



B.Tech Curriculum

On July 1, 2015, IIT Madras senate approved the following new curriculum for B.Tech program at the CSE Department of IIT Madras. This is applicable for the batch of students admitted in July 2015 onwards. Here is some notation : S - Science, E - Engineering, H - Humanities, P - Professional Core+Electives, F - Free Electives. A few relevant links (1) [Definition of a credit](#), (2) [Industrial Training](#), (3) [Honours Program](#), (4) [Undergraduate Research Courses](#).

B.Tech Program Credit Structure									
Sem.	S	E	H	P (C)	P (E)	F	Core Total	Recomm. Electives	Sugg. Total
Sem.1	34	22	0	0	0	0	56		56
Sem.2	23	17	0	10	0	0	50		50
Sem.3	9	0	9	29	0	9	47	1F	56
Sem.4	9	0	0	42	0	9	51	1F	60
Sem.5	0	0	0	39	12	9	39	1P+1F	60
Sem.6	9	0	0	0	24	27	9	2P+3F	60
Sem.7	0	0	9	0	36	9	9	3P+1F	54
Sem.8	0	0	9	0	12	9	9	1P+1F	30
Winter	0	2	0	0	0	0	3		3
Summer	0	4	0	0	0	0	3		3
Total	84	45	27	120	84	72	276	7P+8F	432

B.Tech (Hons.) Program Credit Structure									
Sem.	S	E	H	P (C)	P (E)	F	Core Total	Recomm. Electives	Sugg. Total
Sem.1	34	22	0	0	0	0	56		56
Sem.2	23	17	0	10	0	0	50		50
Sem.3	9	0	9	29	0	9	47	1F	56
Sem.4	9	0	0	42	0	9	51	1F	60
Sem.5	0	0	0	39	12	9	39	1P+1F	60
Sem.6	9	0	0	0	36	18	9	3P+2F	63
Sem.7	0	0	9	0	36	18	9	3P+2F	63
Sem.8	0	0	9	24	12	9	33	1P+1F	54
Winter	0	2	0	0	0	0	3		3
Summer	0	4	0	0	0	0	3		3
Total	84	45	27	144	96	72	300	8P+8F	468

Additional Requirements/Constraints - B.Tech Curriculum :

- Minimum total number of Credits: 432
- Students should complete a total of 156 credits of electives out of which a minimum of 84 Credits must be completed through CSE Dept. Electives.
- Semesters marked with '*': students should take appropriate number of electives after consulting faculty advisor.
- The students are free to take the elective courses in different semesters, so that the total number of credit hours per semester does not normally exceed 60.
- B Tech final-year project is optional and may be carried out in the CSE Dept. or in any other Department at IIT Madras. If the project is completed in the CSE Dept, it will be considered as equivalent to 24 Department elective credits. If the project is completed outside the CSE Dept, it will be considered as equivalent to 27 Free Elective credits.
- CS1200 is equivalent to MA2060: Discrete Mathematics. CSE students are not allowed to credit MA2060 course as a free elective.

Additional Requirements/Constraints - B.Tech (Hons) Curriculum:

- Minimum total number of Credits: 468
- Students should complete a total of 192 credits of electives out of which a minimum of 120 Credits must be CSE Dept. Electives.
- Semesters marked with '*': students should take appropriate number of electives in consultation with faculty advisor.
- The students are free to take the elective courses in the different semesters, as long as the total credit requirement in electives category is met. Honors students may exceed the 60-credit limit per semester, after discussing with the faculty advisor.
- B. Tech final-year Project is mandatory and must be completed in the CSE Department.
- B. Tech (Honors) students should maintain a CGPA of 8.5 in each semester until graduation.
- CS1200 is equivalent to MA2060: Discrete Mathematics. CSE students are not allowed to credit MA2060 course as a free elective.

The semester-wise core course structure is as follows.

Sem.	Course No.	Course Title	Lecture	Tutorial	Ext. Tut.	Lab	HW Hrs/Wk	Total Hrs/Wk	Credits	Category
1	MA1101	Functions of Several Variables	3	1	0	0	6	10	10	S
1	PH1010	Physics 1	3	1	0	0	6	10	10	S
1	CY1001	Chemistry 1	3	1	0	0	6	10	10	S
1	CS1100	Introduction to Programming	3	0	0	3	6	12	12	E
1	PH1030	Physics Lab 1	0	0	0	3	1	4	4	S
1	AM1100	Engineering Mechanics	3	1	0	0	6	10	10	E
1		Life Skills	0	0	0	0	0	3	0	
1		NSS/NSO/NCC	0	0	0	2	0	2	0	

		Semester 1 : Total	15	4	0	8	31	61	56	
Winter		Workshop (winter)	0	0	0	3	0	3	3	E
Sem.	Course No.	Course Title	Lecture	Tutorial	Ext. Tut.	Lab	HW Hrs/Wk	Total Hrs/Wk	Credits	Category
2	MA1102	Series and Matrices	3	1	0	0	6	10	10	S
2	PH1020	Physics 2	3	1	0	0	6	10	10	S
2	CS1200	Discrete Mathematics for CS	3	1	0	0	6	10	10	P
2	ME1120	Engineering Drawing	1	0	0	3	3	7	7	E
2	EE1100	Basic Electrical Engineering	3	1	0	0	6	10	10	E
2	CY1002	Chemistry Lab	0	0	0	3	0	3	3	S
2		NSS/NSO/NCC	0	0	0	3	0	3	0	
		Semester 2 : Total	13	4	0	9	27	53	50	
Summer		Workshop (summer)	0	0	0	3	0	3	3	E
Sem.	Course No.	Course Title	Lecture	Tutorial	Ext. Tut.	Lab	HW Hrs/Wk	Total Hrs/Wk	Credits	Category
3	MA2130	Basic Graph Theory	3	0	0	0	6	9	9	S
3		Humanities Elective 1	3	0	0	0	6	9	9	H
3	CS2700	Programming and Data Structures	3	1	0	0	6	10	10	P
3	CS2710	Programming and Data Structures Lab	0	0	0	3	3	6	6	P
3	CS2300	Foundations of Computer Systems Design	3	0	0	0	6	9	9	P
3	CS2310	Foundations of Computer Systems Design Lab	0	0	0	3	1	4	4	P
		Semester 3 : Total(*)	12	1	0	6	28	47	47	
Sem.	Course No.	Course Title	Lecture	Tutorial	Ext. Tut.	Lab	HW Hrs/Wk	Total Hrs/Wk	Credits	Category

4	CS2200	Languages, Machines, and Computation	3	1	0	0	6	10	10	P
4	CS2800	Design and Analysis of Algorithms	3	1	0	0	6	10	10	P
4	CS2600	Computer Organization and Architecture	3	1	0	0	6	10	10	P
4	CS2610	Computer Organization and Architecture Lab	0	0	0	3	3	6	6	P
4	CS2810	Object-Oriented Algorithms Implementation & Analysis Lab	0	0	0	3	3	6	6	P
4	MA 2040	Probability, Stochastic Process and Statistics	3	0	0	0	6	9	9	S
		Semester 4 : Total(*)	12	3	0	6	30	51	51	
Sem.	Course No.	Course Title	Lecture	Tutorial	Ext. Tut.	Lab	HW Hrs/Wk	Total Hrs/Wk	Credits	Category
5	CS3100	Paradigms of Programming	3	0	0	0	6	9	9	P
5	CS3300	Compiler Design	3	0	0	6	6	15	15	P
5	CS3500	Operating Systems	3	0	0	6	6	15	15	P
		Semester 5 : Total(*)	9	0	0	12	18	39	39	
Sem.	Course No.	Course Title	Lecture	Tutorial	Ext. Tut.	Lab	HW Hrs/Wk	Total Hrs/Wk	Credits	Category
6	BT1010	Life Sciences	3	0	0	0	6	9	9	S
		Semester 6 : Total(*)	3	0	0	0	6	9	9	
Summer	CS3666	Industrial Training	0	0	0	0	0	0	0	
Sem.	Course No.	Course Title	Lecture	Tutorial	Ext. Tut.	Lab	HW Hrs/Wk	Total Hrs/Wk	Credits	Category
7		Humanities Elective 2	3	0	0	0	6	9	9	H
7	ID1200	Ecology and Environment	2	0	0	0	4	6	0	S
		Semester 7 : Total(*)	5	0	0	0	10	15	9	
Sem.	Course No.	Course Title	Lecture	Tutorial	Ext. Tut.	Lab	HW	Total	Credits	Category

							Hrs/Wk	Hrs/Wk		
8	HS3050	Professional Ethics	2	0	0	0	0	2	0	H
8		Humanities Elective 3	3	0	0	0	6	9	9	H
		Semester 8 : Total(*)	5	0	0	0	6	11	9	