MECH 2641 - Dynamics

Fall 2026 Syllabus, Section 01, CRN 40783,

Credit hours: 3

Instructor

Brian Friedrich

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Public Instructor Information

Instructor Title: Dr.
Instructor Professional Qualifications: Ph. D., Materials Science and Engineering, Youngstown State University, 2022
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Course Description

2641. Dynamics. Kinematics of particles and rigid bodies. Newton's laws of motion, work-energy, and impulse momentum techniques applied to particle and rigid body motion using a vector approach. Prereq.: CEEN 2601. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Choose One	Engineering Mechanics Statics and Dynamics, 16th edition	R. C. Hibbeler	13: 9780135426388
Choose One	Engineering Mechanics: Dynamics, 16th edition	R. C. Hibbeler	13: 9780135426104

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Course Schedule (Subject to Change)

Day	Date	Proposed Topic	Due/To Prepare for Class
Mon	8/24	Syllabus Review, Expectations	
Wed	8/26	Review of Prerequisites Introduction to Dynamics	
Fri	8/28	Chapter 12 - Kinematics of a Particle	
Mon	8/31	Chapter 12 - Kinematics of a Particle	
Wed	9/2	Chapter 12 - Kinematics of a Particle	
Fri	9/4	Chapter 12 - Kinematics of a Particle	
Mon	9/7		
Wed	9/9	Chapter 13 - Kinetics of a Particle: Force and Acceleration	Chapter 12 Homework
Fri	9/11	Chapter 13 - Kinetics of a Particle: Force and Acceleration	
Mon	9/14	Chapter 13 - Kinetics of a Particle: Force and Acceleration	
Wed	9/16	Chapter 13 - Kinetics of a Particle: Force and Acceleration	
Fri	9/18	Chapter 14 - Kinetics of a Particle: Work and Energy	Chapter 13 Homework

Mon	9/21	Chapter 14 - Kinetics of a Particle: Work and Energy	
Wed	9/23	Chapter 14 - Kinetics of a Particle: Work and Energy	
Fri	9/25	Chapter 14 - Kinetics of a Particle: Work and Energy	
Mon	9/28	Chapter 15 - Kinetics of a Particle: Impulse and Momentum	Chapter 14 Homework
Wed	9/30	Chapter 15 - Kinetics of a Particle: Impulse and Momentum	
Fri	10/2	Chapter 15 - Kinetics of a Particle: Impulse and Momentum	
Mon	10/5	Chapter 15 - Kinetics of a Particle: Impulse and Momentum	
Wed	10/7	Exam 1 Review	Chapter 15 Homework
Fri	10/9	Exam 1 Review	
Mon	10/12	Exam 1	
Wed	10/14	Chapter 16 - Planar Kinematics of a Rigid Body	
Fri	10/16	Chapter 16 - Planar Kinematics of a Rigid Body	
Mon	10/19	Chapter 16 - Planar Kinematics of a Rigid Body	
Wed	10/21	Chapter 16 - Planar Kinematics of a Rigid Body	
Fri	10/23	Chapter 17 - Planar Kinetics of Rigid Body: Force and Acceleration	Chapter 16 Homework
Mon	10/26	Chapter 17 - Planar Kinetics of Rigid Body: Force and Acceleration	
Wed	10/28	Chapter 17 - Planar Kinetics of Rigid Body: Force and Acceleration	
Fri	10/30	Chapter 17 - Planar Kinetics of Rigid Body: Force and Acceleration	
Mon	11/2	Chapter 18 - Planar Kinetics of a Rigid Body: Work and Energy	Chapter 17 Homework
Wed	11/4	Chapter 18 - Planar Kinetics of a Rigid Body: Work and Energy	
Fri	11/6	Chapter 18 - Planar Kinetics of a Rigid Body: Work and Energy	
Mon	11/9	Chapter 18 - Planar Kinetics of a Rigid Body: Work and Energy	
Wed	11/11		
Fri	11/13	Chapter 19 - Planar Kinetics of a Rigid Body: Impulse and Momentum	Chapter 18 Homework
Mon	11/16	Chapter 19 - Planar Kinetics of a Rigid Body: Impulse and Momentum	
Wed	11/18	Chapter 19 - Planar Kinetics of a Rigid Body: Impulse and Momentum	
Fri	11/20	Chapter 19 - Planar Kinetics of a Rigid Body: Impulse and Momentum	
Mon	11/23	Exam 2 Review	Chapter 19 Homework
Wed	11/25		
Fri	11/27		
Mon	11/30	Exam 2 Review	

Wed	12/2	Exam 2
Fri	12/4	Final Exam Review
Mon	12/7	Final Exam Week
Wed	12/9	Final Exam Week
Fri	12/11	Final Exam Week

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.