

- Course Number and Title: M E 326. Mechanical Design
- Catalog Description: Kinematics and dynamics of machinery, analytical and computer-aided design of kinematics and mechanism synthesis involving linkages cam and gear design, and motion analysis and balancing of forces. Project-based learning of multi-mechanism system design, analysis, fabrication and evaluation.
- Credit Hours: 3 Credits (3)
- Prerequisite(s) / Corequisite(s): Prerequisite(s): ENGR 234 and C E 301
Corequisite(s): None
- Required: Required for BSME Degree
- Course Availability: Fall and Spring Semesters (+Summer)
- Instructor (Usual): Dr. Vincent Choo (See <https://mae.nmsu.edu/people/faculty.html>)
- Textbook: Uicker, Jr., J.J., Pennock, G.R., and Shigley, J.E., *Theory of Machines and Mechanisms*, 6th Ed., Cambridge University Press, 2023 (ISBN-10: 1009303678 or ISBN-13: 978-1009303675)
- Course Learning Objectives: After completing this course, a student should be able to:
 - 1) Perform motion analysis of mechanisms involving various mechanical components such as linkages, cams and gears.
 - 2) Analyze and balance dynamic force in machines.
 - 3) Design mechanism synthesis that can function as required in machines.
 - 4) Understand ethics and professional responsibilities in engineering design.
- Topics Covered:
 - Motion analysis with linkages, cams and gears
 - Synthesis of mechanisms
 - Dynamic force analysis of machines and balancing
 - Computer-aided simulation and design of mechanisms
 - Team project of mechanism design, build and demonstration
 - Professional responsibilities in engineering design.