

# Introductory Material Science

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Course name : Introductory Material Science	Unit : 3 hrs/week : 3
Year : Sophomore	Course : Required
Classroom :	Office Hours :
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## A 、 Course Description :

Introductory Material Science provides broad subjects of the field of material for students who are interested in material. It explores the properties, manufacture and utilization of the traditional material (metals, polymer and ceramics) and advanced material (composite, bio-material and nano-material). The level of this course meets for the students who have learned college chemistry and physics.

At first, atomic structure, inter-atomic bonding, and structure of solid will be introduced and focused on development of student's ability to visualize how the formation of solid is. After learning the traditional and advanced material, the manufacture and utilization of materials will be discussed.

## B 、 Teaching Goals :

The objectives of this course are to intrigue student's interests , help student appreciate the underlying logic, help student arrive at answer to any practical problem, and raise ceaseless thought about the potential of material applied in wood products.

It is hoped that this course will enrich the material concepts for those who will not study material further and offer robust and solid foundation for those who study material more intensively and professionally.

## C 、 Class Schedule for the Fall semester in 2010

Schedule	Topic
Week 1	Overviews
Week 2	Atomic structure and inter-atomic bonding.

Week 3	Atomic structure and inter-atomic bonding.
Week 4	The structure of solid
Week 5	The structure of solid
Week 6	Metal
Week 7	Metal
Week 8	Polymer
Week 9	Midterm examination
Week 10	Polymer
Week 11	Ceramic
Week 12	Ceramic
Week 13	Composite
Week 14	Composite
Week 15	Bio-material
Week 16	Nano-material
Week 17	manufacture and utilization of materials
Week 18	Final examination

## D、Grade：

1. Presence, homeworks or reports 30%
2. Midterm test 30%
3. Final test 40%

## E、References：

1. William D. Callistr (2002), Materials Science and Engineering an Introduction, John Wiley & Sons, Inc.
2. Thornton Peter A. and Vito J. Colangelo (1985), Fundamentals of Engineering Materials, Prentice-Hall, Inc., Englewood Cliffs, N.J. °
3. Lee, Chun-Ying, Yun-Ming Xy ans Zhong-Ren Chen (1994) Materials Science and Engineering, Gau Li Library Inc.