

**GUJARAT TECHNOLOGICAL UNIVERSITY****Syllabus for Diploma in Vocation (D.Voc), 4th Semester****Branch: Automobile Servicing****Subject Name: Material Science Lab.****Subject Code: 1240105****With effective
from academic
year 2018-19****Teaching and Examination Scheme:**

Teaching Scheme			Credits	Examination Marks				Total Marks
L	P	OJT		Theory		Tutorial/ Practical		
			University exams (ESE)	Progressive Assessment (PA)	External Practical /viva Exam (ESE)	Internal evaluation Practical /viva Exam (PA)		
-	2	-	2	-	-	20	30	50

L- Lectures; P- Practical; OJT- On Job Training; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Course Content

Unit No.	Content	Hours
1.	(a) Study of various crystals structures through models BCC, FCC, HCP, tetrahedral and octahedral voids. (b) Material identification of, say, 50 common items kept in a box.	10
2.	Specimen preparation for metallographic examination /micro structural examination Cutting, grinding, polishing, etching	08
3.	Comparative study of microstructures of different given specimens (mild steel, gray C.I., brass, copper etc.)	08
4.	Heat treatment experiments such as annealing, normalizing, quenching, case hardening and comparison of hardness before and after.	08
5.	Study of Microstructure and hardness of steel at different rates of cooling, Microstructure examination of white cast iron.	08
Total Hours		42