AL IMAM MOHAMMAD IBN SAUD ISLAMIC UNIVERSITY
COLLEGE OF ENGINEERING
Department of Mechanical Engineering

Course Information	
Course Code and Name:	ME479 Special Topics in Computational Methods in Mechanical Engineering
Credit Hours**:**	**3** (3 Lecture + 1 Tutorial)
Prerequisites:	To be determined by the Instructor

Course Description
Topics relevant to specialization in Computational Methods to strengthen students' knowledge in this field. Any course from other engineering departments or University must be approved by the ME Department Council.

Textbook			
Title	A first course in Finite Element Method		
Authors	Daryl L. Logan		
Publisher	Cengage Publishing	Year and Edition	6th Ed., 2017

Course Contents
Introduction to Finite Element Method, Introduction to Direct Stiffness Method (DSM) for spring element
Development of truss element equations through DSM and energy method
Development of beam element equations through DSM and energy method
Introduction to AnSys, Finite element analysis of truss element using ANSYS
Finite element analysis of beam element using ANSYS
Development of frame and grid elements equations through DSM and energy method
Finite element analysis of square plate with hole at the center using ANSYS
Development of plane stress and plane strain stiffness equations
Course review and project discussion

Academic Coordinator	Signature
Dr. Rashid Khan	

Official Stamp