The Hong Kong University of Science and Technology

[Course Title] Solid Materials I

[Course Code] MECH2040 L1 & L2

[No. of Credits] 3

[Any pre-/co-requisites] MECH2020

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Course Description

stress and strain, analysis of structure members subject to axially loading, torsion and bending, transformation of stress and strain, buckling and energy method.

Lecture Contents:

Chapter 1 Concept of stress (~1.5 weeks)

Chapter 2 Stress and strain --- axial loading (~1.5 weeks)

Chapter 3 Torsion (~1 week)

Chapter 4 Pure bending (~1 week)

Chapter 5 Transverse loading (~1 week)

Chapter 6 Transformation of stress (~1 week)

Chapter 7 Design of beams for strength (~1 week)

Chapter 8 Deflection of beams (~1.5 week)

Chapter 9 Columns (~1 week)

Chapter 10 Energy methods (~1 week)

Assessments:

[List specific assessed tasks, exams, quizzes, their weightage]

Assessment Task	Contribution to Overall Course grade (%)
Homework	20%
Mid-Term Exam	35%
Final examination	45%

Required Texts and Materials

Beer, Johnson, DeWolf and Mazurek, *Mechanics of Materials*, 8th Edition, McGraw Hill.