General Education Course Information Sheet

Please submit this sheet for each proposed course

Department & Course Number Molecular, Cell & Developmental Biology (MCD BIO) 90

Course Title Human Stem Cells in Medicine

Indicate if Seminar and/or Writing II course N/A

1 Check the recommended GE foundation area(s) and subgroups(s) for this course

Foundations of the Arts and Humanities

- Literary and Cultural Analysis
- Philosophic and Linguistic Analysis
- Visual and Performance Arts Analysis and Practice

Foundations of Society and Culture

- Historical Analysis
- Social Analysis

Foundations of Scientific Inquiry

- Physical Science
  With Laboratory or Demonstration Component must be 5 units (or more)
- Life Science X
  With Laboratory or Demonstration Component must be 5 units (or more)

2. Briefly describe the rationale for assignment to foundation area(s) and subgroup(s) chosen.

In this class, the students will learn about a biological product (human stem cells) and their use in the life Sciences (applications to medicine). The students will be introduced to the different types of stem cell therapies available today and the scientific justification (or not) for using stem cells. This course will not provide historical or political analysis related to the outcomes of stem cells in medicine.

3. "List faculty member(s) who will serve as instructor (give academic rank):
Lecturer

Do you intend to use graduate student instructors (TAs) in this course? Yes X No

If yes, please indicate the number of TAs 1:60

4. Indicate when do you anticipate teaching this course over the next three years: **Summers Only**

2013-2014	Fall		Winter		Spring	
	Enrollment		Enrollment		Enrollment	
2014-2015	Fall		Winter		Spring	
	Enrollment		Enrollment		Enrollment	
2015-2016	Fall		Winter		Spring	
	Enrollment		Enrollment		Enrollment	

5. GE Course Units

Is this an ***existing*** course that has been modified for inclusion in the new GE? Yes No X

If yes, provide a brief explanation of what has changed.

Present Number of Units: Proposed Number of Units: 5.0

6. Please present concise arguments for the GE principles applicable to this course.

❑ General Knowledge	Stem cells have critical implications for human health, yet the general public does not know the difference between different types of stem cells, and they can not judge good quality scientific investigation leading to the safe use of stem cells in humans, verses scientific justification that is purely speculative and could cause human harm. The course aims to increase the student's general knowledge of stem cells and also to teach the fundamental principles on how a scientist judges the effectiveness of stem cells before use in human medicine.
❑ Integrative Learning	Students will learn about stem cell ethics, stem cell biology and federal and state regulations for stem cell use in medicine. Furthermore, students will be introduced to how stem cell science progresses from bench to bedside including how scientists formulate a hypothesis, perform a stem cell experiment and interpret results. Students will also be exposed generally to the types of experiments that lead to in-human stem cell trials overseen by the Food and Drug administration.
❑ Ethical Implications	Ethics is not the focus of this course. The Department of MCDB has an entire course focused on stem cell ethics called MCD BIO 50. This new GE does not require MCD BIO 50 as a pre-requisite and the ethical questions are slightly different than the ones addressed in MCD BIO50, which focuses more on the ethics of the using human embryos, human cloning and egg donation for stem cell research. The Ethical implications of the proposed new course will cover the ethics and responsibilities of scientists to accurately present and interpret stem cell data to the general public, the ethics of doctors who experimentally administer stem cell therapies for-profit and the ethics of patient advocates who are often not scientist and will lobby for funding and research into specific sub-specialties of stem cell science.
❑ Cultural Diversity	The course exhibits cultural diversity in presenting diverse International perspectives on the use of stem cells in medicine, and the different viewpoints of countries as to the required scientific justification before a treatment is used to treat human suffering and well being. We will also be discussing the concept of tissue banking for future medical use and the challenges associated with banking and identifying stem cell types for treating an ethnically diverse population.
❑ Critical Thinking	The students will be asked to think critically about scientific research that has lead to stem cell therapies in human medicine, and whether in specific examples there is sufficient scientific justification for stem cell use in humans. The students will be asked to understand personal biases in critical thinking that may preclude the ability to seek the truth in a problem.
❑ Rhetorical Effectiveness	In the discussion sections, students will develop arguments for or against the feasibility of various stem cell therapies. They will debate in-class whether specific stem cell treatments have sufficient scientific evidence to justify use in the medical profession. Students will also develop written press releases intended to persuade their target audience towards the dangers or advantages of specific stem cell therapies in medicine.
❑ Problem-solving	Quizzes will be held weekly to determine students understanding of human stem cell therapies, and based upon the knowledge gained in this course will be asked to come up with real-world solutions to prevent the misuse of stem cells in society in the future.

- ❑
- ❑ Library & Information Literacy

The reading list is structured as a mix of books, newspaper articles, and primary journal articles. For their written assignments, students will need to demonstrate a familiarity with these literary sources and use the library and Internet to identify additional sources from the appropriate fields. Students will be required to familiarize themselves with the Food and Drug Administration (FDA) clinical trial database and be competent to understand the stem cell type being used in specific clinical trials.

(A) STUDENT CONTACT PER WEEK (if not applicable write N/A)

1.	Lecture:	**3.5**	(hours)
2.	Discussion Section:	**1.5**	(hours)
3.	Labs:	**N/A**	(hours)
4.	Experiential (service learning, internships, other):	**N/A**	(hours)
5.	Field Trips:	**N/A**	(hours)

(A) TOTAL Student Contact Per Week **5.0** **(HOURS)**

(B) OUT-OF-CLASS HOURS PER WEEK (if not applicable write N/A)

1.	General Review & Preparation:	**1**	(hours)
2.	Reading	**6**	(hours)
3.	Group Projects:	**1**	(hours)
4.	Preparation for Quizzes & Exams:	**1**	(hours)
5.	Information Literacy Exercises:	**N/A**	(hours)
6.	Written Assignments:	**1**	(hours)
7.	Research Activity:	**N/A**	(hours)

(B) TOTAL Out-of-class time per week **10.0** **(HOURS)**

GRAND TOTAL (A) + (B) must equal at least 15 hours/week 15.0 **(HOURS)**

MCD BIO 90 - Human Stem Cells and Medicine
Summer 2014

Course Description
Stem cells have the potential to revolutionize the way medicine is practiced today. Some stem cell therapies are already used successfully to treat thousands of people worldwide. Other stem cell therapies are considered experimental therefore treatments must be monitored by the Food and Drug Administration to ensure safety and efficacy. Finally, some stem cell therapies are offered with minimal scientific justification relying on hope and hype rather than scientific fact. The goal of this course is to explore the use of stem cells in modern medicine and to take a close look at the science behind some of todays most famous and infamous stem cell medical applications.

Reading list:

Reading assignments for this course will come from one textbook, as well as internet searches, newspapers, magazines, and blogs. Additionally, the students will be required to watch and discuss a video segment from the CBS television program "60 Minutes."
Specifically reading and reference sources for this class will be;

1) Text book: *Stem Cells for Dummies*. Lawrence S.B. Goldstein and Meg Schneider
2) Reference material from the International Society for Stem Cell Research (ISSCR) www.isscr.org web site. Specifically, at this site students will be reviewing information from the following:
    - ISSCR Patient Handbook on Stem Cell Therapies
    - A Closer Look at Stem Cell Treatments
    - How Science becomes Medicine
3) View CBS' 60 Minutes (U.S.) 2010 segment, "***21st Century Snake Oil***," Parts 1, 2, as well as two Extras – *The Promise of Stem Cell Treatment* and *A Warning About Stem Cell Fraud*
4) Identifying different types of stem cell trials registered by the U.S. Food and Drug administration (www.fda.gov)
5) Award winning stem cell blogger 'Paul Knoepfler at the site www.ipscell.com

Grading:
Midterm 35%
Final 50%
Quizzes in each Discussion Session 10%
Participation in Discussion Session 5%

Lecture and Discussion Schedule

Week 1
Lecture 1: Why are scientists and doctors excited about stem cells?
Lecture 2: Introduction to the controversies in stem cell science

Discussion session: "All a-twitter" social media and stem cells in medicine

Week 2
Lecture 3: Regulation and the role of the US Food and Drug Administration (FDA)
Lecture 4: Stem Cell Tourism

Discussion session: Sale of cord blood stem cells from Global Laboratories, why was the FDA and the Federal Bureau of Investigations involved?

Week 3
MIDTERM
Lecture 5: Patient advocates for stem cell science and medicine

Discussion session: What is the evidence that cord blood stem cells work?

Week 4
Lecture 7: Creating a stem cell match for a sibling
Lecture 8: Blood Stem Cells in the bone marrow and treating blood diseases

Discussion session: Interpreting a scientific paper, how much evidence is needed before using human stem cells to treat patients?

Week 5
Lecture 9: Mending a broken heart
Lecture 10: Embryonic Stem Cells and treating eye disease

Discussion session: A class ethics debate. Who should pay for stem cell therapy?

Week 6
Lecture 11: Stem cell treatments in athletes
Lecture 12: Interview with a stem cell scientist

Discussion session: Stem cells in cosmetics and beauty.

Approve or Deny a New Course Proposal

Required fields are marked with a red letter **R**.

Molecular, Cell, & Developmental Biology 90
Human Stem Cells and Medicine

Department R
Enter 7-character code: MCD BIO or Browse for name: Molecular, Cell, & Developmental Biology

Requested Course Number R
Enter 7-character code: MCD BIO or Subject Area - Browse for code: Molecular, Cell, & Developmental Biology
Course Number: prefix | 90 | suffix

Check if Multiple Listed
☐ Multiple Listed Course

Check if Concurrent
☐ Concurrent Course

Course Catalog Title R
Human Stem Cells and Medicine

Short Title
STEM CELLS & MED (19 character limit)

Units R
◉ Fixed: 5
○ Variable: Minimum Maximum
○ Alternate: or

Grading Basis R
Letter grade or Passed/Not Passed

Instructional Format R
Primary Format: Lecture — Hours per week: 3.5
Secondary Format: Discussion — Hours per week: 1.5 Next

TIE Code R
LECS - Lecture (Plus Supplementary Activity) [T]

GE Requirement R
◉ Yes ○ No
If yes, submit a proposal to the GE Governance Committee.

Major or Minor Requirement
○ Yes ◉ No
If yes, submit program change memo to College or School Faculty Executive Committee.

Requisites
Include enforcement level (enforcement, warning, none).

None.

Course Description R
Stem cells have the potential to revolutionize the way medicine is practiced today. Some stem cell therapies are already used successfully to treat thousands of people worldwide. Other stem cell therapies are considered experimental therefore treatments must be monitored by the Food and Drug Administration to ensure safety and efficacy. Finally,

1080 characters remaining

Justification R
Justify the need and state the objectives for this new course. Identify effects on other courses in your department or on courses or curriculum in other departments. List departments and chairs consulted and summarize responses.

In this class, the students will learn about a biological product (human stem cells) and their use in the Life Sciences (applications to medicine). The students will be introduced to the different types of stem cell therapies available today and the scientific justification (or not) for using stem cells. This course will not provide historical or

		1080 characters remaining
Syllabus	R	A syllabus and/or reading list is required for new courses. File *MCD BIO 90 Syllabus - Summer 2014.pdf* was previously uploaded. You may view the file by clicking on the file name. Upload syllabus file. Read the upload instructions for help.
Supplemental Information		
Grading Structure	R	Include midterm and final examination information. Midterm - 35% Final - 50% Quizzes in each discussion session - 10% Participation in discussion sections - 5% 1080 characters remaining
Effective Date	R	Summer 1 2014
Discontinue Date		Select Term Select Year
Instructor	R	Name: Amander Clark, Ph.D. Title: Professor Next
Quarters Taught		☐ Fall ☐ Winter ☐ Spring ☑ Summer
Contact		Name: **CONSTANCE FIRESTONE** E-mail: **cfire@mcdb.ucla.edu**
Routing Help		

ROUTING STATUS

Role:	FEC School Coordinator - Castillo, Myrna Dee Figuracion (MCASTILLO@COLLEGE.UCLA.EDU) - 45040
Status:	Pending Action

Role:	Department Chair or Designee - Firestone, Constance Louise (CFIRE@MCDB.UCLA.EDU) - 57109
Status:	Returned for Additional Info on 10/17/2013 3:47:53 PM
Changes:	No Changes Made
Comments:	See Chair's approval from designee Pamela Hurley.

Role:	Department Chair or Designee - Hurley, Pamela S (PAMELAH@MCDB.UCLA.EDU) - 44256
Status:	Approved on 10/17/2013 2:01:04 PM
Changes:	No Changes Made
Comments:	Pamela Hurley, Ed.D. is acting on behalf of Professor Utpal Banerjee, MCDB Department Chair.

Role:	Initiator/Submitter - Firestone, Constance Louise (CFIRE@MCDB.UCLA.EDU) - 57109
Status:	Submitted on 10/17/2013 1:11:30 PM
Comments:	Initiated a New Course Proposal

REVIEWER'S ACTION

For help with any element, click on its label link.

Action	○ Approved ○ Re-routed ○ Denied **Required: If you are a staff member acting as designee for a chair or faculty coordinator, note the name and role of the person you are representing in the comment box.**

Comment

1080 characters remaining

Route Form Now | Back to Course List | Main Menu

Comments or questions? Contact the Registrar's Office at
cims@registrar.ucla.edu or (310) 206-7045