

# The Hong Kong University of Science and Technology

## Engineering Materials II

**MECH3420**

**3 Credits**

**Pre-/co-requisites:** MECH 2410 Engineering Materials I or Equivalent

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### Course Description

MECH3420 Engineering Materials II serves as the gateway to the state - of - the - art world of engineering materials. We will help students master the foundation of engineering materials and empower them with crucial knowledge for innovations across various industries, by offering the following in this course:

- Comprehensive coverage in engineering materials electrical, thermal, magnetic, and optical properties;
- Polymer and Ceramics fundamentals that are crucial building blocks for green building materials;
- Aerospace metals unveiled so that students will know how Aluminum alloys, Titanium alloys, and Superalloys have made modern flights possible, efficient, and sustainable;
- Real - world applications to help students picture each engineering material in real - life scenarios.

The objectives of this course are helping students to:

- Enhance their employability in engineering materials related industry;
- Develop problem - solving skills crucial to real engineering challenges;
- Gain a competitive edge in both job hunting and further study arrangement.

### Assessments:

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

<b>Assessment Task</b>	<b>Contribution to Overall Course grade (%)</b>
In – Class activities & discussions	20%
One Assignment	10%
Mid – term exam	20%
Two Projects	30%
One final presentation about the projects	20%

### Required Texts and Materials

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

Materials Science and Engineering: An Introduction; 9th Edition, William D. Callister, Jr.

### **[Optional] Additional Resources**

Smart buildings : advanced materials and nanotechnology to improve energy-efficiency and environmental performance, Marco Casini

Introduction to aerospace materials, Adrian P. Mouritz