



MAR BASELIOS

COLLEGE OF ENGINEERING AND TECHNOLOGY

AUTONOMOUS

Managed by the Malankara Catholic Educational Society of the Major Archdiocese of Trivandrum
Approved by AICTE | Affiliated to APJ Abdul Kalam Technological University | All B.Tech Programmes provisionally Accredited by NBA (since 2016)
Accredited by NAAC with 'A' Grade (CGPA 3.13) (since 2016)

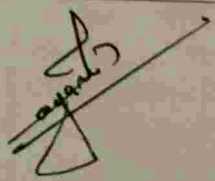
DEPARTMENT OF CIVIL ENGINEERING

STUDENT'S FEEDBACK ON KTU 2015 CURRICULUM

ACTION TAKEN REPORT

Sl. No.	Questions	Student Feedback (%)				Action Taken
1	Depth of syllabus content is	Excellent	Good	Fair	Poor	As majority of the students are of the opinion that the depth of syllabus content is good, the contents will not be increased beyond a limit
		11.5	54.0	32.0	2.5	
2	Whether syllabus is career oriented?	Excellent	Good	Fair	Poor	The course contents may be changed to meet the industry requirements. Internships and industry linked projects may be promoted among the students
		4.9	50.3	34.2	10.6	
3	Should B. Tech CE curriculum have more department specific component in first year to provide a better introduction to Civil Engineering at the very early stage? Yes/No and Comment	Yes		No		More department specific core course may be thought about. This may be included in the future revision, once one cycle of autonomy batch completes its run and based on the feedback from other stakeholders.
		77.8		22.2		
4	How do you rate the sequence of units in the syllabus?	Excellent	Good	Fair	Poor	The sequencing of units may be left almost the same unless there is a vast change in content
		8.0	55.3	33.7	3.0	
5	Should there be more computational / programming /simulation components in B. Tech CE curriculum (Theory and Lab courses)? Yes/No and Comment	Yes		No		The existing course Advanced Computational Techniques and Optimization may be replaced with two different courses on Advanced Computational methods and Optimization Techniques in Civil Engineering.
		68.3		31.7		
		7.5	54.8	35.7	2.0	

6	How do you rate the objectives stated and relevance to the course content	Excellent	Good	Fair	Poor	The course objectives may be defined, keeping in mind the industry requirements and upcoming trends
		7.5	54.8	35.7	2.0	
		Yes		No		Design project may be retained in order to invoke design thinking in students. A course on Design Engineering may be introduced in the second year to facilitate innovative thinking. Possibility of adding a mini project may be thought about in the future revisions.
		73.9		26.1		
8	Do you agree in having more humanities and social science components like Professional Communication, Professional Ethics, Constitution of India, etc. in our engineering curriculum? Suggest the topics/courses that you think are important.	Yes		No		Apart from the courses Life Skills and Professional Communication which are already there in the current KTU 2015 curriculum, new courses on Professional Ethics and Constitution of India may be introduced
		60.7		39.3		
9	Should the skill development program and life skill course (Communication skill, coding skill etc.) begin from the first year itself, so that they become well	Yes		No		The course on Life Skills may be shifted from the second year to the first year. Instead a course on Design Engineering may be introduced in the second year.
	Comment	90		10		
10	Which academic activities / mode of delivery do you appreciate the most	Majority of the students opted for Chalk and Talk, Peer group activity, Power point Presentations, Microprojects.				While framing the syllabus, care may be taken to include topics or term assignments on which innovative teaching methodologies can be adopted.


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MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

ALUMNI FEEDBACK ON KTU 2015 CURRICULUM

ACTION TAKEN REPORT

Sl. No.	Questions	Student Feedback (%)				Action Taken
1	Depth of syllabus content is	Excellent	Good	Fair	Poor	As majority of the students are of the opinion that the depth of syllabus content is good, the contents will not be increased beyond a limit
		11.6	60	25.3	3.2	
2	Whether syllabus is career oriented?	Excellent	Good	Fair	Poor	A course on construction technology and management may be introduced as a core course. Syllabus of the courses may be modified to suit the current industry requirements. Internships and industry linked projects may be promoted among the students.
		4.2	36.8	41.1	16.8	
3	Should B. Tech CE curriculum have more department specific component in first year to provide a better introduction to Civil Engineering at the very early stage? Yes/No and Comment	Yes		No		More department specific core course may be thought about. This may be included in the future revision, once one cycle of autonomy batch completes its run and based on the feedback from other stakeholders.
		74.5		25.5		
4	How do you rate the sequence of units in the syllabus?	Excellent	Good	Fair	Poor	The sequencing of units may be left almost the same unless there is a vast change in content
		6.3	64.2	29.5	0.0	
5	Should there be more computational / programming /simulation components in B. Tech CE curriculum (Theory and Lab courses)? Yes/No and Comment	Yes		No		The existing course Advanced Computational Techniques and Optimization may be replaced with two different courses on Advanced Computational methods and Optimization Techniques in Civil Engineering.
		78.7		21.3		

6	How do you rate the objectives stated and relevance to the course content	Excellent 5.3	Good 57.9	Fair 33.6	Poor 3.2	The course objectives may be defined, keeping in mind the industry requirements and upcoming trends
7	Should design project be replaced with a mini project to get an exposure before the final year project?	Yes 83.3	No 16.7	Design project may be retained in order to invoke design thinking in students. A course on Design Engineering may be introduced in the second year to facilitate innovative thinking. Possibility of adding a mini project may be thought about in the future revisions. Mini project may be introduced in minor and honours course as of now.		
8	Do you agree in having more humanities and social science components like Professional Communication, Professional Ethics, Constitution of India, etc. in our engineering curriculum? Suggest the topics/courses that you think are important.	Yes 73.5	No 26.5	Apart from the courses Life Skills and Professional Communication which are already there in the current KTU 2015 curriculum, new courses on Professional Ethics and Constitution of India may be introduced		
9	Should the skill development program and life skill course (Communication skill, coding skill etc.) begin from the first year itself, so that they become well equipped for industry/placements at the time of graduation? Yes/No and Comment	Yes 92.5	No 7.5	The course on Life Skills may be shifted from the second year to the first year. Instead a course on Design Engineering may be introduced in the second year.		
10	Which academic activities / mode of delivery do you appreciate the most	Majority of the students opted for Chalk and Talk, Peer group activity, Power point Presentations, Micro projects.			While framing the syllabus, care may be taken to include topics or term assignments on which innovative teaching methodologies can be adopted.	

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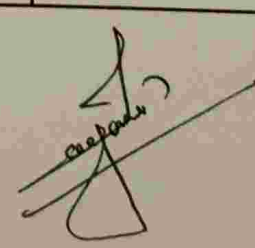
DEPARTMENT OF CIVIL ENGINEERING

EMPLOYER FEEDBACK ON KTU 2015 CURRICULUM

ACTION TAKEN REPORT

Sl. No:	Question	Employer Feedback					Action Taken
		Excellent	Very Good	Good	Fair	Poor	
1	Technical knowledge and ability to apply it	16.7%	66.7%	16.7%	0	0	Initiatives are taken to improve the consultancy in the department and students shall be made part of the consultancy projects to improve their technical knowledge and problem solving ability
2	Creativity and problem-solving ability	16.7%	66.7%	16.7%	0	0	Design project may be retained in order to invoke design thinking in students. A course on Design Engineering may be introduced in the second year to facilitate innovative thinking.
3	Integrity of character and commitment to the profession	50%	50%	0	0	0	Apart from the courses Life Skills and Professional Communication which are already there in the current KTU 2015 curriculum, new courses on Professional Ethics and Constitution of India may be introduced
4	Oral and written communication skills	66.7%	33.3%	0	0	0	Courses like Professional Communication shall improve the oral and written communication skills
5	Ability to work independently	16.7%	66.7%	16.7%	0	0	Students are encouraged to work in team and as an individual. Project evaluation rubric gives weightage to student's ability to function in a team and as an individual
6	Ability to function in a team	100%	0	0	0	0	
7	Organizational, leadership and management skills	50%	50%	0	0	0	
8	Sense of social, moral and ethical responsibilities	66.7%	33.3%	0	0	0	Apart from the courses Life Skills and Professional Communication which are already there in the current KTU 2015 curriculum, new

							courses on Professional Ethics and Constitution of India may be introduced
9	Willingness to learn new things and adapt to technological changes	50%	50%	0	0	0	Initiatives are taken to improve the consultancy in the department and students shall be made part of the consultancy projects to improve their technical knowledge and problem solving ability
10	Ability to manage stress and to respond to the changing requirements	16.7%	33.3%	50%	0	0	Content of courses like Life Skills shall be defined to make students able to manage stress
11	Overall quality of students from MBCET employed in your organization	33.3%	50%	16.78%	0	0	Initiatives are taken to improve the quality of students by encouraging them to participate in onsite projects
12	Overall satisfaction with the curriculum	0	33.3%	50%	16.7%	0	The course objectives may be defined, keeping in mind the industry requirements and upcoming trends
13	Specific Comments on the Improvement of Curriculum:						The autonomy curriculum shall be framed giving more importance to internships/ industrial visits/ industrial training. Training on software shall be improved and initiatives shall be taken to introduce a course on Software Engineering Lab in future revisios to increase the knowledge of students on software used in the industry.
a	Increase the industrial training period to at least one month in two semesters each and the faculty need to ensure that the students are attending the same						
b	Site visits and industrial training should be incorporated so that students understand the relevance of theory taught to them						
c	Implement practical skill and additional value added sessions and include software updates on designing and drafting along with current economy statistics that covers Estimation and costing with recent and valid data						


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Department of Computer Science and Engineering

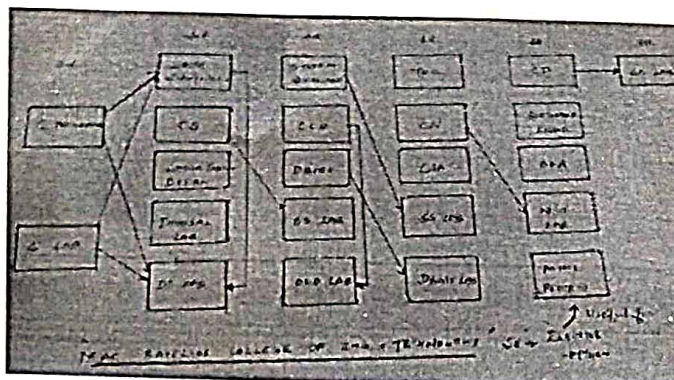
Action taken report on Curriculum feedback 2020-21

Stakeholder	Suggestions
Alumni	<ul style="list-style-type: none">• Online courses may be provided free of cost to students by collaboration with college.• Guide students to attend coding competitions and hackathon• Give opportunities to students to participate and motivate them for outside interactions.• Try to incorporate workshops and hackathons as a part of curriculum rather than weekends.• May promote students to do research-oriented activities.• Create exposure on how to access and explore research papers in early semesters.• Make students understand relevance of interdisciplinary subject in our area• Promote students to write research papers.• Suggestion for including more practical assignments.• May include questions outside of the normal curriculum promoting exposure to new concepts that may equip students for the future.• May include questions that make students understand the relevance of studying the subject.
Parent	<ul style="list-style-type: none">• Suggested to continue with the curriculum as prescribed by KTU.• Pointed out whether all the electives in the curriculum will be offered to the students.• Suggested that the growth of students in smaller companies is more beneficial than larger companies.• Suggested that the students lack communication skills.• Medium of communication inside campus should be in English.• Suggested about the presentation skill of students.• Confidence building sessions to be incorporated.• Ethics should also be made part of the curriculum.• Moving from KTU to Autonomy all the policies which we follow right now should be in the same way. Focus mainly on Discipline• No relaxation should be done from exam point of view.• Need to revise and reaudit the expert areas of our department.

<p>Experts (Academicians and Industry)</p>	<ul style="list-style-type: none"> • Selection of elective courses from the bucket system can refrain enthusiastic students from opting their subjects of interest. • Inconsistency of programme related courses in first year should be readdressed. • Provision of combining basic science courses can be analysed for future inclusion. • Subject Experts welcomed the first-year credit division of 17 in semester1 and 2. • Programming in Python can be included as common subjects for all B.Tech programmes as it can be helpful in the course of time for their technology development. • Knowledge gathering on Programming paradigms is required for the graduates to excel in the industry. • CSE programme students can be benefitted from opting the department offered minor courses should also be analysed for future reference. • It was suggested to check the prerequisite of minor and open elective courses offered by the department like Introduction to Mobile Computing (open elective). • More emphasis on project work can be included in the last year by minimising the course, giving ample time to complete student projects. • All M.Tech Courses should include hands-on provision or project based learning. • Can reconsider the curriculum to incorporate only seminar and project phase in the second year. • Subject expert pointed out incompetency in the assessment of blooms taxonomy levels- evaluate and create. • Tutorials may be conducted by sharing the questions beforehand and providing problem solving videos after the session. • Teaching assistant may be assigned to monitor tutorial classes. • Recommended to use the tool Xv6 for Operating System Lab.
<p>Students</p>	<ul style="list-style-type: none"> • May include core subjects that are relevant to industry like AI, ML, Cyber security. • Updating the syllabus should include the latest text books and latest technologies. • Weekly updates of current technologies may be provided. • Practical oriented approach in teaching core course subjects (Lab for core subjects). • Create awareness of the importance of projects from the early semesters so that students equip themselves with new technologies and focus towards a specialization of their interest. • More time may be given for doing projects. • Provide industry interaction to students by collaborative activities. • Promote student exchange programs. • MOOC Course can be made part of curriculum and also encourage students to take up online courses for exploring specialized areas.

Faculty

- All the faculties strongly suggested that it is difficult to handle theory along with lab (lab will lag and hence essential programs will be avoided) except for programming subjects (in which case it is essential), hence theory should always be taken prior to the lab session.
- A detailed discussion was done on each subject's prerequisite and a detailed flow diagram of different subjects was formulated for semesters S3 to S7.



- Include OS Lab in 4th sem which should include OS experiments and System software lab in 5th sem containing SS Expts. There is no need for the FOSS Lab
- Microcontroller and Microprocessor should be included atleast as an elective subject.
- Include OOD lab in 4th sem along with OOD and implement using Java as it will be useful in the industry
- Include Python (advanced topics like classes) as electives in 5th sem so that it will be helpful for students to do mini projects.
- Instead of Computer Organization in the 3rd sem include Computer System Architecture in 5th. Include Python as open elective (with basic topics) for other branches.

Action Taken report: 2020 Curriculum

- Coursera free courses were provided to students and faculties
- Coding competitions conducted by CSE every year, Hackathon (Ingress 2021) organized by ACE (Department Association) and CSI(Computer Society of India)
- Final year UG students were encouraged to do research papers and publish in conferences and journals
- Orientation conducted for freshers and final years on current trends
- Talks conducted by CSE faculty in other departments to create awareness of new technologies
- Outcome based education provided for certain core subjects
- MoU with IBM, IBM specialty Lab provided courses on emerging trends, talks by Alumni and webinars by research groups organized
- MoU with GTech to initiate technical activities and internships
- As per the suggestion from BoS the elective course Data Communication was replaced by Advanced Data Communication.
- Virtual Lab using simulation software has been included along with Computer organization Architecture Course.

It was decided to discuss the other suggestions from the stakeholders and implement in subsequent curriculum revision in the year 2022.

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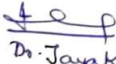
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Students Feedback Action taken Report during the Academic Year 2020-2021

- To make the students aware of latest technologies, we have introduced skill development programmes which includes Arduino programming, python programming, etc.
- For enriching the logical ability and programming skills of students, the course Programming in C is introduced in second semester. Programming lab is also incorporated in the same course. To bridge the gap for students coming from biology background, we have introduced a bridge course covering programming concepts also.
- In order to make the students capable of working in multidisciplinary areas, we have introduced B.Tech Minor degree in other disciplines like EEE, CSE, ME and CE. The students have an option to select any of sub areas from the available baskets.
- To incorporate project-based learning, we have introduced micro-projects and Simulation assignments in a few courses. from this academic year onwards.
- Life Skills, Constitution of India, Professional Communication, Professional ethics are added to improve their Professional qualities, Communication Skill and make them aware of Indian constitution. In addition to this, we have introduced a value added course on Communicative English for first year students


Dr. Jayakumar J

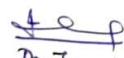
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Alumni Feedback Action taken Report during the Academic Year 2020-2021

- Introduced skill development programs like Introduction to Arduino programming, Introduction to python programming, etc.
- Programming in C is introduced in second semester for enriching the programming skills of students. To bridge the gap for students coming from biology background, we have introduced a bridge course covering programming concepts also.
- To make the students capable of working in multidisciplinary areas, we have introduced BTech Minor degree in other disciplines like EEE, CSE, ME and CE.
- To incorporate project-based learning, we have introduced micro-projects and Simulation assignments in a few courses from this academic year onwards.
- Introduced course on Communicative English for first year students to improve their communication Skill.
- Courses on Life Skills, Constitution of India, Professional Communication, Professional ethics are added to improve their professional qualities, communication skill and make them aware of Indian constitution.


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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Employer Feedback Action taken Report during the Academic Year 2020-2021

- Programming in C is introduced as part of the curriculum in second semester for enriching the programming skills of students.
- Introduced skill development programs like Introduction to Arduino programming, Introduction to python programming etc.


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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Feedback Action taken Report during the Academic Year 2020-2021

- To include activities based on Design Thinking and idea generation in Life skills course, the faculty have conducted presentations based on problem identification and design thinking; Conducted Psychometric test for evaluating stress management;
- A percentage of assignment mark has been allotted for simulation assignments for few courses such as Network Theory, Introduction to Signals and Systems, Electronic Circuits, Analog communication (Minor).
- Syllabus has to be revised during next revision for few courses in B.Tech such as Biomedical Engineering, Scientific Computing Lab, Digital Signal Processing, Applied Electromagnetic Theory, Microwave and Radar Engineering, Optical Communication, Computer Communication and Control systems.
- Syllabus has to be revised during next revision for few courses in M.Tech such as Advanced Digital Communication, Research Methodology and RF MEMS.


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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Summary of Curriculum Feedback 2020-21

The following suggestions were put forward by the Stakeholders on the curriculum of the academic year 2020-21

- More emphasis should be provided for practicals and value added courses to bridge the gap between industry and academics.
- The usage of softwares like MATLAB, ANSYS, PSPICE etc, can be included in the course to provide a better insight of the topics in the real-time applications and develop the simulation skills.
- Lab courses on LTSpice simulation software, Eagle CAD, PCB Designing etc, need to be incorporated into the curriculum in such a way that it can enhance the learning values, analytical abilities, thus equipping the students to apply the knowledge in designing electronic hardware for the final year projects.
- Courses relating to social skills development as well as social awareness need to be included in light of the mental health and struggles faced by many students.
- Awareness sessions/ Practical activities through associations like NSS, UBA need to be organized to inculcate aspects of Human rights, Importance of Citizen rights etc.
- The curriculum should include entrepreneurship courses which help the students to start their own entrepreneurial ventures.
- Emerging trends like IoT, Data analytics, Machine learning, Artificial Intelligence and Data science etc, should be included or at least workshops regarding the emerging trends should be provided to enhance the understanding of students on these topics.
- Lab equipment needs to be updated to meet industry standards, so that students get more familiarity when reaching the industry.
- Equal importance needs to be given to both theoretical as well as practical knowledge. This will help the students to become more equipped for taking up core jobs.
- The curriculum revision should be as per the needs of the industry and enhance employment opportunities.
- Design project in the pre final year is good to give an idea on problem solving skills. This helps to improve the drawbacks and make a better project. Suggestions are given to include mini projects in the beginning of the 2nd year to improve the difficulties faced at the later stage.
- Courses like industrial management, industrial mentorship for startups and projects, laws clauses regarding industrial development, mental and physical health management, how to deal with failure, strategy thinking skills need to be included in the curriculum.
- The current curriculum is vast.

The actions taken based on the suggestions put forward by the Stakeholders are as follows:

- New curriculum is developed in such a way that it includes Electives in AI, Machine Learning, IoT etc. Also workshops, Add on programmes, Certificate courses on these areas are conducted so as to develop skills in students and to make them more employable.
- Inclusion of more electives, B. Tech Minors, B. Tech Honors in diverse specializations and emerging trends both in Core and other areas included in the Autonomy curriculum.



MAR BASELIOS


COLLEGE OF ENGINEERING AND TECHNOLOGY

A U T O N O M O U S

(Managed by the Malankara Catholic Educational Society of the Major Archdiocese of Trivandrum)
Approved by AICTE and Affiliated to
APJ Abdul Kalam Technological University
All B.Tech Programmes provisionally Accredited by
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July'16 Accredited by NAAC with 'A' Grade (CGPA
3.13)

- Courses are to be selected in such a way that it is industry oriented and also it incorporates the recent trends in Electrical and Electronics Engineering. Courses on Electrical Vehicles, IoT, Industrial Automation etc. serve the purpose.
- The curriculum is to be updated on a regular basis, incorporating the recent advancements, feedback from stakeholders. So that the students are exposed to real time problems and industrial experience through Internships.
- Students are to be encouraged to undergo internships at renowned industries, Govt organizations like KSED, KEL etc to get industrial experience.
- Skill Development Programs and Value Added courses to enhance hardware and technical skills are added as compulsory courses driven by the Corporate Relations Department and IEDC.
- Hands-on sessions, Workshops are arranged by the Department association Illumina, Professional societies like IET, IEEE PES to train students in essential softwares like DIALux Lighting Design etc.,
- For first semester students, a non-credit course on Communicative English is also included in the Autonomy scheme to make students practice with communication by providing them various activities.
- Subjects like Professional Communication, Constitution of India, Management for Engineers, Universal Human Values are included in the Autonomy scheme from semester 2 onwards highlighting the more Humanities and Social Science components in the Engg. Curriculum.
- Through the Directorate of Corporate Relation, Fundamental and Advanced Courses by Wadhwani Foundation are provided to students for enhancing and encouraging Entrepreneurs.
- Research groups and cells such as Dynamics and Control, Power Electronics, Electric Vehicles etc, are initiated to encourage research and job opportunities. Alumni interaction is also enhanced through activities of department association and professional bodies.
- In the proposed new curriculum, micro projects are to be included in the laboratories from semester 3 onwards to make students practice on designing and implementation of circuits.
- Students are encouraged to do internships during the semester breaks so that they have better insight on the practical aspects of the equipment or components learned from the theoretical classes.
- As per the new curriculum, the coverage/scope may be reduced a bit at the same time more emerging area topics are included in the syllabus that makes courses more interesting.

Compiled by Professor & Head, Department of Electrical and Electronics Engineering


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Department of Mechanical Engineering
Action taken report on Curriculum feedback 2020-21

Stakeholder	Suggestions
Alumni	<ul style="list-style-type: none">Curriculum to give importance to fundamentals and incorporate importance to courses such as Energy security and management, engineering management etc.Incorporation of add on courses on Automation, IoT, Robotics, ML, Python were suggested.
Students	<ul style="list-style-type: none">The students suggested to include more simulation and programming, as these have become the need of the hour for modern mechanical engineering skills.The students suggested to add more interdepartmental subjects which will help in gaining an exposure to subjects in other disciplines.More skills should be provided to students other than what they learn from text books like programming skills, technical skills (practical application).The skill development programmes and life skill course (Communication skill, coding skill, circuit analysis etc.) should be started in 1st year. Providing knowledge in these courses will help the students to sort out their future in a better way.
Experts from Industry and Academia	<ul style="list-style-type: none">Inclusion of Environmental Engineering under Mandatory Courses as given in the AICTE model curriculum of UG Programme.The number of hours for courses including FEM, CFD etc. can be increased to four while maintaining the credits as three.Practical Design problems relevant to industry may be included in the PG curriculum instead of seminar.Some of the fundamental courses for Machine Design like Principles of Product Design, Statistical Techniques in Design or Design of Experiments, Reliability Engineering, Failure Analysis are missing in the present curriculum.
Faculty	<p>Introduction of new courses were suggested by faculty members of MED in MBCET.</p> <ul style="list-style-type: none">The suggestions were made from production stream include 3D Printing, Design and Analysis of Experiments and Robotics and Automation.Thermal stream suggested the inclusion of Hydrogen Fuel cell Technology to the syllabusMachine Design stream suggested Finite Element Analysis, Biomechanics, Introduction to Nonlinear dynamics and Kinematics & Design lab; Adams Software


	<ul style="list-style-type: none"> • Fundamentals of Data Science and Advanced Operation Research lab are the subjects suggested by Industrial Stream. • For M.Tech in machine design, the faculty suggested to include the following subjects. New subjects that may be introduced Data Science for Engineers, Basics of Artificial Intelligence, Business Analytics, Operations Research, Cost Management of Engineering Projects, English for Research Paper Writing, Disaster Management, Value Addition, Constitution of India, Pedagogy Studies • Numerical Simulation Lab was also suggested to be included in Mtech Machine Design curriculum.
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Action taken report: 2020 Curriculum

New elective courses are being offered by MED in 2020 UG curriculum

- Hybrid and Electric Vehicles
- Introduction to Business Analytics
- Decisions with Metaheuristics
- Artificial Intelligence and Machine Learning
- Industrial Internet of Things
- Data Analytics for Engineers
- Robotics and Automation.

It was decided to discuss the left over suggestions from the stake holders in the department curriculum constitutive cell and implement the possible one in the subsequent curriculum revision in the year 2022.


 13/7/2021
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