

MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous College affiliated to APJ Abdul Kalam Technological University)

MAR IVANIOS VIDYANAGAR, NALANCHIRA, THIRUVANANTHAPURAM-695 015

MESSAGE ON B.TECH CURRICULUM REVISION 2023

It is generally accepted that for a structured study programme the Curriculum is a standards-based sequence of planned experiences where the students practice and achieve proficiency in content and applied learning skills, in a given timeframe. Thus the Curriculum governs the teaching-learning process so that every student has the access to rigorous academic experiences. The structure, organization, and considerations in a curriculum are created in order to enhance student's learning and facilitate instruction. Curriculum will have to include the necessary goals, methods, materials and assessments to effectively support instruction and learning.

Continuous revision of the Curriculum emerges as the pertinent aspect of the academics in the autonomous Institutions because it is through these revisions the Institutions can imbibe and embed new content, new pedagogy and new evaluation tools into the curriculum to provide a deeper and highly rewarding learning experience for the student. These pursuits should add value to the student as a learner and make him/her employable and socially committed.

Our College has become autonomous in 2020. The first curriculum was adapted from the running curriculum of the affiliating University. A fully re-designed new curriculum for the M.Tech Programme was implemented in 2022-2023. In the year 2023-2024, we envisage the revision of the B.Tech Curriculum and Scheme with some innovations so as to enable effective learning. We would like to evaluate our plans by seeking opinion from our stakeholders and well-wishers.

In the upcoming B.Tech Curriculum 2023, one student has to earn 163 credits in the 8 (eight) semesters so as to become eligible for the Degree. 160 credits will be from the academic learning through the classroom activity, as existing, while the three value added credits have to be earned from the co-academic and extra academic activities outside the classroom, and through the learning/certification outside the Curriculum. In the professional degree programmes, by and large, the student will have to put not less than two hours of self-study in a week outside the classroom for each of the credit hour of the lecture based courses and more for the project based courses as part of the classroom learning. Extra learning for value addition is either to address the individual's interest or for adding value to the basic professional knowledge. This extra learning will be recognized by granting credits if that is recommended by the Departments. Therefore, this provision of three credits can be deemed as a measure to encourage the students to participate in a variety of activities and get equipped with the skills needed for facing the challenges in the modern world in a better way. This will also lead to the recognition of the efforts undertaken by the student through such activities to complement/supplement their learning, without losing the rigour of the core engineering education, envisaged in the curriculum.

We are also pursuing the means for incorporating best practices by keeping the policy directions given in the National Education Policy 2020 in perspective. This will enable and facilitate multi-disciplinary learning, as expected in NEP, so that the engineering students will become more innovative and better employable in their future life.

In addition to the basic mandatory 163 credits, there will be options for Minor Degree and Honours similar to what is available in the running Curriculum. The credits to be earned is proposed to be kept in the range 15 to 20 and will be finally aligned with the requirements, if any, to be specified by the affiliating University.

To make it more clear, the option for Minor is meant for cross-disciplinary specialization for making the students fit for the 21st century jobs. Under these provisions, a student studying in Civil Engineering, Mechanical Engineering or Electrical Engineering Degree Programmes will be able to get a Minor degree in topics like Artificial Intelligence, Machine Learning, Electronics Engineering, etc. All the branches have this provision for interdisciplinary studies for cross fertilizing the knowledge and skills. However, this Minor specialization requires additional credits to be earned by the student over and above the basic requirements of 163 credits within the four years and maintain good academic progress.

On the other hand, Honours is a provision for deeper specialization in one's own discipline. For example, a student in Computer Science and Engineering can specialize in Image Processing, which can be extended to any engineering domains in their career or higher studies. This specialization also requires additional credits to be earned by the student over and above the basic mandatory requirements of 163 credits. Also, the student will have to progress without the backlogs. There is a tremendous benefit for those who secure the B.Tech with Honours in terms of higher and better placement and the opportunities for higher studies because of the extra credits earned.

We trust that the revision, which is underway, is being built on a value added structure that will include the options for learning one's discipline in a more engaged and integrated manner and also get enriched by the multi-disciplinary knowledge as well, on the go. The "skill" component which spans across the multiple dimensions like social skills, technical skills, IT skills, interpersonal skills and so on are expected to be developed through self-driven and supervised/proctored activities within and outside the classroom.

We intend to bring in more active teaching-learning mechanisms like lab integrated courses, project based learning and the work integrated learning like internships, etc. in the new curriculum. The design will be finalized through extensive consultations and discussions with the experts and our stakeholders. We are also open to suggestions and feedback from all the other stakeholders and well-wishers, who are otherwise not directly involved in the curriculum related discussions on campus.

A brief outline of the proposed curriculum is given as Annexure to this message for favour of information of all concerned. This is subject to final approval by the statutory bodies of the College. Please scroll down to see the proposed plan.

Any feedback on the existing curriculum and the gaps to be addressed in the new curriculum can be sent to the **Chairman of the Curriculum Committee** by email to curriculum2023@mbcet.ac.in or through WhatsApp to +91-8281145869 to the Principal.

Thanking you

Sd/-

Principal

Place: Mar Ivanios Vidyanagar

Date: 25.06.2023

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Annexure A

Proposed General Structure of the new UG Curriculum 2023

Definitions:

Programme: *Programme* means a Degree Programme. Eg. B.Tech Civil Engineering

Course: *Course* means one single course in a Programme. There are different types of courses like Theory, Laboratory, Seminar, Elective, Project, etc.

Credit: *Credit* is the weight associated with the learning expected to be happening for a course. It is a widely accepted nomenclature. One credit hour is of 50 minutes duration for lecture based courses.

Self-study: Student will have to spend enough time outside the classroom for self-study so as to ensure adequate and proper learning. Not less than two hours of self-study work is needed for every credit hour of class in a week.

Knowledge Segments and Credits

The knowledge content of a B.Tech Programme is divided into multiple knowledge segments by considering the learning needed for the graduate. The courses are organized based on these knowledge segments so that the learning will be progressive, immersive and deeply engaging. The segments are termed as Humanities, Basic Science, Programme Core, Electives and so on. There will be nine such categories for the courses in the proposed curriculum also and are given in the Table below. This kind of generalization of the content has been in vogue in the Indian engineering education framework and also in many leading autonomous institutions. This structure provides the guidelines for developing the curriculum of a particular Programme with adequate focus on the core competency to be developed in that particular Programme with interspersed knowledge in the related domains as well. It is believed that the multiplicity of the such knowledge segments in the curriculum would allow the students to acquire enough knowledge and skills for broadening their scope in building a good career in their life rather than narrowing down the job prospects.

Table 1: Credit distribution and the Knowledge Domains

Sl. No.	Category	Category Code	Credits in the Proposed 2023 Curriculum	% Distribution (Based on 160 credits)
1	Humanities and Social Sciences including Management Courses	HSC	6-9	3.75-5.6%
2	Basic Science Courses	BSC	26	16.25%
3	Engineering Science Courses	ESC	19-22	11.875-13.75%
4	Programme Core Courses,	PCC	66-70	41.25-43.75%
5	Programme Elective Courses	PEC	18	11.25%
6	Institute Elective Courses	OEC	6	3.75%
7	Seminar, Mini Project, Project Work and Comprehensive Course Viva Voce	PWS	12-13	7.5-8.125%
8	Mandatory Non-credit Courses (P/F) with Grade	MNC	---	---
	Credits to be earned through Classroom Activity		160	100%

9	Mandatory Student Activities (P/F)	MSA	3	
Total Mandatory Credits to be earned for Degree			163	-
	Value Added Courses (Optional) – To earn Honours/Minor	VAC	15	

Highlights

1. Greater emphasis on the advanced and emerging topics without ignoring the fundamentals.
2. Focus on the IT tools and computer based drawing, drafting, analysis, design, etc.
3. The provision of three value added Credits (over and above the 160 credits) for the activities outside the classroom, which can be earned broadly from the following three domains during the four years of study: (to be finalized)

a)	Participation in professional, co-curricular and extracurricular activities	1 Credit
b)	Student driven Certification in the liberal stream of extra-academic activities like music, foreign language, etc. and the certificates obtained for NSS, NCC, and others.	1 Credit
c)	Institute driven Certification in the professional stream of co-academic activities like IPR, Entrepreneurship, Small Business Management, Accountancy, Project Management, etc.	1 Credit

4. Lab integrated Courses
5. Project Based Courses
6. Mandatory Internship, Seminar/Mini Project
7. Options for break of study for starting Startups after two years.
8. Possibility of Minor Degree in other disciplines
9. Option for Degree with Honours