

Science of Materials			
Registration Code	0062231	Credits	2.0
Course Category	Sciences Liberal		
Term (Semester) / Day / Period	G-III (2nd year, Fall Semester) / Tue. / 2 (10:30~12:00)		
Instructor	GELLOZ Bernard Jacques		
Target Schools (Programs)	Hu(J)·La(S)·Ec(S)·Sc(P·C·B)·En(P·C·Au)·Ag(B)		
<p>●Objectives of the course To learn about the fundamental and technological aspects of various materials, including metals, semiconductors, polymers, composites, dielectrics, and magnets. The course begins with an introduction of the atomic and crystal structures of materials. The tools used to describe crystal structures will be presented. These topics constitute the first fundamental step towards the understanding of materials properties. The relationships that exist between the structural elements of materials (microscopic properties) and their properties and performance (macroscopic properties) will be emphasized throughout the lectures. The materials mechanical, electrical, thermal and magnetic properties will be discussed both fundamentally and technologically.</p> <p>●Course Prerequisites</p> <p>●Course Contents Atomic Structure and Interatomic Bonding Crystal Structures Mechanical Properties Electrical Properties Thermal Properties Magnetic Properties Optical Properties</p> <p>●Evaluation methods Class attendance is required. A student will be regarded as ABSENT if he is absent without valid reason from any scheduled tests. A student who wishes to be considered as ABSENT must contact the instructor until the end of the final examination. Class attendance: 5% - Homework (online): 20% - Tests&Presentations: 75%</p> <p>●Related courses: Fundamentals of Physics I, II, III & IV, Fundamentals of Chemistry I ●Key Words: Material, metal, crystal, structure, mechanical, thermal, electrical, optical, magnetic.</p> <p>●Notice for students None</p>			
Textbook	William D. Callister, David G. Rethwisch: Fundamentals of Materials Science and Engineering: An Integrated Approach 4 th Ed. (John Wiley & Sons, 2012). Price: \$86.95		
Reference Book	William D. Callister, David G. Rethwisch: Materials Science and Engineering: An Introduction (John Wiley & Sons)		