

# **Stem Cells in Health, Disease and Society**

## **GENM0299**

### **Course Outline**

#### **Summer session 2013**

**Monday 7 January to Friday 1 February**

**Subject authority:**

**Professor Peter Gunning, Professor Edna Hardeman**

#### **OBJECTIVES OF THE COURSE**

The objectives of this course are:

- a) to introduce the role of stem cells in development and function of the human body
- b) to explain the potential uses of stem cells in medical treatments of a range of human diseases
- c) to give students the opportunity to perform laboratory experiments with mouse embryonic and adult stem cells
- d) to discuss the impact of stem cells on society and the media
- e) to evaluate the legal restrictions on stem cell research and the extent to which it covers the concerns of society

#### **IMPORTANT NOTES:**

- Students must wear enclosed shoes and a lab coat in the laboratory
- No eating or drinking in the laboratory
- Mobile phone must be switched off during all lectures and laboratories

#### **COMMUNICATION**

Email is the official means by which the School of Medical Sciences at UNSW will communicate with you. It is recommended that you check your email every day.

#### **PLAGIARISM**

UNSW does not tolerate plagiarism in submitted written work. Please refer to <https://my.unsw.edu.au/student/atoz/Plagiarism.html> for more details about what constitutes plagiarism.

#### **ATTENDANCE**

Students are expected to be regular and punctual in attendance at all classes in the course.

Please note that attendance will be recorded for laboratory and workshop classes and students are expected to attend at least 80% of these sessions.

## APPLICATIONS FOR CONSIDERATION

Students must submit an application for consideration within three working days when sickness or circumstance beyond their control prevent them from completing a course requirement or significantly affect their performance in examination, class test, laboratory test, etc. The form can be downloaded from:

<https://my.unsw.edu.au/student/academiclife/Forms.html#SpecialConsideration>

## LECTURERS

Professor Peter Gunning  
Professor Edna Hardeman

## PRACTICAL CLASSES

Dr Jeff Hook  
Professor Peter Gunning  
Professor Edna Hardeman

## COURSE STRUCTURE AND TEACHING ACTIVITIES

This is a 6 unit of credit course and consists of:

- 18 lectures. All lectures are held in Pioneer Theatre, AGSM except 21/1/13 which is in Room 310 of the Mathews Building, on the third floor
- 6 laboratory sessions in Lab 329, BABS
- 4 workshop sessions are held in Rms 109/110, Wallace Wurth

## ASSESSMENT PROCEDURE

There will be three quizzes each consisting of MCQs (15% of final mark each), one essay (35 % of final mark) and lab performance (20%)

## LECTURES, PRACTICAL CLASSES AND TUTORIAL SCHEDULE

### **Week One**

#### **Day 1- Monday 7 January 2013**

9:30 to 10:00 Welcome by Professors Peter Gunning and Edna Hardeman

10:00 to 11:00 "Core Concepts: Tissues and Cells"

Lecture by Prof Peter Gunning

11:00 to 11:30 Morning Tea

11:30 to 12:30 "Regenerative Medicine"

Lecture by Prof Edna Hardeman

12:30 to 1:30 Lunch

1:30 to 2:00 Lab introduction

2:00 to 4:00 Laboratory 1 "Morphology of embryonic stem cells and fibroblasts" by Dr Jeff Hook, Profs Peter Gunning and Edna Hardeman

**Day 2- Tuesday 8 January 2013**

10:00 to 11:00 "Embryonic Stem Cells"

Lecture by Prof Peter Gunning

11:00 to 11:30 Morning Tea

11:30 to 12:30 "Adult Stem Cells"

Lecture by Prof Edna Hardeman

12:30 to 1:30 Lunch

1:30 to 2:00 Lab introduction

2:00 to 4:00 Laboratory 2 "Growth of embryonic stem cells and fibroblasts" by Dr Jeff Hook, Profs Peter Gunning and Edna Hardeman

**Day 3- Wednesday 9 January 2013**

**NO CLASSES – STUDY DAY**

**Day 4- Thursday 10 January 2013**

10:00 to 11:00 QUIZ-1

11:00 to 11:30 Morning Tea

11:30 to 12:30 Revision Tutorial with Profs Peter Gunning and Edna Hardeman

12:30 to 1:30 Lunch

1:30 to 2:00 Lab introduction

2:00 to 4:00 Laboratory 3 "Manipulation of embryonic stem cell fate" by Dr Jeff Hook, Profs Peter Gunning and Edna Hardeman

**Day 5- Friday 11 January 2013**

10:00 to 11:00 "Cloning"

Lecture by Prof Peter Gunning

11:00 to 11:30 Morning Tea

11:30 to 12:30 "Neurodegenerative Diseases"

Lecture by Prof Edna Hardeman

12:30 to 1:30 Lunch

1:30 to 2:00 Lab introduction

2:00 to 4:00 Laboratory 4 "Evaluation of embryonic stem cell differentiation" by Dr Jeff Hook, Profs Peter Gunning and Edna Hardeman

**Week Two****Day 6- Monday 14 January 2013**

10:00 to 11:00 "Stem Cells and Drug Development"

Lecture by Prof Peter Gunning

11:00 to 11:30 Morning Tea

11:30 to 12:30 "Stem Cell Therapy"

Lecture by Prof Peter Gunning

12:30 to 1:30 Lunch

1:30 to 2:00 Lab introduction

2:00 to 4:00 Laboratory 5 "Muscle stem cell growth" by Dr Jeff Hook, Profs Peter Gunning and Edna Hardeman

**Day 7- Tuesday 15 January 2013**

10:00 to 11:00 "Muscle Stem Cell Transplantation"

Lecture by Prof Edna Hardeman

11:00 to 11:30 Morning Tea

11:30 to 12:30 Revision Tutorial with Profs Edna Hardeman and Peter Gunning

12:30 to 1:30 Lunch

1:30 to 2:00 Lab introduction

2:00 to 4:00 Laboratory 6 "Muscle stem cell differentiation" by Dr Jeff Hook and Profs Peter Gunning and Edna Hardeman

**Day 8- Wednesday 16 January 2013**

**NO CLASSES – STUDY DAY**

**Day 9- Thursday 17 January 2013**

10:00 to 11:00 QUIZ-2

11:00 to 11:30 Morning Tea

11:30 to 12:30 Revision Tutorial with Profs Peter Gunning and Edna Hardeman

12:30 to 1:30 Lunch

1:30 to 2:00 Selection of Workshop topics

2:00 to 4:00 Workshop preparation with Profs Peter Gunning and Edna Hardeman

**Day 10- Friday 18 January 2013**

10:00 to 11:00 "Stem Cell Myths and Challenges"

Lecture by Prof Peter Gunning

11:00 to 11:30 Morning Tea

11:30 to 12:30 "Concerns of Society"

Lecture by Prof Peter Gunning

12:30 to 1:30 Lunch

1:30 to 3:30 Workshop preparation with Profs Peter Gunning and Edna Hardeman

**Week Three****Day 11- Monday 21 January 2013 Today's lectures are in Mat 310**

10:00 to 11:00 "Human Life and Personhood"

Lecture by Prof Peter Gunning

11:00 to 11:30 Morning Tea

11:30 to 12:30 "Legal Status of the Embryo and its Cells"

Lecture by Prof Peter Gunning

12:30 to 1:30 Lunch

1:30 to 3:30 Workshop group presentations

**Day 12- Tuesday 22 January 2013**

10:00 to 11:00 "Laws Regarding Embryonic Stem Cells in Australia"

Lecture by Prof Peter Gunning

11:00 to 11:30 Morning Tea

11:30 to 12:30 Revision Tutorial with Profs Peter Gunning and Edna Hardeman

12:30 to 1:30 Lunch

1:30 to 3:30 Workshop group presentations

**Day 13 – Wednesday 23 January 2013**  
**NO CLASSES – STUDY DAY**

**Day 14 – Thursday 24 January 2013**

10:00 to 11:00 QUIZ-3

11:00 to 11:30 Morning Tea

11:30 to 12:30 “Science and Society in Perspective”

Lecture by Prof Peter Gunning

12:30 to 1:30 Lunch

1:30 to 3:00 Selection of Assignment Topics

**Assignments due Friday 1 February 2013 at 5pm**