

MET 3720 - Mechanisms

Fall 2026 Syllabus, Section 01, CRN 41182,

Credit hours: 3

Instructor

Brian Vuksanovich

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Public Instructor Information

Instructor Title: Professor

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

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Course Description

3720. Mechanisms. Graphical and analytical solution of problems involving displacement, velocity, and acceleration in machine mechanisms. Design of linkages with drafting software to provide required motions of machine members. Three hours lecture per week. Prereq.: C or better in MET 2616, "C" or better in MATH 1570 or "C" or better in MATH 1571. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Machines, Mechanisms, 4th ed	D. Myszka	0-13-215780-2

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

Schedule of Topics and Assignments

Week of	Reading(s)	Proposed Topic	Due/To Prepare for Class
8/24	Chapter 1	Review, Introduction, Kinematic Diagrams	
8/31	Chapter 2	Basic Mechanisms, Computer Modeling	Due 9/4 at 11pm: Problem 1.8, Due 9/4/2026 Problem 1.13, Due 9/4/2026
9/7	Chapter 3	Computer Modeling, Scalars & Vectors	Due 9/11 at 11pm: Problem 3-25, Graphical Vector Analysis. Due 9/11/2026 Problem 3-57, Due 9/11/2026 Problem 3-59, Due 9/11/2026
9/14	Chapter 4	Position and Displacement Analysis	Due 9/18 at 11pm: Homework 4-5, Due 9/18/2026
9/21	Chapters 1-4	Test 1	Due 9/25 at 11pm: Problem 4-22, Due 9/25/2026 Problem 4-78, Due 9/25/26
9/28	Chapter 6	Velocity Analysis	Due 9/30 at 6:45pm: Exam 1, Chapters 1, 3 and 4 (up to 4.4), Due 6:25 pm, 9/30/2026
10/5	Chapter 6	Velocity Analysis	Due 10/9 at 11pm: Problems 5-1 to 5-3, Due 10/9/2026



10/12	Chapter 7	Acceleration Analysis	Due 10/16 at 11pm: Problem 5-21, Due 10/16/2026 Problem 5-17, Due 10/16/2026
10/19	Chapter 7	Acceleration Analysis	Due 10/23 at 11pm: Chapter 5, Problem 5-40, Due 10/23/2026 Chapter 5, Problem 5-44, Due 10/23/2026 Chapter 5, Problem 5-36, Due 10/23/2026
10/26	Chapter 5	Mechanism Design	Due 10/28 at 6:45pm: Exam 2, up to Chapter 6.2.2, Due 6:30 pm, 10/28/2026 Due 10/30 at 11pm: Problem 6-9, Due 10/30/2026 Problem 6-16, Due 10/30/2026 Problem 6-23, Due 10/30/2026 Problem 6-25, Due 10/30/2026
11/2	Chapters 5-7	Test 2	
11/9	Chapter 8	Computer Aided Mechanism Analysis	Due 11/13 at 11pm: Problem 7-23, Due 11/13/2026
11/16	Chapter 8	Computer Aided Mechanism Analysis	
11/23	Chapter 9	Cam Design	
11/30	Chapter 10	Planetary Gears	Due 12/4 at 11pm: Four-Bar Analysis Project - Due Friday 12/4/2026
12/7	All Chapters	Final Exam	Due 12/7 at 7:40pm: Final Exam, December 7, 2026

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.