MATERIALS SCIENCE AND ENGINEERING

1. B.Tech. Template (BT)

	Semester							
	1st	2nd	3rd	4th	5th	6th	7th	8th
Courses	SCHEME-1 [9] ELC111/ELC112/ELC113 or ETH111 [3]	ETH111 [3] or SCHEME-1 [9] ELC111/ELC112/ELC113	SCHEME-2 EME (9-11)	SCHEME-3 HSS-1 (9-11)		SCHEME HSS-II (9)	SCHEME HSS-II (9)	SCHEME HSS-II (9)
	MTH 111 [6] / MTH 113 [6]	MTH 113 [6] / MTH 111 [6]	ESO202 (11)	ESC201 (14)	MSE301 (9)	ESO Basket (6-11)+	DE-3 (9)	OE-3 (9)
	MTH 112 [6] / MTH 114 [6]	MTH 114 [6] / MTH 112 [6]	ESO225 (8)	MSE202 (11)	MSE302 (9)	MSE 306* (9)	DE-4 (9)	OE-4 (9)
	PHY 114 [11]	PHY 113 [11]	MSE201 (11)	MSE203 (11)	MSE303 (9)	DE-1 (9)	OE-1 (9)	OE-5 (9)
	PHY 111 [3] / CHM 111 [3]	CHM 111 [3] / PHY 111 [3]	MSE204 (9)	MSE205 (8)	MSE304 (9)	DE-2 (9)	OE-2 (9)	OE-6 (6-9)
	TA 111 [9] / ESC111 [7]	ESC111 [7] / TA 111 [9]			MSE305 (9)			
	CHM 112 [4] / ESC112 [7]	ESC112 [7] / CHM 112 [4]						
	CHM 113 [4] / LIF111 [6]	LIF111 [6] / CHM 113 [4]	TA211 (3)		MSE351 (3)	MSE353 (3)		
	PE111 [3] / PE112 [3]	PE112 [3] / PE111 [3]	TA212 (3)	MSE251 (3)	MSE352 (3)	MSE360 (6)		
Credits	55/52	52/55	54-56	56-58	51	51-56	45	42-45

UGP-1 (MSE396) (4 credits) and UGP-4 (MSE498) are optional (over and above the minimum credit requirements)
UGP-2 (MSE496) (9 credits) can be taken in lieu of one DE course
UGP-3 (MSE497) (9 credits) can be taken in lieu of one OE course
+ESO Basket: ESO207/ MSO201/ HSO201/ MSO203M (One course required)

Credit required for graduation

Course Type	MSE template
Institute Core (IC)	112
SCHEME	54-58
E/SO	31-36
DC + DE	158
Open Electives (OE)	51-54
Total	406-418

2. B.Tech.-Honours (BTH) template

Courses for Semester-1 and 2 are same as in the template for B.Tech. (Template at entry No. 1)

	semester					
	3rd	4th	5th	6th	7th	8th
Courses	SCHEME-2 (9-11)	SCHEME-3 HSS-1 (9-11)		SCHEME HSS-II (9)	SCHEME HSS-II (9)	SCHEME HSS-II (9)
	ESO202 (11)	ESC201 (14)	MSE301 (9)	ESO Basket (6-11)+	UGP-2* (9)	UGP-3* (9)
	ESO225 (8)	MSE202(11)	MSE302 (9)	MSE 306 (9)	OE-1 (9)	OE-4 (9)
	MSE201 (11)	MSE203 (11)	MSE303 (9)	DE-1 (9)	OE-2 (9)	OE-5 (9)
	MSE204 (9)	MSE205 (8)	MSE304 (9)	DE-2 (9)	OE-3 (6-9)	OE-6 (9)
			MSE305 (9)		DEH-1 (9)	DEH-3 (9)
					DEH-2 (9)	
	TA211 (3)		MSE351 (3)	MSE353 (3)		
	TA212 (3)	MSE251 (3)	MSE352 (3)	MSE360 (6)		
Credits	54-56	56-58	51	51-56	60-63	54

- A student has to earn Minimum CPI of 8.0 for being eligible for B. Tech.-Honours
- Course taken under DEH-1/2/3 must be taken from those DEs which are 600 level or above
- *UGP-2 (MSE496) (9 credits) and UGP-3 (MSE497) (9 credits) are mandatory for BTH program
- UGP-1 (MSE396) (4 credits) and UGP-4 (MSE498) are optional (over and above the minimum credit requirements)
- +ESO Basket: ESO207/ MSO201/ HSO201/ MSO203M (One course required)

3. Bachelor of Technology and Management (BTM)

Courses for Semester-1 and 2 are same as in the template for B.Tech. (Template at entry No. 1)

	semester					
	3rd	4th	5th	6th	7th	8th
Courses	SCHEME-2 (9-11)	SCHEME-3 HSS-1 (9-11)		SCHEME HSS-II (9)	SCHEME HSS-II (9)	SCHEME HSS-II (9)
	ESO202 (11)	ESC201 (14)	MSE301 (9)	ESO Basket (6-11)+	MTB-1 (9)	OE-3 (9)
	ESO225 (8)	MSE202(11)	MSE302 (9)	MSE 306 (9)	MTB-2 (9)	MTB-4 (9)
	MSE201 (11)	MSE203 (11)	MSE303 (9)	DE-1 (9)	MTB-3 (9)	MTB-5 (9)
	MSE204 (9)	MSE205 (8)	MSE304 (9)	OE-1 (6-9)	OE-2 (9)	MTB-6 (9)
			MSE305 (9)			
	TA211 (3)		MSE351 (3)	MSE353 (3)		
	TA212 (3)	MSE251 (3)	MSE352 (3)	MSE360 (6)		
Credits	54-56	56-58	51	48-56	45	45

- MTB-1 to MTB-6 are courses from *Management track basket* worth 54 credits
- UGP-1 (MSE396) (4 credits) and UGP-4 (MSE498) are optional (over and above the minimum credit requirements)
- UGP-2 (MSE496) (9 credits) can be taken in lieu of one DE course
- UGP-3 (MSE497) (9 credits) can be taken in lieu of one OE course
- +ESO Basket: ESO207/ MSO201/ HSO201/ MSO203M (One course required)

4. *Double Major* program (For a student from another department who is seeking second major from the MSE Department)

(as per the BT template)

Odd Semester	Even Semester
Pre-Requisite	
ESO225 (8)	
TA211 (3); TA212 (3)	
Department Core Requirements	
MSE201 (11)	MSE202 (11)
MSE204 (9)	MSE203 (11)
MSE301 (9)	MSE205 (8)
MSE302 (9)	MSE306 (9)
MSE303 (9)	
MSE304 (9)	
MSE305 (9)	
Laboratory Courses	
MSE351 (3)	MSE251 (3)
MSE352 (3)	MSE353 (3)
	MSE360 (6)
Total credits 71	Total credits 51

- Total Mandatory credits for second major: 122
- Pre-Requisites: ESO225 (8 credits); TA211 and TA212 (3+3 credits) [a student should have done these courses prior to seeking entry into double major]

5. Dual Degree (B.Tech. + M.Tech.) template

- Category-A: for a student from the MSE department

Template for semester 1st to 6th remains same as that for B.Tech. (Template at entry No. 1)

	Semester				
Courses	7th	8th	Summer	9th	10th
	OE PG-1 (9)	OE PG-3 (9)	MTech Thesis/ DE PG-1/2 (18) (optional)	MTech Thesis (36)	MTech Thesis (36)
	OE PG-2 (9)	OE PG-4 (9)		MSE801 (0)	
	DE PG-1 (9)*	DE PG-2 (9)*			
Credits	27	27	18	36	36

- *Students from within Department can use up to 2 DE UG courses for PG part, that is, they can get up to 18 credits of waiver in their PG part in lieu of 2 DE courses taken in their UG part.

- Category-B: for a student from the department other than MSE

Template for semester 1st to 6th will be as per the template of the parent department of the student

	semester				
Courses	7th	8th	Summer	9th	10th
	OE PG-1 (9)	OE PG-3 (9)	MTech Thesis (18)	MTech Thesis (27)	MTech Thesis (27)
	OE PG-2 (9)	OE PG-4 (9)		DE PG-1 (09)	DE PG-2 (09)
				MSE801 (0)	
Credits	18	18	18	36	36

6. Minor

Can be given in any of the three streams if a student completes 18 or more credits in a particular stream (Stream names to be revised later, and courses in individual streams would be revise and communicated later)

- Devices and Bio-Engineering Stream
- Structure-Characterization Stream
- Metals Processing Stream