

Biotechnology			
Registration Code	0064311	Credits	2.0
Course Category	Sciences Liberal		
Term (Semester) / Day / Period	G-I (1st year, Fall Semester) / Thu. / 3 (13:00~14:30)		
Instructor	CARTAGENA Joyce Abad		
Target Schools (Programs)	Hu(J)·La(S)·Ec(S)·Sc(P·C·B)·En(P·C·Au)·Ag(B)		
<p>●Objectives of the course</p> <ol style="list-style-type: none"> 1. To provide basic knowledge on biological processes that will help students understand the science behind the technologies 2. To present examples of actual technology used in the industry 3. To discuss the benefits and drawbacks of Biotechnology to humanity and the environment 4. To provide a venue for students to express their opinions regarding the issues related to Biotechnology <p>●Course Prerequisites None</p> <p>●Course Contents</p> <p>I. Introduction: The nature of Biotechnology</p> <ol style="list-style-type: none"> 1. Basic Science of Biotechnology 2. Technologies and Tools in Biotechnology I 3. Technologies and Tools in Biotechnology II <p>II. Products of Biotechnology:</p> <ol style="list-style-type: none"> 1. Microbial Biotechnology 2. Plant and Animal Biotechnology 3. Aquatic Biotechnology and Bioremediation 4. DNA Fingerprinting and Forensic Analysis 5. Medical Biotechnology <p>III. Biotechnology Regulations</p> <p>IV. Ethics and Biotechnology</p> <p>●Evaluation methods Attendance and class participation 30%, Group presentation 20%, In-class work/homework 20%, Examination 30%</p> <p>●Notice for students</p> <ol style="list-style-type: none"> 1. Course webpage NUCT (Nagoya University Collaboration and Course Tools; https://ct.nagoya-u.ac.jp/portal) is an online system that will be used for this course. PowerPoint slides, other learning materials (such as videos, websites, etc.) and home works will be accessible through this page. 2. Attendance In case of emergency or absence from class, students should contact the instructor as soon as possible either by email or phone. 3. Make-up exam Make-up exams may be given on condition that the student can provide acceptable reasons for his/her absence. 4. Personal electronics policy Personal electronic devices should not be visible or audible during class time. 5. Academic honesty and original work Cheating and copying (including plagiarism) will not be tolerated in this class. 			

6. Course Withdrawal

Students who wish to withdraw from the course will have to submit a duly accomplished Course Withdrawal Form by November 21, 2019.

Textbook	Introduction to Biotechnology 4/e 2019 (Pearson) ISBN 9780134650197 *or older edition Authors: W.J. Thieman and M.A. Palladino
Reference Book	

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)		