		Walc		of Engineering					
(Government Aided Autonomous Institute) AY 2023-24									
D				Information					
Progra			M. Tech. Applied Mechanics						
	Semester		First Year M. Tech, Sem II						
	e Code e Name		70E502						
		L	Structural Health Monitoring						
Desire	d Requisi	tes:							
ſ	Teaching	Scheme		Examination S	cheme (Marks)				
Lectur	re	3 Hrs/week	MSE	ISE	ESE	Total			
Tutori	ial		30	20	50	100			
				Cred	its: 3				
			Course	Objectives					
1			•	~ .	to keep civil infrast	ructure under			
			suring structural int		<u> </u>				
3				nabilitation scheme	s for structures. ring systems after d	icactor			
3	10 assess			ith Bloom's Taxo		isastei.			
At the	end of the				domy Level				
CO1	at the end of the course, the students will be able to, CO1 Demonstrate the knowledge of SHM for various components of structures.								
CO2		raluate various techniques for SHM of structures							
CO3	Design v	arious SHM tec	hniques for various	s structures.		Creating			
Modu			Module C			Hours			
			ctural Health Mo						
		Definition & motivation for SHM, SHM - a way for smart materials and							
Ι	I			•					
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	Importance of re-analysis, execution of rehabilitation strategy, Case studies.						
VI	Damage Detection of Composite Structures Introduction to composites and their applications in structural Industry. Learning from failures. Various kinds of damage detection techniques. Repair & rehabilitation & retrofitting of composite structures, damage assessment of composites structures, Case studies.	6					
	Taythooks						
1	Textbooks Daniel Balageas, Claus - Peter FritzenamI Alfredo Guemes, Structural Health monitoring, Published by ISTE Ltd., U.K. 2006						
2	Guide Book on Non-destructive Testing of Concrete Structures, Training course series No.17, International Atomic Energy Agency, Vienna, 2002.						
References							
1	Hand book on "Repair and Rehabilitation of RCC Buildings", Published by Director General, CPWD, Govt. of India, 2002.						
2	Hand Book on Seismic Retrofitting of Buildings, Published by CPWD & Indian Building Congress in Association with IIT, Madras, Narosa Publishing House, 2008.						
l							
Useful Links							
1	https://nptel.ac.in/noc/courses/noc19/SEM1/noc19-mm07/						
2	https://onlinecourses.nptel.ac.in/noc20_mm07/preview						
3	https://nptel.ac.in/courses/105/108/105108141/						
4							

CO-PO Mapping									
	Programme Outcomes (PO)								
	1	2	3	4	5	6			
CO1	1		3	2					
CO2		2							
CO3			2	2	2	3			

The strength of mapping is to be written as 1: Low, 2: Medium, 3: High

Each CO of the course must map to at least one PO.

Assessment

The assessment is based on MSE, ISE, and ESE.

MSE shall be typically on modules 1 to 3.

ISE shall be taken throughout the semester in the form of a teacher's assessment. Mode of assessment can be field visits, assignments, etc., and is expected to map at least one higher-order PO.

ESE shall be on all modules with around 40% weightage on modules 1 to 3 and 60% weightage on modules 4 to 6.

For passing a theory course, Min. 40% marks in (MSE+ISE+ESE) are needed and Min. 40% marks in ESE are needed. (ESE shall be a separate head of passing).