

COLLEGE OF CHEMISTRY COURSE GUIDE (../INDEX.HTML)

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MSE 113 - MECHANICAL BEHAVIOR OR ENGINEERING MATERIALS (3 UNITS)

(Taken from the UC Berkeley Course Guide (<http://guide.berkeley.edu>))

COURSE OVERVIEW

SUMMARY

This course covers elastic and plastic deformation under static and dynamic loads. Prediction and prevention of failure by yielding, fracture, fatigue, wear and environmental factors are addressed. Design issues pertaining to materials selection for load bearing applications are discussed. Case studies of engineering failures are presented. Topics include engineering materials, structure-property relationships, materials selection for design, mechanical behavior of polymers and design of plastic components, complex states of stress and strain, elastic deformation and multiaxial loading, plastic deformation and yield criteria, dislocation plasticity and strengthening mechanisms, creep, effects of stress concentrations, fracture, fatigue, and contact stresses.

PREREQUISITES

C30/Mechanical Engineering C85 and Engineering 45

Fall only

WORKLOAD

TIME COMMITMENT

3 hours of lecture per week.

UC Berkeley Course Guide (<http://guide.berkeley.edu>)

COLLEGE OF CHEMISTRY PEER SERVICES

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