Department of Engineering Design
Indian Institute of Technology Madras
Notional Credit Requirements for B.Tech. (Engineering Design)

June 2024

Approved in the 308th Senate Meeting held on May 31, 2024, and the 309th Senate Meeting held on June 14, 2024.

Semester	Science	Professional	Engineering+Computing	Humanities	GN Courses	Management
1	20	3	22+3	0	4+4	0
2	9	22	10+3	0	6+4	0
3	10	49	0	0	0	0
4	9	42	0	0	0	9
5	9+9	10	0	9	0	0
6	0	0	0	9	0	0
7	0	0	0	9	0	0
8	0	40 (Internship)	0	0	0	0
Total	**57+9**	**126+40**	**38**	**27**	**10+8**	**9**

Note: Electives are indicated in red font colour. Professional and Free Electives are not included in the above table.

Total Core Credits: 231 (S=57, E+C=38, G=10, P=126)

Total Elective Credits: 168 (S=9, H=27, M =9, PE (Internship)= 40, PE=21, FE=54, G=8)
Professional and Free Elective credits: 115 (Free Elective = 54, Professional Elective: 40+21 = 61).

Please note that the course ED5601 Design Project in Industry (taken by ED Dual Degree students in the 8th semester) would not be offered to those ED Dual Degree students who shift to an IDDD program. They need to take the equivalent 40 credits of courses from the basket of ED professional elective courses to meet the corresponding credit requirements.

NOTE: This file provides the credit requirements for students who join the ED Dual Degree program and:
a). shift to an Inter Disciplinary Dual Degree (IDDD) Program and hence would be awarded a B.Tech. in Engineering Design along with a Master's Degree in their IDDD specialization.
b). want to exit with a B.Tech. in Engineering Design after 4 years (a student opting for them same discuss this option thoroughly with their Faculty Advisor before applying).
c). want to exit with a B.Sc. (General) after 3 years (a student opting for them same discuss this option thoroughly with their Faculty Advisor before applying).

DEPARTMENT OF ENGINEERING DESIGN, IIT MADRAS

Notional Credit for B.Tech. (Engineering Design)

Semester-wise credit hour distribution (for BTech (ED) requirements)

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	53 +3	51+ 3	59	51 + Electives	19 + Electives	0 + Electives	0 + Electives	0 + 40*	239 + 160*

* Electives

L: Lecture, **T**: Tutorial, **E**: Extended tutorial, **P**: Lab, **O**: Outside class hours, **C**: Credits. **Cat**: Category (S: Basic sciences, E: Basic Engineering, H: Humanities, P: Professional, M: Management).

SEMESTER I

No.	Title	L	T	E	P	O	C	Cat
MA1101	Functions of Several Variables	3	1	0	0	6	10	S
AM1101	Engineering Mechanics	3	1	0	0	6	10	E
ED1021	Introduction to Computation and Visualization	3	0	0	3	6	12	C
ED1031	Creative Design	0	0	0	3	0	3	P
PH1010	Physics I	3	1	0	0	6	10	S
	NCC/ NSS/ NSO	0	0	0	0	2	2	G
	Life Skills 1	0	0	0	0	4	4	G
	Recreation	0	0	0	2	0	2	G
	Total	**12**	**3**	**0**	**8**	**30**	**53**	
Winter								
WS1010	Workshop I	0	0	0	3	0	3	E

SEMESTER II

No.	Title	L	T	E	P	O	C	Cat
ED1011	Functional and Conceptual Design	2	0	0	3	4	9	P
CY1050	Macromolecules as Engineering Materials	3	0	0	0	6	9	S
ME1480	Engineering Drawing	1	0	0	3	3	7	P
ED1033	Form and Aesthetics in Design I	1	0	0	3	2	6	P
EE1100	Basic Electrical Engineering	3	1	0	0	6	10	E
HS3050	Professional Ethics	2	0	0	0	0	2	G
	Ecology and Environment	2	0	0	0	0	2	G
	NCC/ NSS/ NSO	0	0	0	0	2	2	G
	Life Skills 2	0	0	0	0	2	2	G

	Recreation	0	0	0	2	0	2	G
	Total	**14**	**1**	**0**	**11**	**25**	**51**	
Summer								
WS1020	Workshop II	0	0	0	3	0	3	E

SEMESTER III

No.	Title	L	T	E	P	O	C	Cat
MA2101	Linear Algebra Via Matrices	3	1	0	0	6	10	S
ED2130	Analog and Digital Electronics	3	1	0	3	6	13	P
ED2090	Geometric Modelling and CAD	3	0	0	3	6	12	P
ED2012	Manufacturing Processes	3	0	0	0	6	9	P
ED2011	Design of Mechanical Systems 1	4	0	0	3	8	15	P
	Total	**16**	**2**	**0**	**9**	**32**	**59**	

SEMESTER IV

No.	Title	L	T	E	P	O	C	Cat
ED4040	Design of Thermal and Fluid Systems	4	0	0	3	8	15	P
ED2141	Physics of Measurement	3	0	0	0	6	9	S
ED2040	Control Systems	3	0	0	3	6	12	P
ED4060	Design of Mechanical Systems 2	4	0	0	3	8	15	P
M-Elective	Entrepreneurship Elective						9	M
	Total	**14**	**0**	**0**	**9**	**28**	**51**	

SEMESTER V

No.	Title	L	T	E	P	O	C	Cat
ED5017	Digital Signal Processing for Engineering Design	3	1	0	0	6	10	P
BT1010	Life Science	3	0	0	0	6	9	S
Elective	Elective 1 (PE/FE)							
Elective	Elective 2 (PE/FE)							
S-Elective 1	(Maths / Chemistry / Physics / Other Science Elective as approved by Faculty Advisor) Science Elective 1						9	S
H-Elective 1	Humanities Elective 1						9	H
	Total	**6**	**1**	**0**	**0**	**12**	**19**	

SEMESTER VI

No.	Title	L	T	E	P	O	C	Cat
Elective	Elective 3 (PE/FE)							
Elective	Elective 4 (PE/FE)							
Elective	Elective 5 (PE/FE)							
H-Elective 2	Humanities Elective 2						9	H

	Total						0	

SEMESTER VII

No.	Title	L	T	E	P	O	C	Cat
Elective	Elective 6 (PE/FE)							
Elective	Elective 7 (PE/FE)							
Elective	Elective 8 (PE/FE)							
Elective	Elective 9 (PE/FE)							
H-Elective 3	Humanities Elective 3						9	H
	Total	**0**	**0**	**0**	**0**	**0**	**0**	

SEMESTER VIII

No.	Title	L	T	E	P	O	C	Cat
ED5601	Project 1 (Internship Project in Industry)	0	0	0	40	0	40	P
	Total	**0**	**0**	**0**	**40**	**0**	**0+ 40**	

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Please note that Electives 1-9 are only indicated as Place Holders for the students' reference since a student should complete 75 Elective credits as courses (54 Unallotted Credits + 21 Professional Elective Credits). The actual number of elective courses taken by a student depends on the credits for each elective (currently assumed to be 9 per elective but may vary depending on the actual courses taken).

B.Tech (Honours)+ M.Tech program: (An additional 27 credits of coursework should be taken)

- ***Eligibility***: minimum CGPA of 8.5 at the end of 5th sem without U or W grade in any course. They need to maintain these conditions until graduation.

- ***Extra credit requirement***: 27 elective credits over and above regular program from the courses prescribed by the Department of Engineering Design. These credits ***have*** to be completed in VI, VII and IX semesters.