

## THREE RIVERS COMMUNITY COLLEGE COURSE OUTLINE/SYLLABUS

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**Engineering Dynamics**

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**EGR K212**

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**Course Description:** Engineering applications of Newtonian mechanics to dynamic forces, translational motion, work, impulse and momentum will be taught. Topics include: kinematics, kinetics of particles and rigid bodies, vibrations, energy and momentum conservation.

**Text:** Engineering Mechanics - Dynamics, 11<sup>th</sup> Edition  
By R. C. Hibbeler, Published by Pearson/Prentice Hall  
ISBN 0-13-221504-7

**Prerequisites:** EGR\* K211 and MAT\* K256.

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### TOPICS/CONTENT

Week	Topic	Book Section	HW Assignment
1	Kinematics of Particles	12.1 – 12.3	12-6, 10, 14, 18, 30, 46, 60
2	Kinematics of Particles	12.4 – 12.6	12-69, 71, 79, 83, 91, 94, 98
3	Kinematics of Particles	12.7 – 12.9	12-101, 111, 115, 116, 174, 178, 189
4	Kinetics of Particles	13.1 – 13.3	13-7, 9, 21, 22, 29, 36, 41
5	Kinetics of Particles	13.4 – 13.5	13-55, 57, 61, 66, 71, 73, 76
6	Kinetics of Particles – Energy Methods	14.1 – 14.4	14-3, 9, 14, 22, 54, 59, 61
7	Kinetics of Particles – Energy & Momentum Methods	14.5 – 14.6 & 15.1 – 15.2	14-67, 84, 88, 15-19, 23, 26, 30
8	<b>Midterm Exam</b> - Kinetics of Particles – Momentum & Impact	15.3 – 15.4	15-34, 41, 54, 58, 64, 73, 84
9	Kinematics of Rigid Bodies	16.1 – 16.3	16-1, 5, 10, 13, 17, 19, 22
10	Kinematics of Rigid Bodies	16.4 – 16.7	16-35, 46, 52, 54, 57, 59, 61
11	Kinematics of Rigid Bodies	16.6 – 16.7	16-81, 86, 88, 94, 97, 105, 115
12	Planar Kinetics of a Rigid Body – Force & Acceleration	17.1 – 17.3	17-3, 23, 29, 39, 56, 66
13	Planar Kinetics of a Rigid Body – Force & Acceleration	17.4 – 17.5	17-79, 88, 96, 102, 108
14	Introduction to Vibrations	22.1 – 22.2	22-1, 3, 6, 10, 17
15	<b>Final Exam</b>		