

MOHAWK VALLEY COMMUNITY COLLEGE
UTICA AND ROME, NEW YORK

COURSE OUTLINE

STRENGTH OF MATERIALS: MECHANICAL

MT 230

I. Catalog Description

MT230 Strength of Materials – Mechanical

C 3, P 2, CR 4

The course introduces the fundamentals of strength of materials. Topics in stress analysis are included. Laboratory activities focus on testing procedures, reporting, and computer analysis. Prerequisites: MT126 Statics: Mechanical, CT121 Statics: Civil, or ES271 Engineering Statics.

II. Student Learning Outcomes

Upon successful completion of the course, the student will be able to:

1. ...set up, begin, execute, and solve basic non-calculus strength of materials problems (1)
2. ... look up key materials characteristics and values (3)
3. ... execute tensile testing, display and analyze the data, and interpret the results (4)
4. ...calculate shape properties of cross-sections and centers of gravity (1)
5. ...solve strength of materials design problems that require the selection of inexact solutions (2)
6. ...combine concepts and skills to solve fundamental mechanical strength problems (1)

∅ – References ETAC of ABET Program Outcome

III. Major Course Topics

Basic Material Considerations Stress, strain Stress & strain interrelationships Axial, direct, tension, compression, shear, torsion Material properties	Complex Considerations Thermal deformation Stress concentrations Combined stresses Beams Shear Force and Bending Moment Diagrams Beam Analysis,	Deflection Beam Design based on stress considerations. Other Structural Elements Columns Connections Pressure Vessels
---	---	--