



R.M.K. COLLEGE OF ENGINEERING AND TECHNOLOGY



R.S.M. Nagar, Pudukottai – 601 206.

DEPARTMENT OF SCIENCE & HUMANITIES

Online Course Title	New engineering materials
Faculty attended	T Sundareswaran
Learning Outcome	To know how the engineering materials can withstand stress and strain
Summary / Content of the programme	<ul style="list-style-type: none">➤ This course explores the topic of solid objects subjected to stress and strain. The methods taught in the course are used to predict the response of engineering structures to various types of loading, and to analyze the vulnerability of these structures to various failure modes. Axial loading will be the focus in this course.➤ Week 1- Stress and Strain Fundamentals In this section, we will study the fundamentals of stress and strain as applied to Mechanics of Materials.➤ Week 2- Stress-Strain Diagrams, Material Properties, and Shear Stress and Strain In this section, we will develop stress-strain diagrams, discuss material properties, and look more in depth at shear stress and strain.➤ Week 3 - Stresses on Inclined Planes In this section, we will develop the stress transformation equations for inclined planes and introduce Mohr's Circle for Plane Stress➤ Week 4 - Stress concentrations, Mohr's Circle for Plane Strain, and measuring strains In this section, we will learn about stress concentrations, and discuss plane strain, develop Mohr's Circle for Plane Strain, and explore methods of measuring strain.➤ Week 5 - Generalized Hooke's Laws, Factor of Safety, Non-linear behavior and Plasticity, Statically Indeterminate Structures, and Thermal Effects In this section, we will conclude the course by discussing the topics of the generalized Hooke's Laws for Isotropic materials, factors of safety, nonlinear behavior and plasticity, statically indeterminate structures, and thermal effects in mechanics of materials.
Suggestions / comments of Faculty	The PPT and organizing committee was good.