20 July 2021

Course Template for M.Tech. (Dual degree)

	BT/BS - MT (Category-B) From other departments				Template No. SEE-2	
Courses	Semester →	1	2	Summer Term	3	4
	Recommended UG course	**PG Component**				
	Technical communications course [1]	**SEE-601* [9]**	**SEE-604 [9]**	M.Tech. Thesis / Courses	M.Tech Thesis [36]	M.Tech Thesis [36]
		SEE-602* [9]	**SEE-605 [9]**		**SEE691 course [0]**	
		SEE-603*$ [9]	**SEE690 course [0]**			
		SEE-616 # [9]				
		DE-PG-1 (Basket-A1) [9]	DE-PG-3 (Basket-B1) [9]			
		DE-PG-2 (Basket-A1) [9]	DE-PG-4 (Basket-B1) [9]			
	Credits →	36	36	0-18 (Optional)	36	36
					Total Credits (PG) →	144 [+18 (Optional)]

Remarks

1) [1] It is highly recommended that the students audit a communications UG course. Some examples are as follows: AE401A-Technical Communication, BSE301A-Scientific & Professional Communication, CHE300a-Chemical Engineering Communication Skills, CHM361a-Chemistry Communication Skills, CE341A-Civil Engineering Communication Skills.
2) * Two of the three courses are compulsory. Students can take the third course as elective (DE-PG-1).
3) DE-PG-1,2 from basket-A1 and DE-PG-3,4 from basket-B1.
4) No. of compulsory courses: 6 (including zero credit courses: SEE690 & SEE691).
5) Minimum no. of electives: 4 (2 in 1st semester and 2 in 2nd semester).
6) The template is designed keeping in view the students joining in July/Aug. For students joining in even semester, the students are advised to consult the DPGC.
7) Instead of Basket-A1 or Basket-B1, the students can choose from Basket-A2 or Basket-B2, with the approval of the DPGC (& in consultation with the guide).
8) $ Only for students of 2021.
9) # This is designated as a core course for students' of 2022 batch and onwards. However, who have already taken SEE 603 are exempted from SEE 616 as core/compulsory.

Basket-A1	Basket-B1
	SEE-609: Computational Methods in Engineering**
SEE-606: Electrochemical Energy Systems	SEE-610: Introduction to Materials Modelling and Simulations[$]
SEE-607: Hydrogen Energy: Production, Storage and Utilization	SEE-611: Energy Systems: Modelling and Analysis
SEE-608: Introduction to Bioenergy and Biofuels	SEE-612: Manufacturing of energy systems
One of the following courses which has not been taken as compulsory course: SEE-601, SEE-602, SEE-603, SEE-616[#]	SEE 613: Solar Photovoltaics
# This is designated as a core course for students' of 2022 batch and onwards. However, who have already taken SEE 603 are exempted from SEE 616 as core/compulsory.	SEE-614: Wind Energy
	SEE-615: Solar Thermal Engineering
	SEE-616: Essential Electrical Engineering for Renewables Integration
	SEE-617: Introduction to sustainable energy policy
	SEE-618: Energy Efficient Building Design
	SEE-619A: Finite Volume Methods for Engineers
	SEE-620A: Heat Driven Cooling Systems
	SEE-621A: Biomass Conversion and Biorefineries
Basket-A2	**Basket-B2**
EE698D: Smart Grid Technology	CHE642A: Numerical Methods**
EE630A: Simulations of Power Systems	ME685A: Applied Numerical Methods**
EE660A: Basics of Power Electronic Converters	AE603: Introduction to Scientific Computing**
EE631A: Advanced Power System Stability	CHE622A: Molecular Simulations[$]
MSE673: Fundamentals and Applications of Electrochemistry	ChE626A: Practical Introduction to Quantum Mechanical Methods for Scientists and Engineers[$]
	ME743: Fuel Cells

**,[$]Students should take only one of these courses
(i.e. Students can take ONLY one of the following set: CHE642A, ME685A, AE603, SEE-609 and ONLY one of the following two: CHE622A, ChE626A).

Minimum credit requirement for M.Tech. part of the BT-MT degree

Coursework	72
Thesis	72*
Total	144 [+18 (Optional)]

*Students can take take additional credits in summer semester.