HANYANG UNIVERSITY

2019 HISS Syllabus

Stem Cell and Regenerative Medicine

Professor:	**Young Charles Jang, Ph.D., M.S.**
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Home Univ.:	**Georgia** Institute of **Tech**nology (Georgia Tech)
Dept.:	Biological Sciences / Biomedical Engineering

Description:	This lecture and discussion course will explore the fundamental principles and mechanisms that govern organismal aging (Why we age?) and contemporary strategies, technologies, and medical care to delay or reverse aging process.

Objective:	Understanding the fundamental principles of human aging and how lifestyle changes (based on scientific literature) can potentially delay aging and age-associated diseases.
Preparations:	No perquisite or textbook required. All lecture materials will be provided by lecturer.

Schedule:	Week 1	Lecture 1: Basic Concepts of Stem Cell Lecture 2: Embryonic Stem Cells Lecture 3: Induced Pluripotent Stem Cells Lecture 4: Direct reprogramming
	Week 2	Lecture 5: Tissue specific Stem Cells Lecture 6: Stem cells in Medicine Lecture 7: Practice problems / Review session 1 Lecture 8: **MIDTERM EXAM**
	Week 3	Lecture 9: Stem cell and disease I Lecture 10: Stem cell and disease II Lecture 11: Stem cell and aging I Lecture 12: Stem cell and aging II
	Week 4	Lecture 13: Bioengineering and stem cell Lecture 14: Future of stem cells and biotechnology Lecture 15: Practice problems / Review session 2 Lecture 16: **FINAL EXAM**

Evaluation:	Midterm (%)	Final (%)	Attendance (%)	Assignments (%)	Participation (%)	Etc. (%)
	40	40	5	10	5	

90-100% (A), 80-89% (B), 70-79% (C), 60-69% (D), ≤ 60% (F)

Exams (Mid-term and Final):
This course has a midterm exam and the cumulative final exam. The midterm exams will be held as "closed-book," and will be made up of multiple-choice questions based on topics, materials, and discussions presented in class.

Group Projects:
Groups of 4-5 students each will create a short video to explain a fundamental concept related to the course. Each student will be assigned to a group and a topic, and each group will complete only one group project during the semester. Group assignments, details, and deadlines will be provided in class. Video grades have a group and an individual component. The Group Component will be based on instructors' grades and peer evaluations. The same group project grade will be assigned to all members of a group; each group member is fully responsible for all submitted project work. The group video projects consist of 3 deliverables: a story board, a transcript, and a video posted to *Youtube* or Kakao group chat. The Individual Component includes peer-evaluation of all members of your team and peer-review of a subset of videos from other groups.