

MENG331 – Dynamics of Machinery			
Eastern Mediterranean University Faculty of Engineering			
Department: Mechanical Engineering			
Program Name: Mechanical Engineering		Program Code: 23	
Course Code: MENG331	Course Title: Dynamics of Machinery	Credits: 4 Cr	Year/Semester: 2017-2018 Fall
<input checked="" type="checkbox"/> Engineering or Area Core <input type="checkbox"/> Engineering Course offered by other programs <input type="checkbox"/> Engineering or Area Elective <input type="checkbox"/> Mathematics and Basic Sciences <input type="checkbox"/> General Education			
Prerequisite(s): MENG233 or MENG231 and MATH207 or MATH241			
Catalog Description: Mechanical vibrations: 2-DOF vibrating systems, vibration measuring instruments, numerical methods for multi-degree of freedom systems, Dunkerley's equations, vibration of continuous systems, random vibrations. Balancing of machinery: rigid rotors, reciprocating machines, flywheels, planar linkages, balancing machines and instrumentation. Cam dynamics, gyroscope and governors.			
Instructor Name: Associate Professor Dr Qasim Zeeshan		Office no: ME141	Office Tel: 6301361
Course Web Page: http://me.emu.edu.tr/zeeshan/courses.htm			
Textbook(s): Mechanical Vibrations by William Palm (1st Edition) - Wiley Publications. Mechanical Vibrations by Rao Singiresu (4th Edition) - Pearson Publications.			
Indicative Basic Reading List :			
Topics Covered and Class Schedule: (4 hours of lectures and 1 hour of tutorial and lab per week) Week 1 Fundamentals of Vibration Week 2 Free Vibration of Single Degree of Freedom Systems Week 3 Harmonically Excited Vibration Week 4 Harmonically Excited Vibration Week 5 Two-Degree of freedom systems Week 6 Two-Degree of freedom systems Week 7 Revision Weeks 8-10 Mid-Term Examination Week 11 Vibration Measurement and Applications Week 12-13 Modal Analysis Week 14 Vibration Control Week 14-15 Revision Week 15 Final Examination			

Lecture and Tutorial Learning Outcome		Student Outcomes	Performed Assessments and Percentage
<ul style="list-style-type: none"> Understand the fundamentals of vibration. Understand equivalent spring & Mass system. Understand the free response of one-degrees of freedom system. Understand the response of one-degree freedom systems with damping. Understand the response of two-degree freedom systems. Understand the mode shapes of two-degree freedom systems. Understand the fundamental of vibration measurement in the real world. 		a, e	Midterm Exam: 30% Homework: 5% Quiz: 5% Project: 10% Final Examination: 40%
Lab. Experiment Title and Lab. Equipment Used	Lab Learning Outcome	Student Outcomes	Performed Assessments and Percentage
Lab #1- Determination of the stiffness of two different springs	2 .Understand equivalent spring & Mass system.	b	Lab Works and Lab Attendance %10
Lab #2- Determination of moment of inertia	1. Understand the fundamentals of vibration.		
Lab #3- Damped free vibrations	3 .Understand the free response of one-degrees of freedom system. 4 .Understand the response of one-degree freedom systems with damping.		
Lab #4- Mode shape analysis of cantilever beam with ANSYS	7.Understand the fundamental of vibration measurement in the real world.		

Contribution of Course to Criterion 5

Credit Hours for:

Mathematics & Basic Science : 0

Engineering Sciences and Design : 4

General Education : 0

Important Notes:

University rules and regulations are applied to this course.

NG Policy: Students who do not attend any of the above assessment activities (such as mid-term exam, lab exam, homework, design project report etc.) will be given NG (Nil Grade).