

Mechanism Design

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Introduction
degree of freedom
graph-theory type synthesis
graph-theory gear-train analysis
poles
relative poles
function generators
complex-number modeling, 2 positions
complex-number modeling, 3 positions
complex-number modeling, 4 positions
complex-number modeling, 5 positions
midterm examination
Roberts-Chebyshev theorem
synthesis of multi-loop mechanisms
precision-point spacing
transmission angle
order synthesis
rotatability criteria
centrodes, Cardanic motion
Kennedy-Aronhold theorem
curvature
velocity
acceleration
applications
final examination

Syllabus may be changed by the instructor.

Primary reference:

Sandor & Erdman *Advanced Mechanism Design, Analysis and Synthesis*, v.2,
Prentice Hall ISBN 0-13-011437-5 (out of print)

Other references:

Dijksman *Motion Geometry of Mechanisms*, Cambridge 1976
Hartenberg & Denavit *Kinematic Synthesis of Linkages* McGraw-Hill 1964.
Rosenauer & Willis *Kinematics of Mechanisms* Dover 1967 (originally
Assoc.Genl.Pub.Ltd. 1953)