Sample Brief Course Description	
Course title	Design of Mechanisms and Mechanical Components
Course code	BME 412
College	Engineering
Department / Program	Biomedical Engineering
Year/ Level	4/12th
Course Type	A. ☐ University ☐ College ■ Department ☐ Others b. ☐ Required ■ Elective
Credited Hours	3
Contact Hours	(LT: 2, LB: 2, TR: 0)
Pre-requisites (if any)	--
Co-requisites (if any)	---
Course description	This course is intended to cover fundamental concepts on kinematics and dynamic analysis of linkages as a mechanical systems and design mechanical components. The course topics will include basic mechanisms. Mechanical joints of mechanisms. Design of such mechanical elements. Types of mechanical components. Different mechanical components load, stresses and deflections. Mechanical components failure conditions. Basics of finite element analysis.

Course Main Objectives	• Understand some of the basic mechanisms, such as four-bar and slider crank linkages. • Demonstrate a clear understanding of the physical meaning of degree of freedom; gain the ability to identify mechanical joints of mechanisms; and to visualize their mobility. • Identify the elements of the mechanical design. • Describe the different types of mechanical components and their use. • Calculate loads, stresses, deflections, and failure conditions of different mechanical components. • Predict the mechanical behavior of mechanical components. • Be able to design mechanical components.
Learning Outcomes	**Knowledge and Understanding:** 1. Identify the mechanical system that satisfies the given engineering requirements.
	Skills: 1. Evaluate the performance of mechanical systems (mechanisms and components). 2. Design mechanical mechanisms and machine elements for both motion and strength requirements. 3. Analyze the mechanical system design to predict the possible failure conditions. 4. Explain the potential of designed mechanical systems on environment and society.
	Values: 1. Communicate design work through written report.