COURSE OUTLINE

MCH111

Prepared: Douglas McKinnon   Approved: Greg Mapp

Course Code: Title	MCH111: APPLIED MECHANICS
Program Number: Name	4061: AVIATION TECHNOLOGY
Department:	AVIATION TECHNOLOGY
Course Description:	This course advances the study of mechanics into the area of dynamics. Topics include: KINEMATICS (uniformly accelerated motion, projectile motion, circular motion, Newton`s Second Law rectilinear and angular motion), inertia, dynamic equilibrium (work, energy forms, power, efficiency), impulse and momentum (linear and angular), dynamic friction.
Total Credits:	4
Hours/Week:	3
Total Hours:	45
Prerequisites:	MCH110
Essential Employability Skills (EES):	#1. Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. #3. Execute mathematical operations accurately. #4. Apply a systematic approach to solve problems. #5. Use a variety of thinking skills to anticipate and solve problems. #8. Show respect for the diverse opinions, values, belief systems, and contributions of others. #11. Take responsibility for ones own actions, decisions, and consequences.
General Education Themes:	Science and Technology
Course Evaluation:	Passing Grade: 50%, D
Evaluation Process and Grading System:	Quizzes is 30% of the total grade Tests is 70% of the total grade
Books and Required Resources:	Applied Mechanics for Engineering Technology by Keith M. Walker Publisher: Pearson Prentice-Hall Edition: 8

COURSE OUTLINE

MCH111

Prepared: Douglas McKinnon   Approved: Greg Mapp

ISBN: 9780131721517

Course Outcomes and Learning Objectives:	**Course Outcome 1.** Kinematics of Particles **Learning Objectives 1.** a) Distance and Displacement b) Speed and Velocity c) Acceleration d) Uniformly Accelerated Motion e) Falling Bodies – the acceleration due to gravity f) Projectiles and Projectile Motion **Course Outcome 2.** Rotational Motion **Learning Objectives 2.** a) Angular Displacement (radians) b) Angular Velocity c) Angular Acceleration d) Angular Motion with uniform acceleration e) Relationship between Rectilinear Motion and Angular Motion f) Normal and Tangential Acceleration g) Total Angular Acceleration

COURSE OUTLINE

MCH111

Prepared: Douglas McKinnon   Approved: Greg Mapp

Course Outcome 3.

Kinetics: Forces and General Planar Motion

Learning Objectives 3.

a) Newton's Second Law of Motion
b) Accelerating Forces – horizontal and vertical motion
c) 'Dynamic Equilibrium' – the Linear Inertia Force
d) 'Angular Dynamic Equilibrium '– the Angular Inertia Torque

Course Outcome 4.

Work, Energy and Power

Learning Objectives 4.

a) the concept of work
b) Work done by constant forces
c) Work done by variable forces
d) Energy
e) Gravitational Potential Energy
f) Kinetic Energy
g) Conservation of Energy – Translational
h) Moment of Inertia of bodies
i) Kinetic Energy of Rotation
j) Conservation of Energy – Angular
k) Power
l) Efficiency

COURSE OUTLINE

MCH111

Prepared: Douglas McKinnon   Approved: Greg Mapp

Course Outcome 5.

Impulse and Momentum

Learning Objectives 5.

a) Linear Impulse
b) Linear Momentum
c) Angular Impulse
d) Angular Momentum
e) Conservation of Momentum

Date: Friday, July 14, 2017