

## OCW (Open Course Ware) 강의 계획서

교과목 정 보	교과목명	대학생물학 <input type="checkbox"/> 2학점 <input checked="" type="checkbox"/> 3학점		수업년도	2014 - 1	
	소 속	과학기술대학 분자생명과학과		성 명	Bert Binas	
	강의요일	월, 화				
	강의시간	10:30~12:00				
	강의장소	y05-506				
교과목 개 요	<p>Summary of the course</p> <p>The course gives a brief overview of the core concepts in the life sciences, trying to emphasize aspects that are relevant for engineers. Since for this purpose, a custom-tailored textbook is not available, the proposed textbook is only a recommendation. Thus, parts of the textbook material are dropped in this course or shortened and replaced with material from other sources; consequently, the obligatory material relevant for preparing the exams are the slide shows that are supplied separately with the course. Note that because of the highly dynamic progress in the life sciences, course material may occasionally be modified during the semester.</p>					
수업목표	<p>Class aim</p> <p>Modern biology (including medicine) has become a major field for engineering applications, and living organisms have become an important inspiration for engineers. It is therefore essential for aspiring engineers to acquire the basic concepts of biology, and it is the goal of this course to provide these basics in brief form. Be aware that brief does not always mean simple.</p> <p>A second goal of this course is to strengthen the English language abilities of the students. The benefit is self-evident.</p>					
교 재	교재명		저자		출판사	
	Essential Biology 5th		Simon, Dickey & Reece		Pearson Education, Inc. (바이오 사이언스출판)	
평가방법	중간(%)	기말(%)	출석(%)	과제(%)	수업참여도(%)	기타(%)
	35	35	30			

주 강 계  별 의 획		Contents	Exam & 과제
	Week 1	Lecture 1: Preface: Why the life sciences are important for engineers Lecture 2: The subject of biology	
	Week 2	Lecture 3: The diversity, unity, and evolution of life Lecture 4: The chemical foundation of life	
	Week 3	Lecture 5: "Small" biomolecules Lecture 6: Macromolecules	
	Week 4	Lecture 7: A tour of the cell Lecture 8: The components of cells (Part 1)	
	Week 5	Lecture 9: The components of cells (Part 2) Lecture 10: Energy in biology; Enzyme catalysis	
	Week 6	Lecture 11: Biomembranes Lecture 12: Cellular respiration and fermentation	
	Week 7	Lecture 13: Photosynthesis Exam	Midterm exam
	Week 8	Lecture 14: Non-sexual reproduction; Sexual reproduction (Part 1) Lecture 15: Sexual reproduction (Part 2)	
	Week 9	Lecture 16: Patterns of inheritance (Part 1) Lecture 17: Patterns of inheritance (Part 2)	
	Week 10	Children's day (no lecture) Buddha's birthday (no lecture))	
	Week 11	Lecture 18: Structure and function of DNA Lecture 19: Mutations; Viruses and transposons	
	Week 12	Lecture 20: Regulation of gene expression (Part 1) Lecture 21: Regulation of gene expression (Part 2)	
	Week 13	Lecture 22: Cloning and stem cells Lecture 23: The basics of DNA technology	
	Week 14	Lecture 24: Applications of DNA technology Lecture 25: Genomics; Social aspects; The near future of biology	
	Week 15	Lecture 26: The process and culture of science (with emphasis on biology) Lecture 27: Review	
Week 16	Exam	Final exam	