

The Hong Kong University of Science and Technology

Statics and Dynamics

MECH2020

3 credits

Pre-/co-requisites: MATH1013/ MATH1020/ MATH1023/ PHYS1112/ PHYS1152

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Course Description

[Briefly describe the course content, key topics or themes, objectives, methods of instruction, e.g., lectures, discussions, projects].

This is a required course for the BEng in Mechanical Engineering, focusing on fundamental analysis of the equilibrium and dynamic behavior of mechanical systems. Statics: equilibrium of particles and of rigid bodies; free body diagram; distributed forces; analysis of structures, e.g. trusses, frames and machines. Dynamics: kinematics of particles; kinetics of particles; Equations of motions; Newton's second law; Kinetics diagram; energy.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Assignments	20%
Online quizzes	30%
Final examination	50%

Required Texts and Materials

[List required textbooks, readings, and any other materials]

Vector Mechanics for Engineers: Statics

Vector Mechanics for Engineers: Dynamics

Beer & Johnston, McGraw-Hill

[Optional] Additional Resources

[List any additional resources, such as online platforms, library resources, etc.]