

**GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)**

II - SEMESTER

**Course Title: Engineering Science**

(Course Code: 1323401)

<b>Diploma Programme in which this course is offered</b>	<b>Semester in which offered</b>
Mechanical (Manufacturing Technology)	Second Semester

<b>Module.</b>	<b>Topics</b>	<b>Hours</b>
Module 1	<b>Force Motion and Energy</b> 1.1 Linear Motion 1.2 Speed, Velocity and Acceleration 1.3 Acceleration due to Gravity 1.4 Equation of Motion 1.5 Newton's Laws of Motion – First, Second and Third 1.6 Work, Power and Energy – Definition and Units	5 h
Module 2	<b>Magnetism</b> 2.1 Characteristics of Magnets 2.2 Application of Magnets in Industry 2.3 Magnetic Forces 2.4 Magnetism Electricity Relationship 2.5 Properties of paramagnetic Diamagnetic and Ferromagnetic Materials 2.6 Properties and Application of Permanent and Electro Magnets	4 h
Module 3	<b>Corrosion and its Control</b> 3.1 Explanation of Corrosion 3.2 Electro Chemical Theory of Corrosion 3.3 Factors Favoring Corrosion 3.4 Uniform Attack Corrosion, Galvanic Corrosion, Localized Corrosion Environmental Cracking, Flow Assisted Corrosion, High Temperature Corrosion 3.5 Methods to Minimize / Eliminate Corrosion of Metal 3.6 Environmental Modification 3.7 Surface Condition 3.8 Cathodic Protection 3.9 Corrosion Inhibitors 3.10 Coating 3.11 Plating	5 h
Module 4	<b>Fuels</b> 4.1 Types of Fuels and their Application 4.2 Energy Crisis 4.3 Alternative Sources of Energy- Solar, Wind	6 h