

Global Learning Semesters

Course Syllabus

Course: MATH-463 Mechanics

Department: Computer Science

Host Institution: University of Nicosia, Nicosia, Cyprus



Course Summary		
Course Code	Course Title	Recommended Credit Hours
MATH-463	Mechanics	3
Semester Offered	Contact Hours	Prerequisites
Spring	42	MATH 270: Calculus and Analytic Geometry III MATH 280: Linear Algebra MATH-330: Differential Equations
Department	Level of Course	Language of Instruction
Computer Science	Upper Division	English

Course Description

The following topics are covered: Newton's Laws for systems of point masses using vector formulations, central force problems, energy methods for dynamic systems, accelerating and rotating frames of reference, equations governing the general motion of rigid bodies, rotation matrices and transformation of axes, Lagrange's equations for the motion of dynamic systems, Lagrange's equations for linear oscillatory motion.

Instructor

Dr George Chailos

Course Aims and Objectives

This course introduces the student to the fundamental principles of Mechanics and familiarizes him with the basic techniques associated with the application of Newton's Laws to the general motion of rigid bodies. Moreover, it introduces the student to the basic theory of analytical mechanics and particularly to Lagrange's equations.

Teaching Methods

The course is delivered through a mixture of lectures, handouts, tutorials, practical exercises and assignments.

Course Teaching Hours

42 hours (42 hours lectures/presentations/tutorials). The course is delivered during the Spring semester in 14-weeks (3 hours/week).

Evaluation and Grading

Class Participation/Homework/Quizzes: 0-30%
Mid-Term(s): 30-50%
Final Exam: 40-50%

Readings and Resources

Required Textbook

Cunn M. and, Lunn M., A First Course in Mechanics, Oxford University Press, 1991. (ISBN 0-198-53433-7).