GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc), 5th Semester
Branch: Automobile Servicing
Subject Name: Auto NVH - I
Subject Code: 1150104

With effective from academic year 2018-19

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE (E)	PA (M)	ESE (V)	PA (I)	
3	-	0	3	50	-	-	-	50

Course Content:

Unit No.	Content	Hrs.
1	**Introduction to NVH:** Noise, Vibration and Harshness (NVH) and its role in automotive design and development. Physiological effects of noise and vibration, sources of vibration and noise in automobiles.	08
2	**Vibrations** Basic concepts of vibration, time period, frequency, SHM, types of vibration, Natural frequency, resonance, damping, mathematical models.	12
3	**Vibration Analysis:** Formulating the equations of motion - linear and torsional system. Damped and undamped single degree of freedom system, undamped two degree of freedom systems derivation, coordinate coupling, generalized coordinates.	12
4	**Vibration Control:** Different types of dampers, vibration absorbers, centrifugal pendulum, dry friction, untuned viscous, vibration isolation	4
5	**Vibration measurement:** Instruments, vibrometer, velocity pick-ups, frequency measurement instrument. one applications: isolation of the engine from vehicle structure and control of torsional oscillation amplitudes in engine crankshaft	6
	Total Hours:	42

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks				
R Level	U Level	A Level	N Level	E Level
5	15	15	10	5

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate and above Levels (Bloom's Taxonomy)