BTech Course Structure

New structure for BTech (Mechanical Engineering)

Semesters 1 & 2

Sl. No.	Sem	Type	Course Code	Course Name	Credits	Semester credits
1	I	IC	ICXXX	Calculus	2	
2	I	IC	ICXXX	Complex variables and vector calculus	2	
3	I	IC	IC140	Engineering Graphics for Design	4	
4	I	IC	IC152	Introduction to Python and Data Science	4	21
5	I	IC	ICXXX	IC Core basket – 1	3	
6	I	HSS	HSS-1	HSS Course	3	
7	I	IKS	YYXXX	Ikshma Course	3	
1	II	IC	ICXXX	Linear algebra	2	
2	II	IC	ICXXX	ODE and integral transforms	2	
3	II	IC	IC161	Applied Electronics	3	
4	II	IC	IC 161P	Applied Electronics Lab	2	
5	II	IC	IC252	Probability and Statistics	4	22
6	II	IC	IC240	IC Core Basket/ Rigid Body Mechanics	3	
7	II	IC	ICXXX	Foundations of Design Practicum	4	
8	II	IC	IC221P	Physics Practicum	2	

- One HSS in sem 1
- IC basket 2 - Rigid body mechanics in sem 2 as a compulsory course
- The template for first semester may be modified depending on AD Courses' decision for all batches

Semesters 3 & 4

Sl. No.	Sem	Type	Course Code	Course Name	Credits	Semester credits
1	III	IC	IC272	Machine Learning	3	
2	III	DC	EEXXX	Electrical systems around us	3	
3	III	DC	ME210	Fluid Mechanics	3	
4	III	DC	ME2xx	Product Realization Technology	3	22
5	III	DC	ME2xx	Engineering Thermodynamics	4	
6	III	DC	ME206	Mechanics of Solids	3	
7	III	DC	IC241	Materials Science for Engineers	3	
1	IV	IC	IC201P	Design Practicum	3	
2	IV	DC	MEXXX	Reverse engineering	1	
3	IV	DC	ME205	Machine drawing	3	
4	IV	DC	ME308	Manufacturing Engineering 1	3	20
5	IV	DC	ME303	Heat Transfer	3	
6	IV	DC	ME210P	Fluid Mechanics Lab	1	
7	IV	DE	DE-1	Discipline Elective	3	
8	IV	HSS	HSS-2	HSS Course	3	

- Electrical systems around us is a DC for Mech
- Material science in Sem 3 to sync with the new Materials BTech program structure
- One HSS per year is suggested in the template

Semesters 5 & 6

Sl. No.	Sem	Type	Course Code	Course Name	Credits	Semester credits
1	V	DC	ME305	Design of Machine Elements	4	
2	V	DC	ME307	Energy conversion devices	3	
3	V	DC	ME309	Theory of machines	4	
4	V	DC	ME310	System Dynamics and Control	3	22
5	V	DC	MEXXX	Manufacturing Engineering 2	3	
6	V	DC	ME311P	Design Lab 1	1	
7	V	DC	MExxxP	Heat Transfer Lab	1	
8	V	DE	DE-2	Discipline Elective	3	
1	VI	DC	ME312P	Design lab 2	1	
2	VI	DE	DE-3	Discipline Elective	3	
3	VI	DE	DE-4	Discipline Elective	3	
4	VI	HSS	HSS-3	HSS	3	17
5	VI	FE	FE-1	Free Elective	3	
7	VI	ISTP	ISTP	ISTP	4	

- Core courses almost done by 5th semester

- With the knowledge of core curriculum, students can take advanced DE and FE in Sems 6-8

- Given that students get busy with job interview preparation, Sems 6-8 are less loaded than the first 5 semesters.

Semesters 7 & 8

Sl. No.	Sem	Type	Course Code	Course Name	Credits	Semester credits
1	VI/VII	IC	IC010	Internship	2	
1	VII	DE	DE-5	Discipline Elective	4	
2	VII	FE	FE-2	Free Elective	3	
3	VII	FE	FE-3	Free Elective	3	18
5	VII	MTP	-MTP 1	-MTP 1	3	
6	VII	HSS	HSS-4	HSS	3	
1	VIII	FE	FE-4	Free Elective	3	
2	VIII	FE	FE-5	Free Elective	3	
3	VIII	FE	FE-6	Free Elective	3	18
4	VIII	FE	FE-7	Free Elective	4	
5	VIII	MTP	-MTP 2	-MTP 2	5	

- Given that students get busy with job interview preparation, Sems 6-8 are less loaded than the first 5 semesters.

- There is a room to take 3 extra credits per semester to catch-up with any backlogs.

Notes and potential issues

Notes

- This is a suggestive template, as the students are free to take courses as they like as long as the dependencies are maintained and the total number of credits are completed.

- It is suggested that the order suggested for DC must be maintained as they will be offered in the semesters mentioned. Free and Discipline electives can be taken in any order.

- All ME and EN courses will be Discipline Elective courses. If the FAs feel fit, they can suggest (with reasoning) to add a non-ME and non-EN course into the DE list.

Potential issues

- Will the proposed structure allow scope for various Minors?

- Can the students fit in a 6-month internship with this structure?

- Any other issues?