

TCET DEPARTMENT OF MECHANICAL ENGINEERING (MECH)





Class: TE (B)

TCET/FRM/IP-02/09 Revision: A

Semester Plan (Beyond curriculum Bridge Course)

Semester: V Course: MECH

Subject: Introduction to FEA & Optimization technique

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Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference /Online Courses	Remarks
1	M1	1.1	Introduction to FEA	Online Book, online Video	19-07-2018	1.1,2.1	
2	M1	1.2	Requirement FEA as a tool	Online Book, online Video	19-07-2018	1.1,2.1	
3	M1	1.3	FEA as a Numerical Method	Online Book, online Video	26-07-2018	2.1	
4	M1	1.4	Understanding the need of FEA in Industries	Online Book, online Video	27-07-2018	2.1	
5	M2	2.1	What do you mean by FEA & its Industrial Applications	Online Book, online Video	02-08-2018	2.2	
6	M2	2.2	Techniques in FEA, Basic elements & its Types	Online Book, online Video	03-08-2018	2.2	
7	M2	2.3	Why do FEA needs different types of elements	Online Book, online Video	09-08-2018	2.2	
8	M2	2.4	FEA: 2D Elements	Online Book, online Video	10-08-2018	2.2	
9	M3	3.1	Quality Checks for 2 D elements	Online Book, online Video	16-08-2018	2.3	



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				Online			
10	М3	3.2	FEA: 3D Elements	Book,	23-08-2018	1.1,2.3	
		3.2		online	23-00-2010	1.1,2.3	
				Video			
			Element quality & check	Online			
11	М3	2.2		Book,	24.09.2019	2.2	
		3.3		online	24-08-2018	2.3	
				Video			
	М3	3.4	DOF for solid Elements	Online	30-08-2018	1.1,2.3	
12				Book,			
12				online			
				Video			
	M4	4.1	What is Mesh	Online		1.1,2.1,2.	
12				Book,	21 00 2010		
13				online	31-08-2018		
				Video			
	M4	4.2	How to create Mesh	Online	06-09-2018	1.2,2.3	
14				Book,			
14				online			
				Video			
	M4	4.3	What is optimization	Online		1.2.2.2	
,				Book,	07-09-2018		
15				online		1.2, 2.3	
				Video			
	M4	4.4	Optimization Technique	Online	20-09-2018	2.3	
				Book,			
16				online			
				Video			
				Online	27-09-2018	2.3	
_	M5	5.1	What is structural optimization	Book,			
17				online			
				Video			
				Online			
18	M5	5.2	Shape Optimization	Book,	28-09-2018	2.3	
				online			
				Video			
19	M5	5.3	Topology Optimization technique	Online	4-10-2018	2.2,2.3	
				Book,			
				online			
				Video			
	M5	5 5.4	Topography Optimization technique	Online	4-10-2018	2.2,2.3	
				Book,			
20				online			
				Video			
			+	Online			
21	M6	16 6.1	Size optimization	Book,	5-10-2018	2.3	
	1110	0.1	Size optimization	online	3 10-2010	2.3	
				Omme	1		



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			Video			
M6	6.2	Shape optimization	Online	5-10-2018	2.4	
			Book,			
			online			
			Video			
M6	6.3	Optimized analysis efficiency for optimum design	Online	11-10-2018	2.4	
			Book,			
			online			
			Video			
M6	M6 6.4 Case study on Optimizat	Cose study on Ontimization	Online	12-10-2018	2.4	
			Book,			
		Case study on Optimization	online			
			Video			
mark::	Syllabus Coverage:		Practice Session:		Beyond Syllabus:	
ourse:						
	M6 M6 mark::	M6 6.3 M6 6.4 mark:: Syllabus	M6 6.3 Optimized analysis efficiency for optimum design M6 6.4 Case study on Optimization mark:: ourse: Syllabus Coverage:	M6 6.2 Shape optimization Shape optimization Online Book, online Video Online Book, online Book, online Video Online Book, online Video Online Video Online Video Online Video Online Video Online Practice Sessionse:	M66.2Shape optimizationOnline Book, online VideoM66.3Optimized analysis efficiency for optimum designOnline Book, online VideoM66.4Case study on OptimizationOnline Book, online Videomark::Syllabus Coverage:Practice Session:	M6 6.2 Shape optimization Online Book, online Video 5-10-2018 2.4 M6 6.3 Optimized analysis efficiency for optimum design Online Book, online Video 11-10-2018 2.4 M6 6.4 Case study on Optimization Online Book, online Video 12-10-2018 2.4 mark:: ourse: Syllabus Coverage: Practice Session: Beyond Sy

No. of (lectures planned)/(lecture taken): 24

Reference Books:

- 1.1 Seshu. P. "Textbook of Finite Element Analysis" Prentice Hall of India, 2003.
- 1.2 J.N. Reddy, "Finite Element Method" Tata McGraw Hill, 2003

Digital Reference:

- 2.1 https://www.youtube.com/watch?v=O1yFhJOA8mQ
- 2.2 https://www.youtube.com/watch?v=8euY10iD-9g
- 2.3 http://www.midasnfx.com/Experience/tutorials.asp
- 2.4 http://www.midasnfx.com/Experience/fea-analysis-guide.asp
- 2.5 www.nptel.ac.in

Sd/- Sd/-

Mr. Mahendra Shelar
Name & Signature of Faculty

Dr. Siddesh Doddametikurke
Signature of HOD
Signature of Principal

/Dean (Academics)