



Syllabus

MET 220 Machine Design I

General Information

Date

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Author

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Department

Science and Technology

Course Prefix

MET

Course Number

220

Course Title

Machine Design I

Course Information

Credit Hours

3

Lecture Contact Hours

2

Lab Contact Hours

3

Other Contact Hours

0

Catalog Description

Introduction to the analytic design of machine elements. Study of kinematics of mechanical linkages, cams, gears, gear trains. Ball and roller bearings. Belt and chain drives. Topics include belt and chain drives, ball and roller bearings, power transmission shafting, gears and gear trains.

Key Assessment

This course does not contain a Key Assessment for any programs

Prerequisites

None

Co-requisites

None

Grading Scheme

Letter

First Year Experience/Capstone Designation

This course DOES NOT satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed category

None

FLCC Values

Institutional Learning Outcomes Addressed by the Course

Inquiry

Perseverance

Interconnectedness

Course Learning Outcomes

Course Learning Outcomes

1. Design power delivery systems comprising of gears and gear trains, pulley/belts, sprocket/chains, and shafts
2. Analyze and design the components of a power delivery system

Program Affiliation

This course is required as a core program course in the following program

AAS Mechanical Technology

Outline of Topics Covered

- a. Overview of machine design
- b. Belt drives
- c. Chain drives
- d. Spur gear geometry
- e. Gear kinematics
- f. Gear train design
- g. Gear interference
- h. Gear bending stress
- i. Gear contact stress
- j. Bevel gear geometry
- k. Shaft design