## Tulsiramji Gaikwad Patil College of Engineering & Technology, Nagpur

(An Autonomous Institution Affiliated to RTM Nagpur University, Nagpur)

SCHEME OF INSTRUCTION & SYLLABUS

Programme : Mechanical Engineering

Scheme of Instructions :Final Year B.Tech In Mechanical Engineering

Semester-VIII

Sr.	Course	e Course	Course Title	т	т	ГР	Contact	Credits	EXAM SCHEME				
No.	Category	Code	Course The	L	I		Hrs./Wk		CT1	CT2	TA/CA	ESE	TOTAL
1	PCC	BME4801	Comprehensive Viva-voce	-	-	-	-	2	-	-	-	100	100
2	HSMS	BME4802	Extra- Curricular Activities/ Co Curicular Activities/Competitive Exam	-	-	-	-	2	-	-	100	-	100
3	PROJ	BME4803	Industry Based Project / Industry Internship	-	-	12	24	12	-	-	75	75	150
4	MCC	BAU4808	Project based Science, Technology, Social, Design and Innovation	-	-	2	2	Audit	-	-	-	-	-
			Total	4	-	26	30	16	-	-	175	175	350

L-Lecture CT1-ClassTest1 CT2-ClassTest2 T-Tutorial P-Practical TA/CA-Teacher Assessment/ Continuous Assessment ESE-End Semester Examination (For Lab oratory End Semester performance)

Course Category	HSMC (Hum., Soc. Sc, Mgmt.)	BSC (Basic Sc.)	ESC (Engg. Sc.)	PCC (Professional Core Courses)	PEC (Professional Elective Courses)	OEC(Open Elective courses from other discipline)	Project/Seminar /Industrial Training	MCC(Mandatory Courses)
Credits	2			2			12	Yes
Cumulative Sum	9	26	24	53	18	18	15	

PROGRESSIVETOTALCREDITS: 147+16=163



Dea Tulsiramji Gaikwad-Patin College Of Engineering and Technology, Nagpur



Tulsiramji Gaikwad-Patil College Of Engineering & Technology, Nagpur

Tulsiramji Gaikwad-Patil College of Engineering and							
┨┛┨	Technology						
Wardha Road, Nagpur-441 108							
Fourth Year (Semester-VIII) B. Tech. Mechanical Engineering							
BAI	J4808: PROJE	CT BASED S	CIENCE, TECHNOLOGY	. SOCIAL DESIG	N		
			AND INNOVATION	,			
Teaching Sc	cheme			<b>Examination Sch</b>	eme		
Lectures		2 Hrs/week		CT-1	-		
Tutorial		-	-	CT-2	-		
Total Credit	t	Audit	-	ТА	-		
			-	ESE	-		
			-	Total	-		
Course Object	ives			Duration of ESE:	-		
1	Explain the co	oncent of desig	n thinking for product and se	ervice development			
1	Laplain the etc		in thinking for product and st				
2	Explain the f	undamental co	ncept of innovation and desig	gn thinking			
3	Discuss the m	nethods of imp	lementing design thinking in	the real world			
			<b>Course Contents</b>				
Unit I	Process Of I	Design Unders	tanding Design thinking Sha	red model in team-	based design –		
	Theory and practice in Design thinking – Explore presentation signers across globe –						
<b>T 1 1</b>	MVP or Prot	otyping					
Unit II	Tools for Design Thinking Real-Time design interaction capture and analysis – Enabling						
	efficient collaboration in digital space – Empathy for design – Collaboration in distributed						
IIn:4 III	Design.				· · · · ·		
	<b>Design</b> Thinking in IT Design Thinking to Business Process modelling – Agile in Virtual collaboration environment – Scongrid based Prototyming						
Unit IV	DT For strat	tegic innovati	ons Growth – Story telling r	epresentation – Str	ategic Foresight		
	- Change – S	ense Making -	Maintenance Relevance – V	alue redefinition -	Extreme		
	Competition – experience design - Standardization – Humanization - Creative						
	Culture – Rapid prototyping, Strategy and Organization – Business Model design						
Unit V	<b>Design Thinking</b> by Ideate, Prototype and Test, identify problem areas, and synthesize						
the gathered information & define social design opportunities.							
Text Books							
1	A textbook of Machine design by S. Chand and CO.						
2	A textbook of Machine design by Eurasia Publishing House (Pvt.) Ltd.						
3 A textbook of Computer-Aided Design And Manufacturing by Pearson Education							
Reference Books							
1	Analysis And Design Algorithms: Guruprasad,N: S.Chand And Co						
2	Cad/Cam : Computer Aided Design And Manufacturing: Groover Mikell P; Zimmers Emory W; Pearson Education.						

Useful Links					
1	https://onlinecourses.nptel.ac.in/noc19_mg60/preview				
2	https://archive.nptel.ac.in/courses/107/101/107101088/				
3	https://onlinecourses.nptel.ac.in/noc22_de16/preview				

Course Code	Course Outcomes	CL	Class Sessions
BAU4808.1	Summarize different methodologies and approaches used in the design process	5	9
BAU4808.2	Summarize generation of design ideas through different technique	5	9
BAU4808.3	<b>Interpret</b> the significance of reverse Engineering to Understand products	3	9
BAU4808.4	Discuss technical drawing for design ideas.	5	9
BAU4808.5	<b>Apply</b> design principles and methodologies to analyze and synthesize the gathered information, identify problem areas, and define social design opportunities.	3	9

Department of Head Tulsiramji Gal wad Patil College of Engineering & Technology, NAGPUR

Pr 0 Dean Academics fulsiramji Gaikwad-Patil College Of Engineering and Technology, Nagpur