	M	M	L	M	L	M	M	L	L	M	M

Note: Contribution of 80% or more is taken as HIGH LEVEL and 60% to 80% contribution is taken as MODERATE LEVEL while less than 50-60% of attainment level is construed as LOW LEVEL. The same is approved in PAQIC & DAB Meeting

S.No	Contribution Level	POs	PSOs	Remarks
1	High Level	1		No specific action is required. Curriculum is providing the necessary content for the attainment of the POs
2	Moderate Level	2,3,4,5,7,9,10	1,2	Suitable measures have been taken by way of conducting co-curricular and extracurricular activities in the form of guest lectures, workshops and others to improve the attainments of POs and PSOs.
3	Low Level	6,8,11,12		Suitable measures have been taken by way of conducting co-curricular and extracurricular activities in the form of guest lectures, workshops and others to improve the attainments of POs and PSOs.

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Mechanical Engineering
3.1.3A COURSE ATTRIBUTION MATRIX (KTU 2019 SCHEME)
Academic Year 2022-23

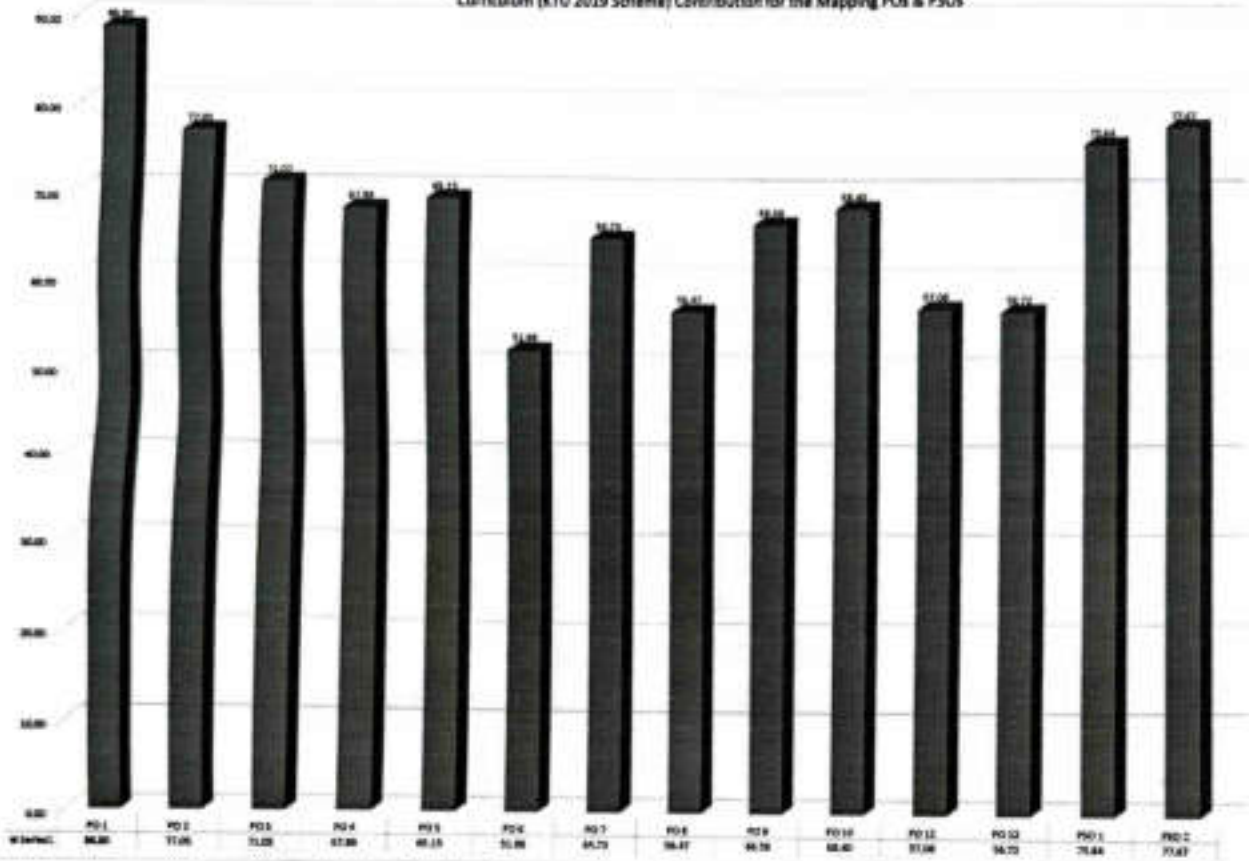
SL No	Course	NAME COURSE	TYPE OF COURSE	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
1	EST102	PROGRAMMING IN C	HYBRID	2.7	2.0	1.7	1.7	2.7	1.0	-	-	1.7	1.1	1.7	1.0	1.0	-
2	CYL120	ENGINEERING CHEMISTRY LAB	LAB/WS	3.0	-	-	-	1.7	-	-	-	-	-	-	3.0	-	-
3	ESL120	CIVIL & MECHANICAL WORKSHOP	LAB/WS	1.4	-	-	-	1.0	1.0	-	2.0	2.0	2.0	1.0	1.0	-	2.0
4	PHL120	ENGINEERING PHYSICS LAB	LAB/WS	3.0	-	-	-	2.0	-	-	1.0	2.0	-	-	1.0	-	-
5	ESL120	ELECTRICAL & ELECTRONICS WORKSHOP	LAB/WS	2.6	-	-	1.0	2.0	2.0	-	1.0	2.5	1.7	-	1.7	-	-
6	MEL202	FM & HM LAB	LAB/WS	2.0	1.0	-	-	-	-	-	2.0	3.0	2.0	-	2.0	-	2.0
7	MEL203	MATERIALS TESTING LAB	LAB/WS	2.8	3.0	2.5	1.7	2.8	2.0	2.0	1.0	3.0	2.0	2.8	1.8	-	-
8	MEL201	COMPUTER AIDED MACHINE DRAWING	LAB/WS	3.0	2.0	2.0	-	3.0	-	-	-	-	3.0	-	1.0	2.0	1.0
9	MEL204	MACHINE TOOLS LAB-I	LAB/WS	2.0	3.0	3.0	2.0	2.0	-	-	-	-	-	-	-	-	-
10	MEL301	MACHINE TOOLS LAB-II	LAB/WS	3.0	3.0	3.0	3.0	3.0	-	-	-	-	-	-	-	-	3.0
11	MEL302	COMPUTER AIDED DESIGN & ANALYSIS LAB	LAB/WS	3.0	2.3	2.0	-	-	-	-	1.5	2.3	2.6	-	-	3.0	3.0
12	MEL304	THERMAL ENGINEERING LAB-II	LAB/WS	3.0	-	2.0	3.0	-	-	2.0	-	3.0	2.0	-	2.0	-	-
13	MEL303	THERMAL ENGINEERING LAB-I	LAB/WS	3.0	-	2.0	3.0	-	-	2.0	-	3.0	2.0	-	2.0	-	-
14	MEL411	MECHANICAL ENGINEERING LAB	LAB/WS	3.0	2.0	2.0	3.0	3.0	-	2.0	-	3.0	2.0	-	2.0	1.0	2.5
15	CYT100	ENGINEERING CHEMISTRY	THEORY	1.2	1.3	1.0	1.0	2.0	-	3.0	-	-	-	-	-	-	-
16	EST100	ENGINEERING MECHANICS	THEORY	2.8	2.8	-	-	-	-	-	-	-	-	-	-	-	-
17	EST120	BASICS OF CIVIL & MECHANICAL ENGG	THEORY	3.0	1.7	-	1.0	3.0	2.5	2.5	2.5	2.0	-	-	-	-	3.0
18	HUN102	PROFESSIONAL COMMUNICATION	THEORY	1.0	1.0	-	-	-	1.0	-	-	1.5	2.7	-	2.0	-	-
19	MAT102	VECTOR CALCULUS, DIFFERENTIAL EQS & INTEGRATION	THEORY	3.0	3.0	3.0	3.0	2.0	1.0	-	-	1.0	2.0	-	2.0	-	-
20	PHI110	ENGINEERING PHYSICS B	THEORY	3.0	2.0	-	-	-	-	-	1.0	3.0	-	-	1.0	-	-
21	EST110	ENGINEERING GRAPHICS	THEORY	3.0	1.0	-	-	3.0	-	-	-	-	2.0	-	-	-	-
22	EST130	BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING	THEORY	2.5	1.8	-	-	-	-	-	-	-	-	-	2.0	-	2.0
23	EST200	DESIGN AND ENGINEERING	THEORY	2.0	1.5	2.0	-	-	1.0	1.0	1.0	2.0	1.5	-	1.5	-	3.0
24	HUN101	LIFE SKILLS	THEORY	-	3.0	2.0	1.0	-	1.3	-	1.0	2.3	2.7	1.0	2.0	-	-
25	HUT200	PROFESSIONAL ETHICS	THEORY	-	-	-	-	-	-	-	2.6	-	-	2.0	-	-	-
26	MAT101	LINEAR ALGEBRA AND CALCULUS	THEORY	3.0	2.8	3.0	2.8	1.8	1.0	-	-	1.0	2.0	-	2.0	-	-
27	MAT201	PARTIAL DIFFERENTIAL EQUATION AND COMPLEX ANALYSIS	THEORY	3.0	3.0	2.6	3.0	2.0	1.0	-	-	-	2.0	-	2.0	-	-
28	MAT202	PROBABILITY, STATISTICS AND NUMERICAL METHODS	THEORY	3.0	2.0	2.0	2.0	2.0	-	-	-	-	2.0	-	1.0	-	-
29	MCN101	CONSTITUTION OF INDIA	THEORY	-	-	-	-	-	2.8	2.3	2.8	-	2.7	-	-	-	-
30	MCN201	SUSTAINABLE ENGINEERING	THEORY	-	-	-	-	-	2.0	1.0	-	-	-	-	2.0	-	-
31	MET201	MECHANICS OF SOLIDS	THEORY	3.0	3.0	1.4	-	-	-	-	-	-	-	-	1.2	3.0	3.0
32	MET202	ENGINEERING THERMODYNAMICS	THEORY	2.5	2.5	1.8	1.6	-	-	-	-	-	-	-	1.2	2.0	2.0
33	MET203	MECHANICS OF FLUIDS	THEORY	3.0	2.2	1.2	-	-	-	-	-	-	-	-	-	2.0	2.0
34	MET204	MANUFACTURING PROCESS	THEORY	3.0	3.0	3.0	3.0	-	-	-	-	-	-	-	2.0	-	3.0
35	MET205	METALLURGY & MATERIAL SCIENCE	THEORY	3.0	3.0	-	2.0	3.0	-	-	-	-	-	-	2.0	-	2.0
36	MET206	FLUID MACHINERY	THEORY	3.0	3.0	2.0	-	-	-	-	-	-	-	-	-	-	3.0
37	MCN101	DISASTER MANAGEMENT	THEORY	2.6	2.8	2.3	2.0	2.0	2.0	3.0	3.0	-	2.7	-	2.0	-	-
38	HUT300	INDUSTRIAL ECONOMICS AND FOREIGN TRADE	THEORY	2.0	2.0	1.0	-	2.0	1.5	3.0	-	-	-	3.0	-	-	-

39	HUT310	MANAGEMENT FOR ENGINEERS	THEORY	2.0	2.0	2.0	2.0	1.0	1.3	1.3	1.7	1.0	1.8	1.3	1.0	-	2.3
40	MET301	MECHANICS OF MACHINERY	THEORY	2.8	2.5	2.0	1.5	1.5	-	-	-	-	-	-	-	-	-
41	MET302	HEAT & MASS TRANSFER	THEORY	3.0	3.0	2.8	-	-	-	-	-	-	-	-	1.8	-	-
42	MET303	THERMAL ENGINEERING	THEORY	3.0	3.0	2.0	-	-	-	-	-	-	-	-	-	-	-
43	MET304	DYNAMICS OF MACHINERY & MACHINE DESIGN	THEORY	1.0	3.0	2.0	-	-	-	-	-	-	-	-	-	-	-
44	MET305	INDUSTRIAL & SYSTEMS ENGINEERING	THEORY	2.3	1.0	-	2.0	1.8	1.0	-	-	2.0	2.0	1.8	2.0	-	2.0
45	MET306	ADVANCED MANUFACTURING ENGINEERING	THEORY	2.2	3.0	2.0	2.2	-	-	-	-	-	2.0	2.0	2.5	2.3	-
46	MET307	MACHINE TOOLS AND METROLOGY	THEORY	2.2	2.3	2.0	2.0	2.0	-	-	-	-	2.0	1.8	-	-	-
47	MET311	NONDESTRUCTIVE TESTING	THEORY	3.0	3.0	1.6	-	-	-	-	-	-	-	1.4	2.0	2.0	-
48	MET351	AUTOMOBILE ENGINEERING	THEORY	3.0	-	-	-	-	-	-	-	-	-	-	3.0	-	2.0
49	MET401	DESIGN OF MACHINE ELEMENTS	THEORY	3.0	3.0	3.0	3.0	-	-	-	-	-	-	-	2.0	1.0	-
50	MET402	MECHATRONICS	THEORY	3.0	1.8	1.8	-	3.0	-	-	-	-	-	-	-	1.0	-
51	CET403	ENVIRONMENT IMPACT ASSESSMENT	THEORY	2.8	2.5	2.0	2.3	1.8	2.0	2.3	2.5	-	2.5	-	-	-	-
52	MET408	ADVANCED ENERGY ENGINEERING	THEORY	3.0	1.0	-	-	-	1.0	1.0	-	-	-	-	-	-	-
53	MET464	MICRO AND NANO MANUFACTURING	THEORY	2.5	-	-	2.0	1.0	-	1.2	-	2.0	1.0	1.2	1.0	-	2.0
54	MET473	AIR CONDITIONING AND REFRIGERATION	THEORY	3.0	1.8	2.0	1.7	-	2.0	2.0	-	-	-	-	1.2	-	2.0
55	MCN401	INDUSTRIAL SAFETY ENGINEERING	THEORY	2.0	1.8	2.0	1.0	1.0	1.2	1.2	1.2	1.0	1.0	-	1.0	-	-
56	MET416	COMPOSITE MATERIALS	THEORY	3.0	3.0	-	-	-	-	-	-	-	-	-	-	-	-
57	MED415	PROJECT PHASE I	PROJECT	2.0	2.5	2.5	1.8	1.8	2.5	2.5	1.8	1.8	2.0	1.6	1.3	3.0	3.0
58	MED416	PROJECT PHASE II	PROJECT	2.2	2.3	2.2	1.5	2.2	1.8	1.5	1.0	1.0	1.0	1.0	2.0	3.0	3.0
59	MEQ413	SEMINAR	SEMINAR	2.8	2.5	2.0	2.3	2.4	2.0	1.0	1.3	-	2.7	-	3.0	-	-
60	MET308	COMPREHENSIVE COURSE WORK	VIVA	3.0	2.0											2.0	
61	MET404	COMPREHENSIVE VIVA VOCE	VIVA	3.0	3.0	3.0	2.0	1.0	1.0	1.0	2.0	2.0	3.0	-	1.0	-	-
NO OF COURSES WITH HIGH CORRELATION				47	30	13	12	11	3	8	5	8	9	2	3	6	12
NO OF COURSES WITH MEDIUM CORRELATION				9	14	25	15	16	12	9	8	11	17	8	28	5	11
NO OF COURSES WITH LOW CORRELATION				1	4	2	4	5	9	4	7	5	3	3	9	1	2
NO OF COURSES WITH NO MAPPING				4	9	19	26	27	33	37	37	34	30	44	20	44	31
AVERAGE MAPPING				2.7	2.3	2.1	2.0	2.1	1.6	1.9	1.7	2.0	2.1	1.7	1.7	2.3	2.3
PERCENTAGE				88.8	77.1	71.0	68.0	69.1	51.9	64.7	56.5	66.6	68.4	57.1	56.7	75.6	77.7


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Curriculum (KTU 2019 Scheme) Contribution for the Mapping POs & PSO



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DEPARTMENT OF MECHANICAL ENGINEERING

CURRICULAR GAP ANALYSIS (KTU 2019 SCHEME CURRICULUM)

The process used to identify the extent of compliance of the Mechanical Engineering curriculum for attaining the POs and PSOs of the program is detailed below.

- ❖ Kerala Technological University provides detailed curriculum for 2019 SCHEME which includes the Course Outcomes and CO-PO Mapping for all the courses. Course Coordinator along with course handling faculty for each course analyze the Course outcomes and prepares CO-PSO mapping according to the correlation level of the particular Course Outcome(CO) as High (3),Medium (2) or Low(1) for wherever required. The team was also directed to identify the curricular gaps by analyzing the overall mapping of each Course COs with POs/PSOs and present in The Program Assessment & Quality Improvement Committee PAQIC.
- ❖ The Program Assessment & Quality Improvement Committee (PAQIC) after analyzing curricular gap submitted to it and reviewed the topics/gaps to be covered beyond syllabus and the suggestions/proposals for courses, seminars, lectures and workshops to bridge the curriculum gaps for the academic year. The recommendations are referred to DAB for finalization and approval
- ❖ Curriculum gaps and proposals for content beyond syllabus courses for the academic year are reviewed in the DAB meeting and the content beyond syllabus is finalized and approved.
- ❖ Along with the university curriculum, the content beyond syllabus is delivered through additional programs like workshop, seminar, invited talks and additional classes.
- ❖ The assessment of PO Attainments of above issued additional programs are indirectly assessed with help of feedbacks of the programs and check whether process is satisfactory or not.
- ❖ If not the same is presented in PAQIC meeting and reviewed and updated and forwarded to DAB for further approval

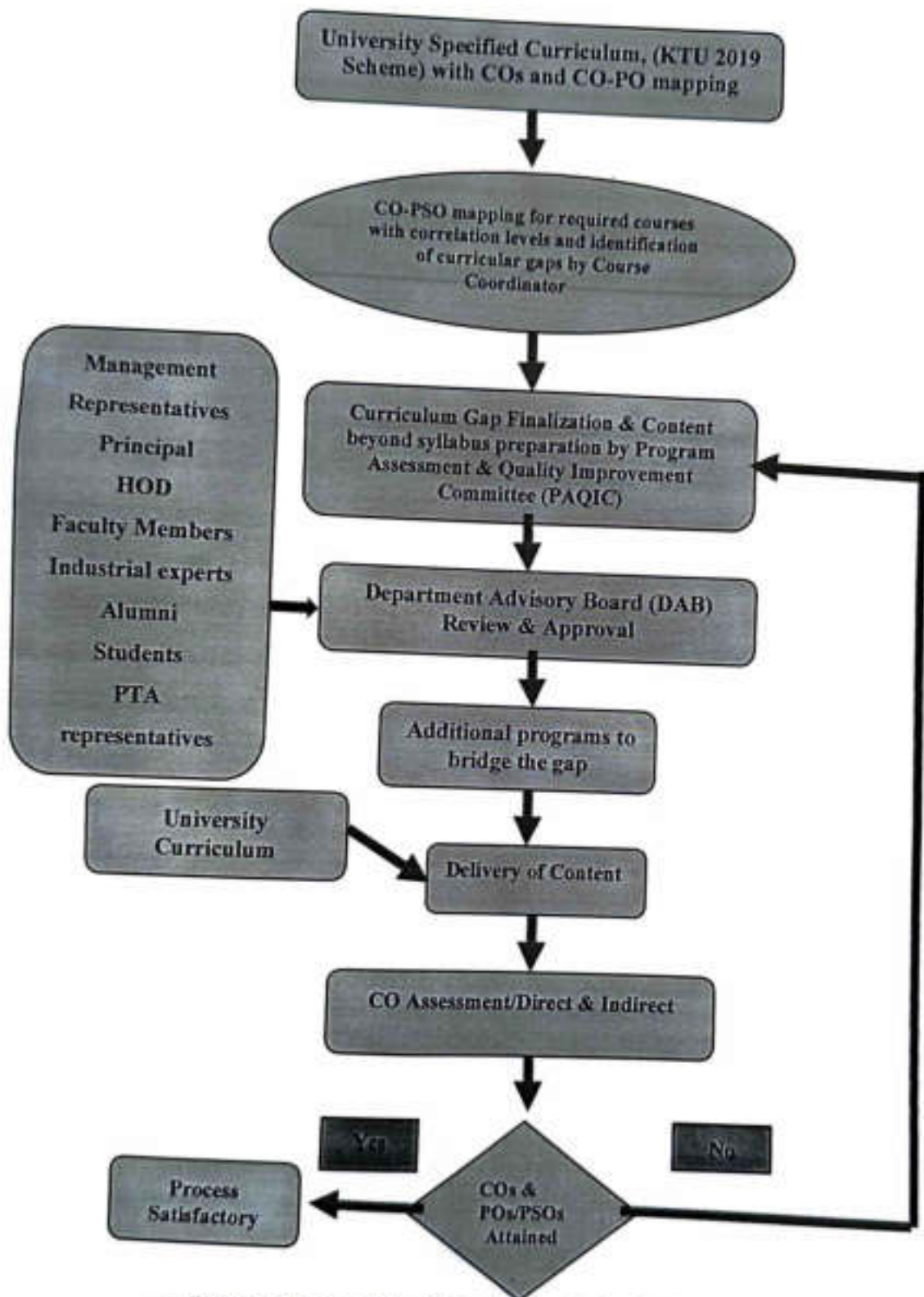


Figure 1 Process of identifying Curricular Gap & Content beyond syllabus
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CURRICULAR GAP & PROGRAMS PROPOSED FOR ACADEMIC YEAR 2022-23

KTU 2019 SCHEME CURRICULAR GAPS

ACROSS THE DEPARTMENT

SLN o	Course /Field Name	GAP	Relevance with POs	Proposed Action	Responsible Faculty Members
1	Robotics Workshops	Advanced design concepts in Robotics and Industrial Automation	PO4, PO5, PO6,PSO1	Workshop/hands-on training under IEEE-RAS	Dr. Sridharan/ Mr Josy James/Dr. Christopher
2	Management skills in engineering/Professional Communication	Leadership and administrative capabilities	PO6,PO8,PO9,PO10,PO11,PSO1,PSO2	Technical fest/Project expos/boot camps	Shaminmuth K K,/ Dilin Dinesh
3	Entrepreneurship Awareness	Entrepreneurship awareness	PO6,PO8,PO9,PO10,PO11,PSO2	Entrepreneurship Awareness Camp/Seminar	Dr. Sridharan

SEMESTER : S7/S8

4	Mechatronics (MET 402)	Advanced design concepts in Robotics and Industrial Automation	PO4, PO5, PO6,PSO1	Technical Talks by / Workshop/hands-on training under IEEE Robotics and Automation Society (RAS) chapter	Dr. Sridharan/ Mr Josy James
5	Career Development/Placement Opportunities/ Comprehensive Exams (MET404)	Awareness of career opportunities in national & international level	PO1,PO6,PO7,PO12,PSO1,PSO2	Placement Training/Seminars/ Alumni Interaction	Mr.Dilin Dinesh/ Mr. Shaminmuth KK / Mr.Midhun Mukundan/ Mr Arunlal M P
6	Seminar (MEQ 413) Project (MED 416) /Research (Research based knowledge & familiarization of research tools	PO2, PO3, PO6, PO7, ,PO8, PO10,PO 12, PSO 1, PSO 2	International/ national conferences/ Seminars/ workshops on IPR /Research Tool workshops/FDP/ Paper writing /Mat lab workshop	Dr.Chrtristopher/Mr. Mejo M Francis/Mr. Gokulnath R/Dr Sridharan P
7	Design of Machine Elements (MET 401)	Advanced trends in automobile design and drive train mechanisms	PO3,PO4,PO5,PO6,PO7,PSO1,PSO2	Workshops/Hands on training programs	Mr. Aji Augustine/ Mr Ramprasidh A

SEMESTER : S5/S6

8	Automobile engineering (MET 352)	Advanced trends in automobile design and drive train mechanisms	PO3,PO4,PO5,PO6,PO7,PSO1,PSO2	Workshops/Hands on training programs	Mr. Aji Augustine/ Dr.Jithin E V
9	Dynamics of machinery & machine design (MET 304)/ Mechanics of Machinery (MET 301)	Advanced trends in automobile design and drive train mechanisms	PO3,PO5,PO7,PO9,PO10,PSO1,PSO2	Seminars/ workshops on automobile scenarios under SAE	Mr.Niyas K M/Mr.Dilin Dinesh/Mr.Shaminmuth K K
10	Computer aided design and analysis Lab (MEL332)	Advanced industry based modelling & simulation tools	PO5,PO6,PSO1,PO 3, PO 4, PO 5	Short Term Training on Advanced modelling and analysis software tools in collaboration with BIMLab/Conceptia/ Inter CAD systems etc	Dr Sreekanth M P/Dr Jithin E V/Mr Gokulnath R
11	Advanced Manufacturing Technology (MET 306) / Machine Tools and Metrology (MET 307)	Advanced manufacturing tools and techniques	PO5,PSO1	STTP for students CNC programing & hands-on Training and workshops/EDGE CAM Training	Shaji George/ Dr. Jithin E V /Biju K J//Mr.Midhun Mukundan
12	Heat & Mass Transfer (MET 302) / Air-conditioning and Refrigeration (MET 473)	Advanced industry based modelling & simulation tools	PO5,PO6,PSO1,PO 3, PO 4, PO 5	Workshops/Invited talk/Seminar/Training on Advanced developments in mechanical engineering	Mr.Ryne P M/Mr.Dilin Dinesh/ Mr Arunlal

SEMESTER : S3/ S4

13	Manufacturing process (MET 204)	Advanced manufacturing tools and techniques	PO5,PSO1,PSO2	Workshop on 3D Printing technology/CNC/EDGE CAM Training	Mr. Shaji George /Mr Biju K J/Dr.Sreekanth M P
14	Thermodynamics (MET 202) /Mechanics of Fluids (MET 203)	Advanced industry based modelling & simulation tools	PO 3, PO 4, PO 5,PO6,PSO1	Workshops/Invited talk/Seminar/Training on Advanced developments in mechanical engineering	Mr.Mejo M Francis. Francis /Mr Appu Kuiran

SEMESTER: S1/S2

15	Life Skill (HUN 101)	Social ethics and responsibilities	PO8	Guest lectures/Charity Activities	Mr.Aji Augustine Mr. Niyas K M
16	Basic Mechanical engineering	Advanced industry based modelling &	PO3 PO5,PO6,PO7,PO8,PO9,PO10	Basic Design Engineering workshops/ video	Mr.Ryne P M/ Gokulnath R/Appu Kurian

	(EST120)Engg. Graphics(EST 110)	simulation tools		lectures	
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CURRICULAR GAP & PROGRAMS FOR ACADEMIC YEAR 2022-23 STATUS**KTU 2019 SCHME COURSES****ACROSS THE DEPARTMENT**

Sl. No	Course /Field Name	GAP	Relevance with POs	Proposed Action	Responsible Faculty Members	STATUS
1	Robotics Workshops	Advanced design concepts in Robotics and Industrial Automation	PO4, PO5, PO6, PSO1	Workshop/hands-on training under IEEE-RAS	Dr. Sridharan/ Mr Josy James/Dr. Christopher	Webinar on multi robot systems, by Dr.Lucia Pallottino, Associate Professor, University of Di Pisa, Italy On 4th of Nov 2022, Technical Talk on Current trends in Computer & Communication Technologies by Dr. Mini Ulanat, Systems Manager, Cochin University of Science & Technology and Chair, IEEE Kerala Section. On 20 th Sep 2022 Hands-on training Robotic workshop on 4 th Dec 2022 in collaboration with IEEE RAS
2	Management skills in engineering/Professional Communication	Leadership and administrative capabilities	PO6, PO8, PO9, PO10, PO11, PSO1, PSO2	Technical fest/Project expos/boot camps	Shaminmuth K K/ Dilin Dinesh	ME Tech Fest "MEXTERIOUS 2K22 on 5 th Dec 2022
3	Entrepreneurship Awareness	Entrepreneurship awareness	PO6, PO8, PO9, PO10, PO11, PSO 2	Entrepreneurship Awareness Camp/Seminar	Dr. Sridharan	Scheduled
SEMESTER : S7/S8						
5	Mechatronics (MET 402)	Advanced design concepts in Robotics and Industrial Automation	PO4, PO5, PO6, PSO1	Technical Talks by / Workshop/hands-on training under IEEE Robotics and Automation Society (RAS) chapter	Dr. Sridharan/ Mr Josy James	Technical Talk on "The role of energy and dissipation in robotics" on 9 th Nov 2022 by Dr.Pablo Borja Rosales, Professor University of Plymouth, UK.

6	Career Development/Placement Opportunities/ Comprehensive Exams (MET404)	Awareness of career opportunities in national & international level	PO1,PO6,PO7,PO12,PSO1,PSO2	Placement Training/Seminars/ Alumni Interaction	Mr.Dilin Dinesh/ Mr. Shaminmuth KK / Mr.Midhun Mukundan/ Mr Arunlal M P	12 hours sessions of an add-on course or employability skill enhancement 14th and 15th October 2022 in association with Progressum Edutech Pvt.Ltd.
7	Seminar (MEQ 413)/ Project (MED 416) /Research (Research based knowledge & familiarization of research tools	PO2, PO3, PO6, PO7, PO8, PO10,PO 12, PSO 1, PSO 2	International/ national conferences/ Seminars/ workshops on IPR /Research Tool workshops/FDP/ Paper writing /Mat lab workshop	Dr.Christopher/Mr. Mejo M Francis/Mr. Gokulnath R/Dr Sridharan P	International Conference ICTCEES 2K23 Seedulex
8	Design of Machine Elements (MET 401)	Advanced trends in automobile design and drive train mechanisms	PO3,PO4,PO5,PO6,PO 7,PSO 1,PSO2	Workshops/Hands on training programs	Mr. Aji Augustine/ Mr Ramprasidh A/ Dr.Jithin E V	"Srushti" Display of student Btech projects and models of VJEC students on 5 th Dec 2022 in collaboration with Mexterious 2K22
9	Add-on Course on BIM Tools	Advanced industry based modelling & simulation tools	PO1,2,3,5,10 PSO 1, PSO 2	Add-on Course	Mr. Shaminmuth K K	Add-on Course on BIM Tools- Revit MEP & Inventor (30 Hrs)

SEMESTER : S5/S6

10	Dynamics of machinery & machine design (MET 304)/ Mechanics of Machinery (MET 301)	Advanced trends in automobile design and drive train mechanisms	PO3,PO5, PO7,PO9,PO 10,PSO1,PSO2	Seminars/ workshops on automobile scenarios under SAE	Mr.Niyas K M/Mr.Dilin Dinesh/Mr.Shaminmuth K K	Engine Assembly Work shop on 5 th Dec 2022 in collaboration with Mexterious 2K22
11	Computer aided design and analysis Lab (MEL332)	Advanced industry based modelling & simulation tools	PO5,PO6,PSO1, PO 3, PO 4, PO 5	Short Term Training on Advanced modelling and analysis software tools in collaboration with BIMLab/Conceptia / Inter CAD systems etc	Dr Sreekanth M P/Dr Jithin E V/Mr Gokulnath R	Organized a technical talk on "Developments in Design and Automation for Industry 4.0" for Second, Third, and Final Year ME Students on 22 December 2022 at Varicattu Hall, VJEC during 10 AM to 12 PM.
12	Advanced Manufacturing	Advanced manufacturing	PO1,PO5,PSO1,PSO2	STTP for students CNC programming &	Shaji George/ Dr. Jithin E V /Biju K	CNC Skill Development Training (5 Days) 12 th

	Technology (MET 306) / Machine Tools and Metrology (MET 307)	tools and techniques		hands-on Training and workshops/EDGE CAM Training	J//Mr.Midhun Mukundan	Oct to 26 th Oct 2022 Organized a technical talk on "Developments in Design and Automation for Industry 4.0" for Second, Third, and Final Year ME Students on 22 December 2022 at Varicattu Hall, VJEC during 10 AM to 12 PM.
13	Heat & Mass Transfer (MET 302) / Air-conditioning and Refrigeration (MET 473)	Advanced industry based modelling & simulation tools	PO5,PO6,PSO1, PO 3, PO 4, PO 5	Workshops/Invited talk/Seminar/Training on Advanced developments in mechanical engineering	Mr.Ryne P M/Mr.Dilin Dinesh/ Mr Arunlal	CFD workshop/webinar in collaboration with Flow Thermo Labs scheduled
14	Add-on Course on BIM Tools	Advanced industry based modelling & simulation tools	PO1,2,3,5,10 PSO 1, PSO 2	Add-on Course	Dr. Jithin E V	Add-on Course on BIM Tools- Revit MEP & Inventor (30 Hrs)

SEMESTER : S3/ S4

15	Manufacturing process (MET 204)	Advanced manufacturing tools and techniques	PO5,PSO1	Workshop on 3D Printing technology/CNC/EDGE CAM Training	Mr. Shaji George /Mr Biju K J/Dr.Sreekanth M P	PRINT 3D (workshop on 3D printing & CNC on 5 th Dec 2022 in collaboration with Mexterious 2K22
16	Thermodynamics (MET 202) /Mechanics of Fluids (MET 203)	Advanced industry based modelling & simulation tools	PO 3, PO 4, PO 5,PO6,PSO1	Workshops/Invited talk/Seminar/Training on Advanced developments in mechanical engineering	Mr.Mejo M Francis. Francis /Mr Appu Kuiran	CFD workshop/webinar in collaboration with Flow Thermo Labs scheduled
17	Add-on Course on Robotics-ADME 401	Advanced design concepts in Robotics and Industrial Automation	PO1, 2,3,4,5,6,9,11,12,PSO1, PSO 2	Add-on Course	Mr. Mejo M Francis/Mr Anoop K R	Add-on Course on Industrial Robotics and Internet of things (30 Hrs)

SEMESTER: S1/S2

18	Life Skill (HUN 101)	Social ethics and responsibilities	PO8	Guest lectures/Charity Activities	Mr.Aji Augustine Mr. Niyas K M	Charity Pilgrim Scheduled
19	Basic Mechanical engineering (EST120)/Engg. Graphics(EST 110)	Advanced industry based modelling & simulation tools	PO3 PO5,PO6,PO7,PO8.PO 9,PO10	Basic Design Engineering workshops/ video lectures	Mr.Ryne P M/ Gokulnath R/Appu Kurian	3D Printing Workshop Scheduled

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24/12/2022

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CURRICULAR GAPS & PROPOSED PROGRAMS FOR AY 2021-22

SEMESTER : S7/S8 (KTU 2015 SCHEME)

SLNo	Course /Field Name	GAP	Relevance with POs	Proposed Action	Responsible Faculty Members
1	Seminar/Project /Research (ME 492/ME 451)	Research based knowledge & familiarization of research tools	PO2, PO3, PO6, PO7, ,PO8, PO10,PO 12, PSO 1, PSO 2	International/ national conferences/ Seminars/ workshops on IPR /Research Tool workshops/FDP/ Paper writing /Mat lab workshop/ Cycle Temp/Siemens training	Dr.Chrtristopher/Dr Sreekanth M P/Dr Sridharan/M r.Sivaprasad
3.	Career Development/Placement	Awareness of career opportunities in national & international level	PO1,PO6,PO7,PO1 2,PSO1.PSO2	Placement Training/Seminars/Alumni Interaction	Mr. Dilin Dinesh/Mr. Alex George/Mej o M Francis
4	Compressible Fluid Flow (ME 409)/ Refrigeration & Air conditioning (ME 405)	Advanced industry based modelling & simulation tools	PO 3, PO 4 , PO 5,PO6,PSO1	Revit /CFD Invited Talks/ Hands on training, Workshops	Mr.Gokulna th R Mr. Shaminmuth K K, Mr. Mejo M Francis, Mr.Deepak kumar
5	Design of Machine (ME 401) Elements/Autom obile engineering (ME464)	Advanced trends in automobile design and drive train mechanisms	PO3,PO4,PO5,PO6 ,PO7,PSO 1,PSO2	Workshops/Hands on training programs	Mr. Johny P Joseph, Mr. Alex George, Dr. Sivaprasad Dr. Jithin E V
6	Mechatronics (ME-407) /Robotics	Advanced design concepts in Robotics and Industrial Automation	PO4. PO5, PO6,PSO1	Workshop/hands-on training	Dr. Sridharan/ Mr Arun Lal

SEMESTER : S5/S6 (KTU 2019 SCHEME)

7	Computer aided design and analysis Lab (MEL332)/(Heat & Mass Transfer (MET 302)	Advanced industry based modelling & simulation tools	PO5,PO6,PSO1, PO 3, PO 4 , PO 5	Workshops/Invited talk/Seminar/Training on Advanced developments in mechanical engineering	Johny P Joseph/Aji Augustine/S haji Geroge/ Mr.Ryne P M/Mr.Dilin
8	Industrial	Advanced			Mr.

	Systems Engineering & Industrial Economics	industry based modelling & simulation tools	PO 3, PO 4, PO 5,PO6,PSO1	Hands-on Training workshops on modern tool Eg: Arena	Shaminmuth K K/ Mr. Niyas K M/Mr. Mithun KMukundan
9	Advanced Manufacturing Technology (MET 306) / Machine Tools and Metrology (MET 307)	Advanced manufacturing tools and techniques	PO5,PSO1	STTP for students CNC programing & hands-on Training and workshops/EDGE CAM Training	Shaji George/Biju K J/Mr.SibaPrasad
10	Dynamics of machinery & machine design (MET 304)/ Mechanics of Machinery (MET 301)/	Advanced trends in automobile design and drive train mechanisms	PO3,PO5, PO7,PO9,PO 10,PSO1,PSO2	Seminars/ workshops on automobile scenarios	Mr.Niyas K M/Mr.Dilin Dinesh/Mr. Johny P Joseph
SEMESTER : S3/S4 (KTU 2019 SCHEME)					
11	Manufacturing process (MET 204)	Advanced manufacturing tools and techniques	PO5,PSO1	Workshop on 3D Printing technology/CNC/EDGE CAM Traning	Mr. Shaji George Jerin Saji
10	Thermodynamics (MET 202) /Mechanics of Fluids (MET 203)	Advanced industry based modelling & simulation tools	PO 3, PO 4, PO 5,PO6,PSO1	Workshops/Invited talk/Seminar/Training on Advanced developments in mechanical engineering	Appu Kurian/Deepak kumar/Mejo Francis/Dilin Dinesh
SEMESTER: S1/S2 (KTU 2019 SCHEME)					
12	Life Skill (HUN 101)	Social ethics and responsibilities	PO8,PO10	Guest lectures	Dr.Sridharan/Rameshan K P
13	Basic Mechanical engineering (EST120)/Engg. Graphics(EST 110)	Awareness of career opportunities in national & international level	PO1,PO6,PO7,PO12,PSO1.PSO2	Industrial Visit/ Industrial Internship/Invited talks from Industrialist/Alumni Interaction	Gokulnath R/Appu Kurian
ACROSS THE DEPARTMENT					
14	Management skills in engineering/Professional Communication	Leadership and administrative capabilities	PO6,PO8,PO9,PO10,PO11,PSO1, PSO2	Technical fest/Project expos/boot camps	Shaminmuth K K, Rinjesh A M. Dilin Dinesh
	Entrepreneurship	Entrepreneurs	PO6,PO8,PO9,P	Entrepreneurship	

	p Awareness	hip awareness	O10,PO11,PSO 2	Awareness Camp/Seminar	Dr. Sridharan
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2/9/2022

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CURRICULAR GAP BRIDGING PROGRAMS CONDUCTED FOR ACADEMIC YEAR
2021-22

SEMESTER : S7/S8 (KTU 2015 Scheme)						
Sl. No	Course /Field Name	GAP	Relevance with POs	Proposed Action	Responsible Faculty Members	STATUS
1	Seminar /Project/ Research (ME 492/ME 451)	Research based knowledge & familiarization of research tools	PO2, PO3, PO6, PO7, PO8, PO10, PO12, PSO 1, PSO 2	International/ national conferences/ Seminars/ workshops on IPR /Research Tool workshops/FDP/ Paper writing /Mat lab workshop/ Cycle Temp/Siemens training	Dr.Chrtristopher/ Dr Sreekanth M P/Dr Sridharan/Dr.Siv aprasad	Workshop on 'Mendeley desktop Software on 10 th Sep 2021
2.	Career Development/Placement Opportunities	Awareness of career opportunities in national & international level	PO1,PO6,PO7,PO12,PSO1,PSO2	Placement Training/Seminars/Alumni Interaction	Mr. Dilin Dinesh/Mr. Alex George/Mr. Jerin Saji/ Mr. Aji Augustine	Webinar on "importance of soft skill in personal & Professional life-Job opportunities in current market scenario" on 19 th Nov 2021 by Ms. Suhaila Hashim, Assistant General Manager of Avodha and Career Expert. Online Alumni Meet "RETROSPECT" 21" on 26 th Nov 2021 In association with MTTC INTERNATIONAL LLC, organized a Seminar on "Career opportunities in various sectors in the field of Mechanical Engineering" on 19-04-2022
3	Compressible Fluid Flow (ME 409)/Refrigeration	Advanced industry based modelling & simulation tools	PO 3, PO 4, PO 5,PO6,PSO1	Revit /CFD Invited Talks/ Hands on training, Workshops	Mr.Gokulnath R Mr. Shaminmuth K K, Mr. Mejo M Francis, Mr.Deepak kumar	Workshop on "Career options for Mechanical Engineer in HVAC & MEP-BIM" 4 th May 2021 The resource person was Mr. Aslam

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	tion & Air conditioning (ME 405)					Muhammed Sr. Technical Engineer, BIMLABS TVM
4	Design of Machine (ME 401) Elements /Automobile engineering (ME464)	Advanced trends in automobile design and drive train mechanisms	PO3,PO4,PO5,PO6,PO7,PSO1,PSO2	Workshops/Hands on training programs	Mr. Johny P Joseph, Mr. Alex George, Dr. Sivaprasad Dr. Jithin E V	Webinar on "orientation program on product design & Manufacturing with autodesk fusion 360" on 25 th may 2021- The resource person - Mr. Vishnudathan P R, Programme Manager, Advanced Skill Development Centre, Kannur ASAP
5	Mechatronics (ME-407) /Robotics	Advanced design concepts in Robotics and Industrial Automation	PO4. PO5, PO6,PSO1	Workshop/hands-on training	Dr. Sridharan/ Mr Arun Lal	IEEE Robotics and Automation Society (RAS) chapter initiation.

SEMESTER : S5/S6 (KTU 2019 SCHEME)

6	Dynamic s of machinery & machine design (MET 304)/ Mechanics of Machinery (MET 301)/	Advanced trends in automobile design and drive train mechanisms	PO3,PO5, PO7,PO9,PO10,PSO1,PSO2	Seminars/ workshops on automobile scenarios	Mr.Niyas K M/Mr.Dilin Dinesh/Mr. Johny P Joseph	Webinar on "orientation program on product design & Manufacturing with autodesk fusion 360" on 25 th may 2021- The resource person - Mr. Vishnudathan P R, Programme Manager, Advanced Skill Development Centre, Kannur ASAP
7	Advanced Manufacturing Technology (MET 306) / Machine Tools and Metrolog	Advanced manufacturing tools and techniques	PO5,PSO1	STTP for students CNC programing & hands-on Training and workshops/EDGE CAM Training	Shaji George/Biju K J/Jerin Saji/Dr. Sivaprasad	Webinar on "user involved product development using additive manufacturing on 3 rd June 2021. Career oriented CNC Training 26 th Nov to 17 th Dec 2021

	y (MET 307)					
8	Computer aided design and analysis Lab (MEL332)/(Heat & Mass Transfer (MET 302/	Advanced industry based modelling & simulation tools	PO5,PO6,PSO1, PO 3, PO 4, PO 5	Workshops/Invited talk/Seminar/Training on Advanced developments in mechanical engineering	Mr.Ryne P M/Mr.Dilin Dinesh/ Mr.Johny P Joseph/Mr.Aji Augustine	Webinar on "orientation program on product design & Manufacturing with autodesk fusion 360" on 25 th may 2021- The resource person - Mr. Vishnudathan P R, Programme Manager, Advanced Skill Development Centre, Kannur ASAP

SEMESTER : S3/ S4

9	Manufacturing process (MET 204)	Advanced manufacturing tools and techniques	PO5,PSO1	Workshop on 3D Printing technology/CNC/EDGE CAM Training	Mr. Shaji George Jerin Saji	Career oriented CNC Training 26 th Nov to 17 th Dec 2021
10	Thermodynamics (MET 202)/Mechanics of Fluids (MET 203)	Advanced industry based modelling & simulation tools	PO 3, PO 4, PO 5,PO6,PSO1	Workshops/Invited talk/Seminar/Training on Advanced developments in mechanical engineering	Deepak Kumar/Mejo Francis/Dilin Dinesh/Aji Augustine	Workshop on "Career options for Mechanical Engineer in HVAC & MEP-BIM" 4 th May 2021 The resource person was Mr. Aslam Muhammed Sr.Technical Engineer, BIMLABS TVM

SEMESTER: S1/S2

11	Life Skill (HUN 101)	Social ethics and responsibilities	PO8,PO10	Guest lectures/Charity Activities	Dr.Sreekanth/ Mejo M Francis	Charity Pilgrim on 22 nd May 2022
12	Basic Mechanical engineering (EST120)/Engg. Graphics (EST 110)	Advanced industry based modelling & simulation tools	PO3 PO5,PO6,PO7,PO8,PO9,PO10	Basic Design Engineering workshops/ video lectures	Mr.Ryne P M/ Gokulnath R/Appu Kurian	Employable Skillsets required in core mechanical industries", on 29-05-2021 Mr. Ajitha Prabu.G, Director, Kriatec Services Private Limited and Mr. Ravikumar. S, Senior Application Manager, Kriatec Services Private

						Limited.
ACROSS THE DEPARTMENT						
13	Management skills in engineering/Professional Communication	Leadership and administrative capabilities	PO6,PO8,P O9,PO10,P O11,PSO1,P SO2	Technical fest/Project expos/boot camps	Shaminmuth K K, Rinjesh A M. Dilin Dinesh	Boot Camps for first year students
14	Entrepreneurship Awareness	Entrepreneurship awareness	PO6,PO8,P O9,PO10,P O11,PSO 2	Entrepreneurship Awareness Camp/Seminar	Dr. Sridharan	Entrepreneurship Awareness camp (EAC Workshop) 5 th to 7 th Nov 2021

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2/9/22

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Co-ordinator, P.T.U.K.
Department of Mechanical Engineering
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CURRICULAR GAPS & PROGRAMS PROPOSED FOR AY 2020-21

SEMESTER S7 /S8 (KTU 2015 SCHEME)

Sl. No	Course/ Field Name	GAP	Relevance with POs	Proposed Action	Responsible faculty members
1.	Seminar/Project/Research (ME 492/ME 451)	Research based knowledge & familiarization of research tools	PO2, PO3, PO6, PO7, PO8, PO10, PO 12, PSO 1, PSO 2	International/national conferences/ Seminars/ workshops/Paper writing /Mat lab workshop/DoE Workshops/Cycle Tempo/Siemens training	Dr. Christopher/ Dr. T.D John/ Dr Sreekanth M P
2.	Compressible Fluid Flow (ME 409)/ Refrigeration & Air conditioning (ME 405)	Advanced industry based modelling & simulation tools	PO 3, PO 4, PO 5, PO6, PSO1	Revit /CFD Invited Talks/ Hands on training, Workshops	Mr.Gokulnath R Mr. Shaminmuth K K, Mr. Mejo M Francis, Mr.Ryne PM
3.	Design of Machine (ME 401) Elements/Automobile engineering (ME464)	Advanced trends in automobile design and drive train mechanisms	PO3, PO4, PO5, PO6, PO7, PSO 1, PSO2	Workshops/Hands on training programs	Mr. Johny P Joseph, Mr. Alex George, Mr. Arun B S
4.	Advanced Energy Engineering (ME 403)	Latest developments in sustainable energy practices	PO6, PO7	Sustainable Engineering/Renewable engineering/Power Plant Engineering Seminar/workshop	Mr.Appu Kurian, Mr.Midhun Mukundan
5.	Mechatronics (ME-407) /Robotics	Advanced design concepts in Robotics and Industrial Automation	PO4, PO5, PO6, PSO1	Workshop/hands-on training	Dr. Sridharan/ Mr Arun Lal
6.	Career Development/Seminar/Project	Awareness of Career opportunities in national and international level	PO1, PO6, PO7, PO12, PSO1, PSO2	Placement Training/Seminars/ Alumni Interaction/	Mr. Dilin Dinesh/Mr. Alex George/Mejo M Francis
7.	Entrepreneurship Awareness/ Supply Chain Management (IE306)	Entrepreneurship awareness	PO6, PO8, PO9, PO10, PO11, PSO 2	Entrepreneurship Awareness Camp/Seminar	Dr.Sridharan/Mr. Niyas K M

SEMESTER S5/S6 (KTU 2015 SCHEME)					
8.	Machine Tools and Digital Manufacturing (ME 305) /NDT/ Manufacturing Technology Lab (ME 331)	Advanced manufacturing tools and techniques	PO4,PO5,PSO1,P SO2	STTP for students Edge Cam /CNC programing & hands-on Training and workshops	Mr.Shaji George, Mr. Jerin Saji, Johny P Joseph
9.	Principles of Management (HS 300)	Entrepreneurship awareness	PO6, PO9	Entrepreneurship Awareness Camp/Workshop	Dr. P Sridharan Dr. T D John & Mr. Midhun Mukundan
10.	Mechanics of Machinery (ME 301)	Advanced trends in automobile design and drive train mechanisms	PO3,PO4,PO5,P O6,PO7,PSO 1,PSO2	Workshops/Hands on training programs	Mr. Shaminmuth, Mr. Dilin Dinesh
11.	Design Project (ME 341)	Research based knowledge & familiarization of research tools	PO2, PO3, PO6, PO7, PO8, PO10,PO 12, PSO 1, PSO 2	workshops/Paper writing /Mat lab workshop/DoE Workshops/Cycle Temp/Siemens training	Mr.Aji Augustine Mr Jerin Saji
SEMESTER S3/S4 (KTU 2019 SCHEME)					
12.	Computer Aided Machine drawing/Mechanics of Fluids (MET203)	Advanced industry based modelling & simulation tools	PO5,PO6,PSO1,P SO2	STTP/Workshop/Seminar/Internships/MEP/FEM software/Ansys / CFD workshop	Aji Augustine Dilin Dinesh, Mejo M Francis, Alex George, Mr Ryne P M
13.	Professional ethics (HUN 101)	Awareness of Career opportunities in national and international level	PO1, PO2, PO4, PO9 PO12	Training/Seminars/ Alumni Interaction	Mr. Rameshan K P, Dr.P.Sridran,Mr. Dilin Dinesh,
14.	Metallurgy & Material Science (MET 205)	Advanced manufacturing tools and techniques	PO4,PO5,PSO1,P SO2	STTP for students CNC programing & hands-on Training and workshops	Mr.Arun B S, Mr. Niyas K M
SEMESTER S1/S2 (KTU 2019 SCHEME)					
15.	Basic Mechanical engineering (EST120)/Engg. Graphics(EST 110)	Advanced industry based modelling & simulation tools	PO3 PO5,PO6,PO7,P O8,PO9,PO10	Basic Design Engineering workshops/ video lectures	Mr. Gokulnath R Mr. Arun Lal Mr. Appu Kurian
Across the department					
16.	Management skills in engineering/Professional Communication	Leadership and administrative capabilities	PO6,PO8,PO9,P O10,PO11,PSO1, PSO2	Technical fest/Project expos/boot camps	Shaminmuth K K/ Dilin Dinesh

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CA (retd) RAJU K.K.
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Chemper

CURRICULAR GAP BRIDGING PROGRAMS CONDUCTED FOR AY 2020-21

SEMESTER S7 /S8 (KTU 2015 SCHEME)						
SL.No	Course/ Field Name	GAP	Relevance with POs	Proposed Action	Responsible faculty members	Status of Action
1.	Seminar/Project/Research (ME 492/ME 451)	Research based knowledge familiarization of research tools	PO2, PO3, PO6, PO7, PO8, PO10, PO12, PSO 1, PSO 2	International/national conferences/ Seminars/ workshops/Paper writing /Mat lab workshop/DoE Workshops/Cycle Temp/Siemens training	Dr. Christopher/ Dr Sreekanth M P/Dr Sridharan	International Conference On Technological Convergence In Engineering, Energy, and Sustainability (ICTCEES-2020) One Week Workshop/FDP On "Frontiers of Research in Thermal Sciences 27-08-20 to 3-09-2020 One day Workshop "3D Printing Materials and Software" 07th of November 2020
2.	Compressible Fluid Flow (ME 409)/ Refrigeration & Air conditioning (ME 405)	Advanced industry based modelling & simulation tools	PO 3, PO 4, PO 5, PO6, PS O1	Revit /CFD Invited Talks/ Hands on training, Workshops	Mr.Gokulnath R Mr. Shaminmuth K K, Mr. Mejo M Francis, Mr.Ryne PM	Two Day Online Training on Fusion 360 by BIMLABS 19-09-2020 & 26-09-20 The webinar on "In-cylinder Flow Analysis in an IC Engine using PIV" was held on 04 th September 2020
3.	Design of Machine (ME 401) Elements/Automobile engineering (ME464)	Advanced trends in automobile design and drive train mechanisms	PO3,PO4, PO5,PO6, PO7,PSO 1,PSO2	Workshops/Hands on training programs	Mr. Johny P Joseph, Mr. Alex George, Mr. Arun B S	Webinar on "Automotive Design Thinking" 22nd of August 2020
4.	Advanced Energy Engineering (ME 403)	Latest developments in sustainable energy practices	PO6,PO7	Sustainable Engineering/Renewable engineering/Power	Mr.Appu Kurian, Mr.Midhun Mukundan	The webinar on "Next Generation Solar Thermal Collectors" was held

				Plant Engineering Seminar/workshop		on 14 th September 2020
5.	Mechatronics (ME-407) /Robotics	Advanced design concepts in Robotics and Industrial Automation	PO5, PO6, PO12, PSO1	Workshop/hands-on training	Dr. Sridharan/ Mr Arun Lal	Webinar on "Introduction to Mechatronics 21-11-20
6.	Career Development/ Seminar/Project	Awareness of Career opportunities in national and international level	PO1,PO6, PO7,PO12 ,PSO1.PSO2	Placement Training/Seminars/ Alumni Interaction/	Mr. Dilin Dinesh/Mr. Alex George/Mejo M Francis	The webinar on Career Opportunities for engineers in Indian Defense Sector on 19th Sep 2020 Webinar on Career Prospects In Today's Dynamic Digital Economy On 26 th of September 2020 Webinar on 'Opportunities in Aerospace Industries': 11-06-2020 Webinar on Opportunities for Young Engineers in Oil & Gas Sector 17-10-2020
7.	Supply chain management (IE306)	Entrepreneurship awareness	PO6,PO8, PO9,PO10 ,PO11,PSO2	Entrepreneurship Awareness Camp/Seminar	Dr.Sridharan/Mr. Niyas K M/Arunlal	Webinar on Career Prospects In Today's Dynamic Digital Economy On 26 th of September 2020
8.	Entrepreneurship Awareness/ Supply Chain Management (IE306)	Entrepreneurship awareness	PO6,PO8, PO9,PO10 ,PO11,PSO2	Entrepreneurship Awareness Camp/Seminar	Dr.Sridharan/Mr. Niyas K M/Arunlal	Due to covid-19 situation the programme are yet to be conducted.
SEMESTER S5/S6 (KTU 2015 SCHEME)						
9.	Machine Tools and Digital Manufacturing (ME 305) /NDT/ Manufacturing Technology Lab (ME 331)	Advanced manufacturing tools and techniques	PO4,PO5, PO 6 PSO1,PSO2	STTP for students Edge Cam /CNC programing & hands-on Training and workshops	Dr. Sreekanth/ Mr.Shaji George, Mr. Jerin Saji, Johny P Joseph	"Additive Manufacturing (3D Printing) – Innovative Manufacturing Technique for Engineers On 17th of October 2020 One day Workshop "3D Printing

						Materials and Software"07th of November 2020
10.	Principles of Management (HS 300)	Entrepreneurship awareness	PO6, PO9	Entrepreneurship Awareness Camp/Workshop	Dr. P Sridharan & Mr. Midhun Mukundan	Due to covid-19 situation the programme are yet to be conducted.
11.	Mechanics of Machinery (ME 301)	Advanced trends in automobile design and drive train mechanisms	PO3,PO4, PO5,PO6, PO7,PSO 1,PSO2	Workshops/Hands on training programs	Mr. Shaminmuth, Mr. Dilin Dinesh	Webinar on "Automotive Design Thinking" 22nd of August 2020
12.	Design Project (ME 341)	Research based knowledge & familiarization of research tools	PO2, PO3, PO6. PO7, ,PO8, PO10,PO 12, PSO 1, PSO 2	workshops/Paper writing /Mat lab workshop/DoE Workshops/Cycle Temp/Siemens training	Mr.Aji Augustine Mr Jerin Saji	Webinar on "How to Write a Technical Paper on 21-11-2020
SEMESTER S3/S4 (KTU 2019 SCHEME)						
13.	Computer Aided Machine drawing/Mechanics of Fluids (MET203)	Advanced industry based modelling & simulation tools	PO5,PO6, PSO1,PS O2	STTP/Workshop/S eminar/Internships/ MEP/FEM software/Ansys / CFD workshop	Aji Augustine Dilin Dinesh, Mejo M Francis, Alex George, Mr Ryne P M	Two Day Online Training on Fusion 360 by BIMLABS 19-09-2020 & 26-09-20
14.	Professional ethics (HUN 101)	Awareness of Career opportunities in national and international level	PO1, PO2, PO4, PO9 PO12	Training/Seminars/ Alumni Interaction	Mr. Rameshan K P, Dr.P.Sridran,Mr. Dilin Dinesh,	Webinar on "Military War Machines and Indian Space Programmes" On 17th of October 2020
15.	Metallurgy & Material Science (MET 205)	Advanced manufacturing tools and techniques	PO4,PO5, PSO1,PS O2	STTP for students CNC programing & hands-on Training and workshops	Mr.Arun B S, Mr. Niyas K M	National Level Online Seminar on "3D Printing Materials and Software" 07th of November 2020
16.	Sustainable Engineering	Latest developments in sustainable energy practices	PO6,PO7	Sustainable Engineering/Renew able engineering/Power Plant Engineering Seminar/workshop	Mr.Midhum Mukundan, Mr Jerin Saji	The webinar on "Advances in Energy Research" was held on 05 th September 2020
SEMESTER S1/S2 (KTU 2019 SCHEME)						
17.	Basic Mechanical engineering (EST120)Eng g- Graphics(EST 110)	Advanced industry based modelling & simulation tools	PO3 PO5,PO6, PO7,PO8. PO9,PO10	Basic Design Engineering workshops/ video lectures	Mr. Gokulnath R Mr. Arun Lal Mr. Appu Kurian	Webinar on 'Industrial Relevance of Mechanical Engineering': 03-06-2020

18.	Life skills (HUT101)	Social ethics and responsibilities	PO7,PO8	Charity Pilgrim, Relief Camp visiting & assistance	Mr. Gokulnath R Mr. Arun Lal Mr. Appu Kurian	Boot camp was conducted from 05-10-2020 to 06-11-2020
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13/7/2021

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CURRICULAR GAP BRIDGING PROGRAMS CONDUCTED FOR AY 2019-20

1	Experience to research based knowledge & familiarization of recent techniques and software used by researchers	Seminar and Project Preliminary	Invited Talk on Research & Innovation	11/07/19	Dr. Muhammed Al Saidi, Asst.Professor College of Applied Sciences Sohar Ministry of Higher Education Oman	S7 ME (2016-20)	PO2, PO6, PO 7, PO 12
2	Experience to research based knowledge & familiarization of recent techniques and software used by researchers	Seminar and Project Preliminary	International Conference ICTCEES 2019	11/07/19	Coordinated by Dr. Christopher Ezhil Singh (Professor, ME)	S7 ME (2016-20)	PO6, PO 7, PO 12
3	Experience to research based knowledge & familiarization of recent techniques and software used by researchers	Seminar and Project Preliminary	Seminar on Research Methodology	14/11/19	Dr. T D John (Professor, ME and Research Dean of VJEC) and Dr. S Christopher Ezhil Singh (Professor, ME)	S7 ME(2017-20)	PO 4, PO 5, PO 10, PSO 1
4	Interaction with industries	Machine Tools and Digital Manufacturing/Metallurgy & Material Science	Invited Talk on Steel Industry	11/07/19	Mr. Raha General Manger Peekay Steels	S3 (2018-22) & S5 ME B (2017-21)	PO 6, PO7 PO 12
5	Hands on knowledge in industry based modeling, simulation & project management tools	Design of Machine elements	Introduction to stress strain analysis using FEM software	16/11/19	Mr. Johny P Joseph (Assistant Professor, ME VJEC).	S3 ME(2018-22)	PO 3, PO 4, PO 5,PSO1
	Hands on knowledge in industry based modeling, simulation & project management tools	Project	5 days workshop on Creo Modelling Software	26/10/19	Mr.Vishnu M.V (Sr. Design Engineer), Mr. Midhun J Prakash (Jr. Design Engineer)& Mr. Abhijith J.S (Jr. Design Engineer), Acuwin Innovations Pvt. Ltd	S7 ME(2016-20)	PO 3, PO 4, PO 5,PSO1

7	Hands on knowledge in industry based modeling, simulation & project management tools	Inventory and Supply Chain Management	One Day Workshop On Supply Chain Operation Simulation	02/11/19	Dr. V. Madhusudanan Pillai, Professor, Department of Mechanical Engineering, NIT Calicut	S7 ME(2016-20)	PO3,PO5, PO12, PSO1,PS O2
8	Development of Entrepreneurship skills	Principles of Management	An Invited Talk On Entrepreneurship Journey	04/10/19	Mr. M T P Mohammed Kunhi, Managing Director, Sulfex Mattress Company	S5 ME B (2017-21)	PO6,PO9
9	Exposures to the career opportunities available in national & international level	Across the department	Seminar on Opportunities for Higher Studies Abroad.	07-02-2020	Ms. Seema Mutta, Conselor-Riya Education Mangalore, Ms. Minu Mohandas, Counselor-Riya Education, Kannur and Mr. Nigilesh T T, Counselor-Riya Education Kannur	S6.S8 ME students	PO6,PO7,P O10,PO12
10	Hands on Training in modern manufacturing technologies	ME 303 Machine Tools and Digital Manufacturing	Training In Edgcam In Association With Kriatech Services	19/11/19	Mr. Vijikumar, (Application Manager Kriatech Services Pvt. Ltd) , Mr. Biju K J (CNC Trainer, ME Dept.) and Mr. Shaji George (Assistant Professor, ME Dept.)	S5 ME(2017-21)	PO5,PSO1
11	Awareness about real world technological solutions by applying modern tools and appropriate technologies	Design of Machine elements	Knowledge enhancement seminar on MEP	02/11/19	Mr. Vinod Balakrishna Freelancer- MEP Head (ACTMEP)	S7 ME (2016-20)	PO3, PO5, PO6 and PO9
12	Familiarization of methodologies to utilize green energy sources	Advanced energy engineering/ Sustainable	Seminar On Sustainable Development Goals	27/09/19	Dr. Benny Joseph, Principal, VJEC	S7 ME (2016-20)	PO6,PO7

		energy process					
13	Cultivate moral & ethical principles and commitment in professional, social ethics and responsibilities	Life Skills	CHARITY PILGRIM 2020 conducted on 15/2/2020	15/2/2020	Co ordinated by Mr. Jomy Jose AP Ash	S2 ME Students	PO8,PO9,PO 10
14	Development of Entrepreneurship skills	Entrepreneurship Awareness/ Business economics /Principle of Management	ENTREPRENEURSHIP AWARENESS CAMP	05-03-2020 to 07-03-2020	Cdr.Raju K Kuriakose (retd) HOD,ME,Dr.P.Sridharan ASP, ME, Dr.T.D.John , Dean Research, VJEC	S4 & S6	PO6,PO8, PO9,PO10,PO11,PSO 2
15	Insight to the Design Concepts in Robotics& Industrial automation	Robotics/ Mechatronics	webinar on Advanced Robotics and its Applications	30-05-2020.	Dr. Jaya Christiyan, & Dr. Sunith Babu who are Assistant Professors, Department of Mechanical Engineering, MS Ramaiah Institute of Technology, Bangalore	S8	PO3,PO5,PO6,PO 9 PSO1,PSO 2
16	Design & manufacturing modules on latest automobile scenarios like solar, hybrid, all-terrain vehicles, formula cars	Automobile Engineering Dynamics of machinery/ Project	ONLINE TRAINING "BOSCH SKYPE TRAINING FOR AUTOMOTIVE SEGMENT"	21-05-2020 to 29-05-2020.	Mr. Kiran G Nair (Regional trainer, Bosch- south zone) and Mr. Betsy Lal (Local Trainer Kerala)	S4 ME (2018-22), S6 ME (2017-21)	PO3,PO5, PO6 PO7,PO9, PO 12,PSO 1
17	Hands on Training in modern manufacturing technologies	ME 303 Machine Tools and Digital Manufacturing	Online technical talk on "3D Printing Technology, Its Applications - FDM/FFF Parameters Explained"	29th April 2020	Mr. Joseph Mathew T, Managing Partner, Insta3D, Coimbatore.	S5 ME(2017-21)	PO5,PSO1

18	Hands on knowledge in industry based modeling, simulation & project management tools	Fluid Machinery/ Fluid Mechanics	webinar on 'Computational Fluid Dynamics'	7 th May 2020	Mr. Albin Joseph (PhD Scholar NIT Calicut).	S4 ME(2018-22)	PO3,PO5, PO12, PSO1,PS O2
19	Exposures to the career opportunities available in national & international level	Across the department	Career oriented Webinar on 'Design of Building Mechanical Services'	18-05-2020.	Mr. Nishad S, Coordinator and Technical officer, BIMLABS, Trivandrum.	S8 ME (2016-20 batch)	PO6,PO7,P O10,PO12

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12/8/2020

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LIST OF CURRICULAR GAPS IDENTIFIED

List of curricular gaps identified CAY2019-20

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Sl. No	GAP	Course Name	Proposed Action	Relevance with POs
1.	Experience to research based knowledge & familiarization of recent techniques and software used by researchers	Design Projects /Seminar and Project	International/ national conferences/ Seminars/ workshops/Paper writing /Mat lab workshop/DoE Workshops	PO2, PO3, PO6, PO 7, ,PO8, PO10,PO 12
2.	Hands on knowledge in industry based modeling, simulation & project management tools	Design of machine elements/Computer aided design and analysis, Refrigeration & air-condition,	hands-on Training workshops on modern tools	PO 3, PO 4, PO 5,PSO1
3.	Design & manufacturing modules on latest automobile scenarios like solar, hybrid, all-terrain vehicles, formula cars	Dynamics of machinery/ Thermal Engg./Project	Seminars/ workshops on automobile scenarios	PO3,PO5, PO7,PO9,PO 10,PSO1,PSO2
4.	Familiarization of methodologies to utilize green energy sources	Advanced Energy Engineering/Sustainable energy engineering/Sustainable energy process	Sustainable Engineering/Renewable engineering/Power Plant Engineering Seminar/workshop	PO6,PO7
5.	Insight to the Design Concepts in Robotics& Industrial automation	Robotics/ Mechatronics	Hands on training in Robotics & automation	PO3,PO5,PO6,PO 9 PSO1,PSO2


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6.	Awareness about real world technological solutions by applying modern tools and appropriate technologies	Supply Chain Management/Mechanics of Fluid/Fluid Machinery	Workshop, Invited talk, Seminar on Advanced developments in mechanical engineering	PO5,PO6,PSO1
7.	Ability to work as a team leader or a member and capable of taking responsibilities to enhance the administrative skills	Management skill in engineering	Technical fest/Project expos/boot camps	PO6,PO8,PO9,PO10,PO11,PSO1,PSO2
8.	Interaction with industries	Machine Tools and Digital Manufacturing/ Metallurgy & Material Science	Industrial Visit/ Industrial Internship/Invited talks from Industrialist	PO 6, PO7 PO 12
9.	Hands on Training in modern manufacturing technologies	Advanced Manufacturing / Manufacturing Technology	STTP for students CNC programing & hands-on Training and workshops	PO5,PSO1
10.	Development of Entrepreneurship skills	Entrepreneurship Awareness/ Business economics /Principle of Management	Entrepreneurship Awareness Camp/Seminar	PO6,PO8,PO9,PO10,PO11,PSO2
11.	Exposures to the career opportunities available in national & international level	Career Development/Seminar Project	Placement Training/Seminars/Alumni Interaction	PO1,PO6,PO7,PO12,PSO1,PSO2
12.	Cultivate moral & ethical principles and commitment in professional, social ethics and responsibilities	Life skills	Charity Pilgrim, Relief Camp visiting & assistance	PO8



