



Course Code-Name	GBE 431 Stem Cell Biology								
Instructor	Assist. Prof. Dr. Fatih Kocabaş Genetics and Bioengineering Department, Room B504 0-216-578 0618 fatih.kocabas@yeditepe.edu.tr								
Course Schedule	Wed 09:00 - 10:50, Thursday 13:00 - 13:50 @ B317								
Prerequisite	None								
Office Hours	Tuesday 11:00 – 12:50 <i>by appointment only</i>								
Course Description	Stem cell biology								
Course Objectives	Embryonic stem cells; self-renewal capacity of stem cells; pluripotency, totipotency, omnipotency and multipotency; commitment and differentiation; adult stem cells; manipulation of stem cells and stem cell technology; human cloning; therapeutic cloning; tissue engineering.								
Required Textbook & Supplementary Materials	Study modules related to the course will be provided in PDF format (GBE 431 Stem Cell Biology Study Modules). Following books will also be used: Essentials of Stem Cell Biology ; Robert Lanza, Academic Press, 2. edition, 2009 Stem Cells Handbook ; Stewart Sell, Humana Press, 2. edition, 2013								
Grading	<table> <tr> <td>Homework/Quizzes:</td> <td>30%</td> </tr> <tr> <td>Mid-Semester Exam:</td> <td>30%</td> </tr> <tr> <td>Final Exam:</td> <td>40%</td> </tr> <tr> <td>TOTAL:</td> <td>100%</td> </tr> </table> <p>If you achieve less than 50% overall in the class, you will automatically get an “F”.</p>	Homework/Quizzes:	30%	Mid-Semester Exam:	30%	Final Exam:	40%	TOTAL:	100%
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TOTAL:	100%								
Make-up Exams	There is no planned make-up for any missing examination. You must demonstrate a valid excuse to re-take a missed exam. In addition, the school policies will be taken into account in cases when you miss a scheduled examination.								
Homework / Quizzes	It is highly recommended that you read the relevant chapters in the textbook as the course progresses and study for at least one hour for every one hour of lecture. A short quiz will be given every week based on the previous week’s reading assignments.								
Attendance	If you fail to attend less than 80% of the lectures from the beginning of the semester , you will get “FA” in the course and have no right to take BÜTÜNLEME exam. In addition, tardiness to class may incur a penalty of loss of marks.								
Academic Integrity	Adherence to the University Academic Integrity policy is expected. No breach of this policy will be tolerated. Any offenders, explicit or complicit, will be dealt with in accordance with the established University procedures.								



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Exam Schedule	Mid-Semester Exam	Wed, March 29 th	09:00-10:50
	Final Exam	May 15-28, 2017	Exact time and date will be announced later.

Week	Chapters	Topics
Jan 30-Feb 3	-	First meeting
Feb 6-10	Module 1 Module 3	Lec 1 - Career in Stem Cell Research Lec 2 - Introduction to Stem Cell Biology
Feb 13-17	Module 1 Module 3	Lec 3 - The Biology of Stem Cells Lec 4 - Embryonic Stem Cells
Feb 20-24	Module 4 Module 5	Lec 5 - Molecular Bases of Pluripotency Lec 6 - iPSCs
Feb 27-Mar 3	Lanza Chp 28 Module 6	Lec 7 - Adult Stem Cells Lec 8 - Hematopoiesis and HSCs
Mar 6-10	Lanza Chp 17 Module 2&9	Lec 9 - HSC transplantations & UCB SCs Lec 10 - SC Industry and Ethical Issues
Mar 13-17	-	<i>No planned lectures (Out of town due to Congress)</i>
Mar 20-24	Module 7 Module 8	Lec 11 - Special Topics in SCs 1 : Human-Animal Chimeras Lec 12 - Special Topics in SCs 2 : Stem Cell Applications
Mar 27-31	-	Midterm (No lecture on March 30th).
Apr 3-7	Lanza Chp 53 & 29	Lec 13 - Cancer stem cells Lec 14 - Mesenchymal Stem Cells
Apr 10-14	Lanza Chp 18-20,22	Lec 15 - Neuronal Stem Cells Lec 16 - Skin and Stem Cells
Apr 17-21	Module 10 Module 11-13	Lec 17 – Special Topic: Animal models in the context of stem cell research Lec 18 – Special Topic: Overview of Cloning, Egg Donation, and Cloning Scandal
Apr 24-28	Module 14-15 Lanza Chp 30	Lec 19 – Special Topic: Clinical Trials and Commercialization of Stem Cells Lec 20– Special Topic: Muscle Stem Cells
May 1-5	Lecture Slides	Lec 21 – Special Topic: Small Molecule Induced IPS Cells Lec 22 – Special Topic: CRISPR technology in stem cells
May 8-12	Lecture Slides	Lec 23 – Special Topic: Intestinal Stem Cells Lec 24 – Special Topic: Differentiation of Stem Cells into cardiac cells

Disclaimer: This syllabus provides a general plan and subject to change. The instructor reserves the right to make modifications in content and schedules as necessary to promote the best education possible within the prevailing conditions affecting this course. It is the student's responsibility to note the changes that may occur during the semester.