

CEDB30004 Stem Cells in Development & Regeneration

Credit Points:	12.50																		
Level:	3 (Undergraduate)																		
Dates & Locations:	This subject is not offered in 2014.																		
Time Commitment:	Contact Hours: 36 hours Total Time Commitment: 120 hours																		
Prerequisites:	<p>Either of the following:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>CEDB20003 Fundamentals of Cell Biology</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>ZOOL20006 Comparative Animal Physiology</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>GENE20001 Principles of Genetics</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>BIOM20001 Molecular and Cellular Biomedicine</td> <td>Semester 1</td> <td>25</td> </tr> <tr> <td>BCMB20002 Biochemistry and Molecular Biology</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> </tbody> </table> <p>or any other subject with the approval of co-ordinators.</p>	Subject	Study Period Commencement:	Credit Points:	CEDB20003 Fundamentals of Cell Biology	Semester 1	12.50	ZOOL20006 Comparative Animal Physiology	Semester 2	12.50	GENE20001 Principles of Genetics	Semester 1	12.50	BIOM20001 Molecular and Cellular Biomedicine	Semester 1	25	BCMB20002 Biochemistry and Molecular Biology	Semester 1, Semester 2	12.50
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Corequisites:	None.																		
Recommended Background Knowledge:	Biological/biomedical 200 level knowledge																		
Non Allowed Subjects:	None.																		
Core Participation Requirements:	<p><p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.</p> <p>It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability</p></p>																		
Contact:	<p>Subject Coordinators</p> <p>Dr Gary Hime g.hime@unimelb.edu.au (mailto:g.hime@unimelb.edu.au)</p> <p>Dr Mary Familiari m.familiari@unimelb.edu.au (mailto:m.familiari@unimelb.edu.au)</p> <p>Administrative Coordinator</p> <p>Kim Williams BiomedSci-AcademicServices@unimelb.edu.au (mailto:BiomedSci-AcademicServices@unimelb.edu.au)</p>																		
Subject Overview:	This subject introduces students to advanced research topics in modern stem cell biology with respect to current roles of stem cells in development of organisms, regenerative medicine and ethical considerations of biotechnological applications.																		

	<p>Different types of stem cells will be discussed with emphasis on embryonic stem cells compared to adult stem cells and roles in embryonic development and adult tissue regeneration. Diseases such as cancer, anaemia etc., will be discussed in terms of dysregulation of tissue regeneration.</p> <p>New therapies based on stem cells such as in vitro production of organs, stem cell transplantation and cloning will be presented along with the ethical dilemmas posed by these advances. The subject will also cover the latest advances in iPS cell technology and what this tells us about the nature of pluripotency.</p>
Learning Outcomes:	<p>To develop student awareness and knowledge of the major concepts relating to stem cell biology and regenerative medicine;</p> <p>To cultivate an appreciation and understanding of the major areas of ethical contention in medical applications of stem cell biology;</p> <p>To increase students' knowledge of the experimental approaches and strategies used in stem cell research and medicine, and to think of ways that these could be applied to specific questions in biology or medicine;</p> <p>To teach students to think critically about the new potentials, limitations and weaknesses that are associated with scientific advances in stem cell biology.</p>
Assessment:	1 x 2 hour end of semester exam (70%) 2 x 40 minute multiple choice tests, one in mid semester and one late semester (10% each) 1 x written report (1200 words) due towards end of semester (10%)
Prescribed Texts:	None. Readings will be supplied.
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	<p>Analysing complex scientific issues;</p> <p>Making a constructive critique of a scientific proposal;</p> <p>Performing written communication skills at a high standard;</p> <p>Contributing to intellectual discussion;</p> <p>Analysing how science interacts with society.</p>
Related Majors/Minors/ Specialisations:	<p>Animal Cell Biology (specialisation of Cell and Developmental Biology major)</p> <p>Molecular Biotechnology (specialisation of Biotechnology major)</p> <p>Plant Cell Biology and Development (specialisation of Cell and Developmental Biology major)</p> <p>Reproduction and Development (specialisation of Cell and Developmental Biology major)</p> <p>Science credit subjects* for pre-2008 BSc, BASc and combined degree science courses</p> <p>Science-credited subjects - new generation B-SCI and B-ENG.</p> <p>Selective subjects for B-BMED</p>