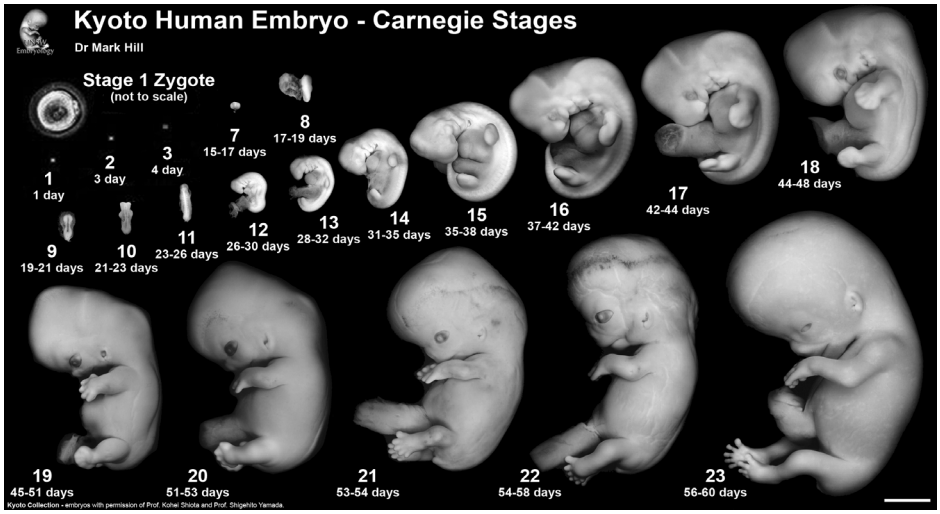
UNSW SYDNEY | Australia's Global University

Faculty of Medicine
School of Medical Sciences

ANAT 2341
Embryology

Course Outline



The first 8 weeks of human embryological development.

TERM 3, 2021

CRICOS Provider Code 00098G

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Please read this manual/outline in conjunction with the following pages on the School of Medical Sciences website:

- Advice for Students
- Learning Resources

(or see "STUDENTS" tab at medicalsciences.med.unsw.edu.au)

COURSE INFORMATION

ANAT2341/Embryology is a (6 UOC) course for Medical Sciences, Science, and other students. This course provides students with an overview of human development including a grounded understanding of early human embryogenesis, and the origin and development of the major organs and organ systems of the body. These concepts are applied to the contexts of major human birth abnormalities, and to stem cell biology and regenerative medicine. The course will also expose students to evidence-based developmental and/or stem cell biology research for human health that occurs within Australia. The course is remotely delivered with face-to-face and online learning activities.

STUDENT LEARNING OUTCOMES

At the completion of the course, students should be able to:

1. Describe human development and organogenesis, stem cell biology and regeneration, and how major congenital birth abnormalities arise.
2. Apply basic practical laboratory skills and work with embryo and regeneration models, annotate embryonic structures, and define developmental and regenerative stages.
3. Communicate the contents of primary research articles in the field of stem cell research effectively and appropriately to an audience.
4. Work effectively within a small team to complete academic tasks.
5. Demonstrate critical thinking and problem-solving skills in diverse contexts.
6. Self-manage and work independently with an ability to take responsibility for their own learning, and an appreciation of the value of learning.

HOW THE COURSE RELATES TO THE MEDICAL SCIENCES / SCIENCES PROGRAMS

ANAT2341 is a Stage 2 course, held in term 3. The course builds on foundational concepts of ANAT2241 (Histology: Basic and Systematic) and BABS2202 (Molecular Cell Biology 1). Your knowledge on embryological development will be directly applied in subsequent courses in the program to enable a deeper understanding of the human body's structure and function, and mechanisms of disease. The embryology course is appropriate for a graduate degree that includes anatomy, physiology, or pathology, and it fits well together with courses such as molecular biology, cell biology and histology.

APPLICATION OF EMBRYOLOGY IN FUTURE CAREERS

The embryology course prepares graduates for a wide range of careers. Graduates can apply their knowledge of anatomy and developmental biology directly, such as in the biomedical sphere. Some of these include biomedical research scientist, science educator, policy advisor, *in vitro* fertilization (IVF) scientist and forensic scientist. Alternatively, graduates can use the general skills and knowledge acquired to pursue careers in other areas.

UNITS OF CREDIT AND HOURS OF STUDY

ANAT2341/Embryology is a six units-of-credit (6 UOC) course. It is a blended learning course (i.e. has both remotely delivered face-to-face and online learning activities) and consists of 14 hours per week of scheduled learning activities. These comprise of two 1-hour online lectures, one 2-hour online practical sessions (labs), and 10 hours of independent study each week. Students are expected to attend all scheduled learning activities. Please note that for a 6 UOC course, UNSW recommends 150 hours of study and learning activities. The scheduled formal learning activities in this course consist of approximately 50 hours throughout the trimester and students are expected to contribute the remaining number of hours in team learning activities, self-directed learning and study.

COURSE PREREQUISITES

ANAT2241 or BABS2202.

COURSE CO-ORDINATOR

Dr. Reza Shirazi

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Dr. Hermily-Lourdes Geronimo

h.geronimo@unsw.edu.au, Wallace Wurth Building, Level 1, Room 101, Tel: +61 02 9348 0138

ASSESSMENTS

Assessment	Type	Style	Weighing	CLO	Graduate Attributes
Continuous assessment	Individual	Weekly MCQs	25%	1, 2, 5, 6	1, 2, 6, 8
Midterm assessment	Individual	MCQs/SAQs	25%	1, 5, 6	1, 2, 6, 8
End-of-term assessment	Individual	MCQs/SAQs	25%	1, 5, 6	1, 2, 6, 8
Group project assessment	Group	Group Essay (15%) Peer group essay review (5%) Oral group presentation (mandatory) Personal reflection (5%)	25%	1, 2, 3, 4, 5, 6	1, 2, 3, 4, 5, 6, 7, 8

Continuous assessment (CLO1, 2, 5, 6):
Weekly online multiple choice question (MCQ) quizzes will be completed prior to the practical session. These quizzes consist of 5 MCQs which assess student learning of the lecture and practical session content of the preceding week. For instance the week 2 quiz will assess week 1 lecture and practical session content, etc. The quizzes' examinable material is summarized in weekly lecture and practical slides and notes as well as in the UNSW embryology webpages accessed via links on Page 10 of this course manual, and on Moodle. This assessment will provide students with regular feedback on their content mastery. The assessment is conducted online on Moodle. The students' 5 best quiz results will contribute to 25% of the overall course grade.

Mid-term assessment (CLO1, 5, 6):
This mid-term assessment will consist of MCQs and short answer questions (SAQs), which will assess students' learning of the lecture content of course weeks 1-4. Examinable material is summarized in weekly lecture and practical slides and notes as well as in the UNSW embryology webpages that you can access via the hyperlinks in the Course Program on Page 10 of this course manual, and that will also be available on Moodle. The assessment is conducted online on Moodle. This assessment will contribute towards 25% of your overall course grade.

Group project assessment (CLO1, 2, 3, 4, 5, 6):
This assessment will be completed in groups of approximately four students and will run throughout the term. It is a scaffolded task that consist of the following four components:

- 2500-word group essay (counts towards 15% of course grade)
- Peer review of another group's essay (5%)
- Oral group presentation (mandatory)
- Personal reflection and feedback on peer contribution (counts towards 5% of course grade)

See Pages 7-9 for detailed information. The marking rubrics detailing the criteria and standards for each of the components of the group project are detailed on Pages 13-18 in this manual. This assessment will contribute towards 25% of your overall course grade.

End of term assessment (CLO1, 5, 6):
This end of term assessment will consist of MCQs and SAQs, which will assess students' learning of the lecture content of course weeks 5-10. Examinable material is summarized in weekly lecture and practical slides and notes as well as in the UNSW embryology webpages

that you can access via the hyperlinks in the Course Program on Page 10 of this course manual, and that will also be available on Moodle. This assessment will contribute towards 25% of your overall course grade.

Exam and group project submission dates:

- Mid-term exam: week 5 practical session: 12 October 2021
- End of Term examination period: 26 November – 9 December 2021
- Supplementary exam period: 10-14 January 2021
- Group project:
  - Submission of group essay draft for peer review: 29 October 2021
  - Submission of peer review: 5 November 2021 (counts towards 5% of 25%)
  - Final submission of group essay and interview transcript/recording: 12 November 2021 (counts towards 15% of 25%)
  - Group presentation (practical class week 10)
  - Submission of personal reflection: 19 November 2021 (counts towards 5% of 25%)

COURSE DELIVERY

The course will be delivered remotely in 2021. Learning activities are as follows:

- Two weekly online synchronous lectures (18 total lectures): Tuesdays 1-3 pm.
- One weekly mandatory 2-hour practical session (labs) delivered via live streaming using MS-Teams: Tuesdays 4-6 pm.
- Group project: to be completed in allocated groups outside of the scheduled time.

Lectures (CLO1, 5, 6):
Students are expected to attend the online lecture sessions, and to read the assigned reading material related to each lecture, which will be available on Moodle. The lectures will provide students with the concepts and theory essential for a robust understanding of embryology. Students are encouraged to ask clarification during practical sessions.

Practical Sessions (labs) (CLO1-6):
The practical sessions are mandatory, and attendance will be recorded. Practical sessions will help students to revise and consolidate content of the preceding lectures in fun and formative hands-on learning activities.
The 2-hour practical sessions will consist of:

1. Lecture questions and revision (CLO1, 5, 6): The embryology course has significant theory content. Therefore, time has been set apart in the practical sessions for course content revision. It is highly recommended that students take advantage of these revision opportunities by asking questions in the practical sessions, on the Moodle forum, and per email.

2. Formative learning activities:
    - Adaptive tutorials to revise lecture content (CLO1-6)
    - Interactive cell lineage activities to identify the embryonic origins of human cells and tissues (CLO1)
    - Interactive virtual human embryo dissections to identify the anatomical features of embryos of various stages and species and to develop students' 3D insight in developmental processes (CLO1, 2)
    - Study of human embryo histology, to identify the anatomical features of embryos of various stages and species (CLO2)
    - Study of human birth defects (CLO1, 2)

Group Project (CLO1-6)
Students will be allocated to small groups of three to five to investigate a developmental or stem cell research laboratory in Australia (see list below). Student groups are required to conduct a 60-minute interview as a group with the Laboratory Head, and investigate the lab's research output by reading their primary research articles, investigating digital coverage of the research in news media and on websites, etc. to identify the impact of the research for human health.

Group Essay (15%)

Student groups will write a 2500-word essay outlining the embryological basis of the research (the embryological/developmental processes involved), the research focus and most important discoveries of the laboratory in that area. The group essay should also

comment on the possible (future) impact of the lab's research on human health. The marking rubrics detailing the criteria and standards are detailed in this manual and will also be provided on Moodle. A list of references must be provided using APA referencing. The essay should be submitted via Turnitin within Moodle.

The group essay will be submitted via Moodle together with the interview transcript and/or recording file. Each group will be required deliver a short presentation on the main points of their essay.

Peer Review of essays (5%)

A close to final draft of the group essay will be peer-reviewed by students of other groups. You will submit your essay to four other students as advised by Dr Reza Shirazi/Dr Hermi Geronimo for peer review.

Oral presentation (mandatory)

Students should prepare an oral presentation on group essay in practical sessions.

Personal Reflection (5%)

Individually, each student will submit a one-page personal reflection on how this assessment contributed to their learning in light of the course's learning objectives and on their peer's contribution to the group task .

The marking rubrics detailing the criteria and standards for each of the components of the group project are detailed on Pages 13-19 in this manual.

Developmental biology laboratory heads

The table below shows the researcher names, email addresses and links to the developmental biology laboratory web pages. These researchers have all agreed to make themselves available to talk with the embryology students for an hour in week 5 of the course (11-15 October 2021).

Other alternative (international) labs or written assignments may be negotiated. Please contact Dr Reza Shirazi/Prof Nalini Pather to discuss.

Researcher name	Email	Lab URL
John Aitken	john.aitken@newcastle.edu.au	Aitken Laboratory
Vincent Harley	vincent.harley@hudson.org.au	Harley Laboratory
Richard Harvey	r.harvey@victorchang.edu.au	Harvey Laboratory
Michael Piper	m.piper@uq.edu.au	Piper Laboratory
Marcus Heisler	marcus.heisler@sydney.edu.au	Heisler Laboratory
Dagmar Wilhelm	dagmar.wilhelm@unimelb.edu.au	Wilhelm laboratory
Jo Bowles	jo.bowles@uq.edu.au	Bowles Laboratory
David Simmons	d.simmons@uq.edu.au	Simmons Laboratory
Sally Dunwoodie	s.dunwoodie@victorchang.edu.au	Dunwoodie Laboratory
Alex Combes	alex.combes@monash.edu	Combes Laboratory
Edwina McGlinn	edwina.mcglinn@monash.edu	McGlinn Laboratory
Peter Currie	peter.currie@monash.edu	Currie Laboratory
Kelly smith	kelly.smith1@unimelb.edu.au	Smith Laboratory

Suggested task and timeline for group project:

Please note: firm deadlines are indicated in **red**

Week	Done (Y/N)	Tasks Please note: firm deadlines are indicated in **red**
1-2		Select Laboratory from list (please note: we cannot have two groups covering the same lab, so labs go on a first come first serve basis). Describe the Lab's research focus in 2-3 sentences. Submit this on Moodle for approval by **24 September via Moodle** Contact lab head to set up an appointment for week 5 of the course (do this well in advance, so they can accommodate you). Ask for their permission to record the interview.
3-4		Develop an overview of the laboratory's research, and its most significant findings Develop a list of questions (our recommendation is a list of 6 questions which would be a good guide for an hour-long interview) for the lab head Submit the list of questions via Moodle to the course convener for consultation by **8 October** Send the laboratory head a reminder of the date and time of your interview next week
5		Interview the laboratory head (in person, per telephone, or online via Teams, Skype etc). Ask for their permission to record the interview!
6-7		Write the group essay, using the marking rubric as a guide (see Pages 13-19 of the course manual) Submit essay to 4 other students as advised by Dr Reza Shirazi/Prof Nalini Pather for peer review by **29 October**
8		Review an assigned peer-group's essay using the criteria and standards defined in the marking rubric (see Pages 13-19 of the course manual) Submit peer review on Moodle to the relevant group, cc Dr Reza Shirazi/Dr Hermi Geronimo by **5 November**
9		Revise group essay based on peer review feedback Final submission of essay and of interview transcript/recording on Moodle by **12 November**
10		Group essay presentations in practical sessions Submission of a 1-page personal reflection on how the assessment contributed to their learning in light of the course learning objectives by **19 November**

COURSE PROGRAM

Please note, program is preliminary and may change.

Week online classes date	**Lecture 1**		**Lecture 2**		**Practical sessions and group essay (deadlines in red)**
	Topic	**Delivered by**	**Topic**	**Delivered by**	
Week 1 14 September	Introduction to course & Introduction to human development	Dr. Reza Shirazi	Gametogenesis, Fertilization, and Preimplantation	Dr. Reza Shirazi	Student introductions Clarification of course learning activities and assessments
Week 2 21 September	Implantation, placentation and gastrulation	Dr. Reza Shirazi	Ectoderm and neural development & Neural crest development	Dr. Reza Shirazi	Practical session learning activities Select laboratory for group essay and consult with Dr Reza Shirazi/Prof Nalini Pather per email for approval **by 24 September**
Week 3 28 September	Mesoderm & Endoderm	Dr. Reza Shirazi	Body cavities	Dr. Reza Shirazi	Practical session learning activities
Week 4 5 October	Fetal development	Prof. Nalini Pather	Research technologies and birth defects	Dr. Reza Shirazi	Practical session learning activities Send questionnaire per email to Dr Reza Shirazi/Prof Nalini Pather by email for approval **by 8 October**
Week 5 12 October	Musculoskeletal system	Dr. Reza Shirazi	Cardiovascular system	Prof. Nalini Pather	**Midterm exam**: assesses lecture content of course weeks 1-4 (but not the introduction lecture) Interview Developmental Biology Laboratory Head
Week 6 19 October	**Write group essay**	**---**	**Write group essay**	**---**	**Write group essay**
Week 7 26 October	Respiratory systems	Dr. Reza Shirazi	Digestive system	Dr. Reza Shirazi	Practical session learning activities Submission of group essay draft for peer review by **29 October**
Week 8 2 November	Urinary system	Dr. Reza Shirazi	Reproductive system	Dr. Reza Shirazi	Practical session learning activities Submission of peer reviews to groups and Dr Reza Shirazi/Prof Nalini Pather **by 5 November**
Week 9 9 November	Cranial development	Dr. Reza Shirazi	Nervous system	Dr. Reza Shirazi	Practical session learning activities Final submission of group essay to Dr Reza Shirazi/Prof Nalini Pather **by 12 November**
Week 10 16 November	Ear & Eye	Dr. Reza Shirazi	Integumentary system & Revision	Dr. Reza Shirazi	Group essay presentations Submit individual reflection on assessment **by 19 November**

TEXTBOOKS AND OTHER RESOURCES

The course resources will take the form of textbooks, web-based resources and journal articles. Links to resources will be provided on Moodle.

Textbooks:
There are two embryology textbooks, either of which can be used for this course, both are online accessible through UNSW Library.

1. Moore, K.L., Persaud, T.V.N. & Torchia, M.G. The developing human: clinically oriented embryology (10th ed.). Philadelphia: Saunders.
2. Schoenwolf, G.C., Bleyl, S.B., Brauer, P.R., Francis-West. Larsen's human embryology (6th ed.). Elsevier.

UNSW Embryology wiki pages:
Lectures summaries are available in the online UNSW embryology wiki pages that you can access via the hyperlinks in the Course Program on Page 10 of this course manual, and that will also be available on Moodle. Material available through links on the UNSW embryology lecture pages is provided for interest and will not be examined.

3D Atlas of Human Development:
The 3D Atlas of Human Development will be used for virtual embryo dissections. This atlas consists of 14 3D-PDF files representing Carnegie stages 7 through to 23. The compressed files are freely available through this link. Please download this 84Mb file at home before the practical sessions.

:
We will use the online Virtual Human Embryo resource, which consists of histology sections of human embryos of all 23 Carnegie stages of embryonic development. The Virtual Human Embryo Project generated nearly 34 gigabytes of embryonic imagery. This $3.2 million, 11-year initiative tapped the world's largest collection of human embryos to identify, digitize, and catalogue some of the best serial sections of normal human embryos ever seen. These images were then reviewed and labeled by one of the leading embryologists of the last half century, and are now available to researchers and educators everywhere.

COURSE EVALUATION AND DEVELOPMENT

We very much value the feedback from the student. Each year constructive feedback is sought from students about the course, and continual improvements are made based on this feedback. Feedback opportunities that are available:

1. Student liaison committee: A student course representative will have the opportunity to provide constructive feedback on the course on behalf of all the students twice during term in meetings of the student liaison committee. The course convener will not be present at these meetings. The feedback will be fed back to the conveners, who can then make suggested changes to improve the course while it runs.

2. Customized survey at the end of term: the convener will ask students to provide more targeted feedback on the course, the assessments, and the learning activities in a custom survey towards the end of the course. This feedback is useful for the improvement of the course for following years.

3. myExperience survey: process of UNSW linked through Moodle or student email is the way in which student feedback is evaluated and significant changes to the course will be communicated to subsequent cohorts of students.

4. Students are also welcomed to provide constructive feedback at any time in person, by phone or email, or through other digital means.

Changes to the 2021 embryology course:

- This year the course will be delivered fully remotely due to the very labile COVID19 situation. This will enable more students to take part in the course.
- Similar to last year, the course lecture content wil be assessed in a midterm and an end-of-term exam this year. This division of course content in more digestible chunks was preferred by 100% of last year's students over having only one lengthy end-of-term exam.
- Weekly quizzes: only five of students' best weekly quiz results, instead of all 7, will be counted towards your final grade this year, as suggested by the students last year.
- There will be no guest lecturers this year to reduce the overall lecture content of the course, which will also reduce the content volume.
- The journal club was not a highly rated assessment item that helped student learning according to the previous cohorts. This has been removed.
- The group project is newly introduced. This is a more hands-on learning experience for students that allows students to become familiar with cutting edge developmental biology research, to appreciate the importance of this work for human health, and perhaps to start the conversation for future Honours projects.

GROUP ESSAY ASSESSMENT MARKING RUBRICS: CRITERIA AND STANDARDS

Group Essay Project: Criteria and Performance Standards (1/3)					
Criteria	**Performance standards**				
	<50%	50-64%	65-74%	75-84%	85-100%
Understanding of developmental processes and molecular mechanisms relevant to the research of the laboratory (CLO1,2,4,6) **10%**	Poor or no description of background	Some accurate and effective description of background that provides context to the research topic of the lab. Ample redundant information.	Detailed and effective description of background that provides context to the research topic of the lab. Some redundant information.	Focused, mostly accurate, and detailed overview of developmental concepts relevant to the research of the laboratory. Minor redundant information.	Exemplary, reflective, consistently focused and comprehensive overview of developmental concepts relevant to the research of the laboratory. No redundant information.
Analysis and presentation of the main discoveries of the lab (CLO1-6) **30%**	Poor or no description of the lab's main discoveries	Some accurate and effective description of the main discoveries of the lab. Ample redundant information.	Mostly accurate and effective description of the main discoveries of the lab. Some redundant information.	Accurate and effective description of the main discoveries of the lab. Minor redundant information.	Exemplary, reflective, accurate and highly effective description of the main discoveries of the lab. No redundant information.
Evaluation of the (future) impact of the lab's research on human health (CLO1-6) **30%**	Poor or no evaluation of the lab's impact on human health	Some accurate and effective evaluation of the lab's (future) impact on human health. Ample redundant information.	Mostly accurate and effective evaluation of the lab's (future) impact on human health. Some redundant information.	Accurate and effective evaluation of the lab's (future) impact on human health, supported by evidence. Minor redundant information.	Critical, accurate and highly effective evaluation of the lab's (future) impact on human health, supported by evidence from multiple sources. No redundant information.

Group Essay Project: Criteria and Performance Standards (2/3)					
Criteria	**Performance standards**				
	<50%	50-64%	65-74%	75-84%	85-100%
Referencing style (APA 7th). Familiarity with and relevance of research literature used to support the essay **10%**	Literature is not accurately referenced.	Literature is not accurately referenced. References are used with citations mostly to review articles. Bibliography correctly listed in the reference list according to APA style.	Some literature is not accurately referenced. References are used with citations to original research articles and review articles. Bibliography correctly listed in the reference list according to APA style.	Literature is accurately referenced. Quotes and other authors' views are introduced; references are effectively used with most citations to original research articles and some review articles. Bibliography correctly listed in the reference list according to APA style.	Literature is accurately referenced. Quotes and other authors' views are introduced with a purposeful and detailed context; all references are effectively used with citations largely to original research articles and no review articles. Bibliography correctly listed in the reference list according to APA style.
Structure and organization of the essay **10%**	Structure does not develop without logical organisation	Not clearly structured and/or unclear narrative. Convoluted statements. Focus of the essay is not very developed or maintained in all paragraphs. No final concluding statement(s).	Mostly well-structured with good narrative. Some convoluted statements. Focus of the essay is developed and maintained in all paragraphs. Some concluding final statement(s).	Well-structured with logical narrative. Headings and subsections. Topic moves from general idea to specific to lab research. Mostly concise statements. Focus of the essay is developed and maintained in all paragraphs. Compelling final concluding statement(s).	Exemplary structure with strong logical and thoughtful narrative. Clear headings and subsections. Topic moves from general idea to specific to lab research. Concise statements. Focus of the essay is highly developed and maintained in all paragraphs. Compelling concluding statement(s).

Group Essay Project: Criteria and Performance Standards (3/3)					
Criteria	**Performance standards**				
	<50%	50-64%	65-74%	75-84%	85-100%
Presentation of essay according to appropriate academic and linguistic conventions **10%**	Contains many spelling, punctuations, and grammar errors; sentence structures do not vary-too long and too short; does not meet the word limit	Contains a few spelling, punctuations, and grammar errors; many jargons/slangs and inappropriate use of words; use of contractions; does not meet the word limit	Well written for the most part, without spelling, punctuations, or grammar error but with jargons and inappropriate word choices; within the word limit	Well written for the most part, without spelling, punctuations, or grammar error; appropriate words are used; within the word limit, submitted in time	Correct spelling and grammar throughout. Sentences vary in length and structure; academic tone; adheres to the word limit; words used are intelligent and precise; effective use of transition signals

Submission of essays should occur before the deadline. Late submissions will result in a 10% deduction from the final group assessment grade.

General Comments

Lecturer recommended: /20
Date
Weighing: The group essay mark will weigh 20% towards final course grade.

NB: The ticks in the various boxes are designed to provide feedback to students; they are not given equal weight in determining the recommended grade. Depending on the nature of the assessment task, lecturers may also contextualize and/or amend these specific criteria. **The recommended grade is tentative only, subject to standardisation processes and approval by the Department of Anatomy Head of Teaching**

Peer Review of Draft Group Essay: Criteria and Performance Standards					
Criteria	**Performance standards**				
	1	2	3	4	5
Peer review	Response if off track	Feedback not effectively outlining how essay addresses the defined marking criteria and to what standards. No clear identification of shortcomings or suggestions for improvement.	Feedback outlining how essay addresses most of the defined marking criteria and to what standards. Identification of some shortcomings, and some suggestions for improvement.	Well-justified feedback accurately outlining how essay addresses all the defined marking criteria and to what standards. Correct identification of shortcomings, and adequate suggestions for improvement.	Reflective and well-justified feedback accurately outlining how essay addresses all the defined marking criteria and to what standards. Correct identification of all shortcomings, and excellent suggestions for improvement.

Active participation in peer review is mandatory for all students. Submission of peer reviews should occur before the deadline. Late submissions, and low-quality peer reviews marked 1 will result in a 10% deduction from the final group assessment grade.

Oral Group Presentation: Criteria and Performance Standards					
Criteria	**Performance standards**				
	1	2	3	4	5
Understanding of developmental processes and molecular mechanisms relevant to the research of the laboratory (CLO1, 2, 4, 6)	Poor or no description of developmental concepts	Some accurate and effective description of background that provides context to the research topic of the lab. Ample redundant information.	Mostly accurate and effective description of background that provides context to the research topic of the lab. Some redundant information.	Focused, mostly accurate, and effective overview of developmental concepts relevant to the research of the laboratory. Minor redundant information.	Exemplary, reflective, consistently focused, accurate, and highly effective overview of developmental concepts relevant to the research of the laboratory. No redundant information.
Analysis and presentation of the main discoveries of the lab (CLO1-6)	Poor or no description of the lab's main discoveries	Some accurate and effective description of the main discoveries of the lab. Ample redundant information.	Mostly accurate and effective description of the main discoveries of the lab. Some redundant information.	Accurate and effective description of the main discoveries of the lab. Minor redundant information.	Reflective, accurate and highly effective description of the main discoveries of the lab. No redundant information.
Evaluation of the (future) impact of the lab's research on human health (CLO1-6)	Poor or no evaluation of the lab's impact on human health	Some accurate and effective evaluation of the lab's (future) impact on human health. Ample redundant information.	Mostly accurate and effective evaluation of the lab's (future) impact on human health. Some redundant information.	Accurate and effective evaluation of the lab's (future) impact on human health, supported by evidence. Minor redundant information.	Critical, accurate and highly effective evaluation of the lab's (future) impact on human health, supported by evidence from multiple sources. No redundant information.
Presentation and slide style, keeping in time, questions	Unclear presentation with redundant information	Not always very clear presentation of essay, slides with redundant information, over time, no effective or concise answers to questions.	Clear presentation of essay, slides with some redundant information, on time, not always effective or concise answers to questions.	Clear and effective presentation of essay, good slides with some redundant information, good use of time, effective and mostly concise answers to questions.	Exemplary, clear, concise and effective presentation of essay, highly effective slides without any redundant information, excellent use of time, highly effective, concise answers to questions.
Questions and engagement in discussion	Not	Little	Adequate	Good	Excellent

Active participation in group presentation is mandatory for all students. Low quality group presentations marked 1 will result in a 10% deduction from the final group assessment grade.

Personal Reflection: Criteria and Performance Standards					
Criteria	**Performance standards**				
	<50%	50-64%	65-74%	75-84%	85-100%
Personal reflection **80%**	Unclear reflection with redundant information	Reflection not effectively outlining how the group assessment helped student's learning relative to course learning objectives. No justification of assessment's weaknesses and shortcomings, no suggestions for improvement.	Reflection outlining how the group assessment helped student's learning relative to course learning objectives. Identification and some justification of assessment's weaknesses and shortcomings, and some suggestions for improvement of these.	Effective reflection on the efficacy of the group assessment in student's learning relative to course or program learning objectives. Identification and justification of assessment's weaknesses and shortcomings, and good suggestions for improvement of most of these.	Exemplary, highly effective reflection on the efficacy of the group assessment in student's learning relative to all the course and program learning objectives. Identification and strong justification of assessment's weaknesses and shortcomings, and excellent suggestions for improvement of all of these.
Presentation of reflection according to appropriate academic and linguistic conventions **10%**	Contains many spelling, punctuations, and grammar errors; sentence structures do not vary-too long and too short; does not meet the word limit	Contains a few spelling, punctuations, and grammar errors; many jargons/slangs and inappropriate use of words; use of contractions; does not meet the word limit	Well-written for the most part, without spelling, punctuations, or grammar error but with jargons and inappropriate word choices; within the word limit	Well-written for the most part, without spelling, punctuations, or grammar error; appropriate words are used; within the word limit, submitted in time	Correct spelling and grammar throughout. Sentences vary in length and structure; academic tone; adheres to the word limit; words used are intelligent and precise; effective use of transition signals
Peer contribution **10%**	Seldom cooperative. Rarely offers useful ideas. Is disruptive.	A few cooperative. Participates in some group meetings.	Sometimes cooperative. Sometimes offers useful ideas. Rarely displays positive attitude.	Usually cooperative. Usually offers useful ideas. Generally displays positive attitude.	Always cooperative. Routinely offers useful ideas. Always displays positive attitude.

Submission of personal reflection should occur before the deadline. Late submissions will result in will result in a 10% deduction of the final group assessment grade.

General Comments

Lecturer recommended: /5

Date

Weighing: The personal reflection will weigh 5% towards final course grade.

NB: The ticks in the various boxes are designed to provide feedback to students; they are not given equal weight in determining the recommended grade. Depending on the nature of the assessment task, lecturers may also contextualize and/or amend these specific criteria. **The recommended grade is tentative only, subject to standardisation processes and approval by the Department of Anatomy Head of Teaching**

Special Consideration

Please see UNSW-Special Consideration

If you unavoidably miss any assessment, you must lodge a Special Consideration application online via myUNSW. If your request for consideration is granted an alternative assessment may be organised that may take the form of a supplementary exam.

Student Support Services

Details of the available student support services can be found at Student Advice-Student support services.

Other support services:

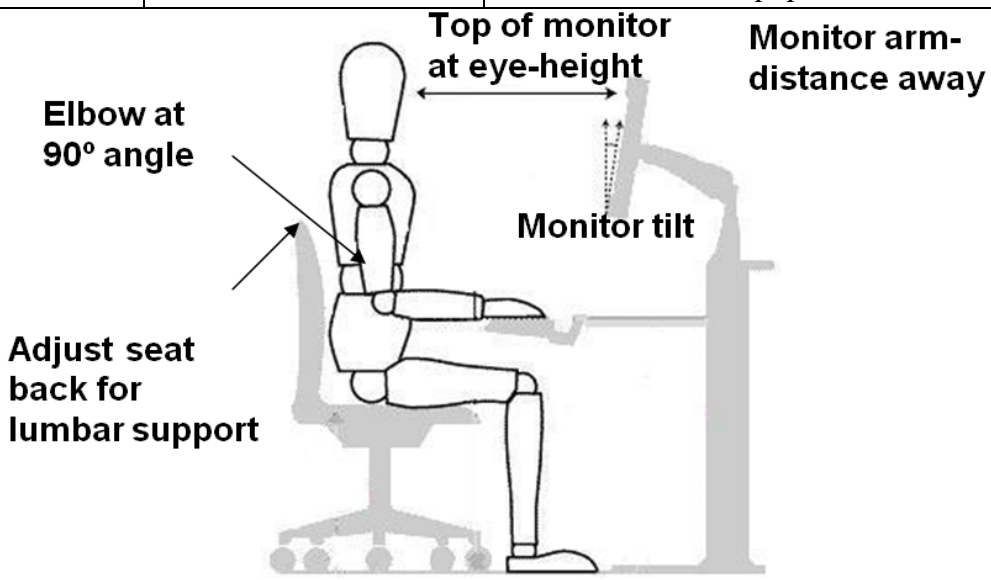
Key Dates: https://student.unsw.edu.au/dates
UNSW Student Life Hub: https://student.unsw.edu.au/hub#main-content
Student Support and Development: https://student.unsw.edu.au/support
IT, eLearning and Apps: https://student.unsw.edu.au/elearning
Student Support and Success Advisors: https://student.unsw.edu.au/advisors
Equitable Learning Services: https://student.unsw.edu.au/els
Transitioning to Online Learning https://www.covid19studyonline.unsw.edu.au/
Guide to Online Study https://student.unsw.edu.au/online-study

HEALTH & SAFETY GUIDELINES

Generic safety rules for UNSW can be found at: SAFETY.UNSW.EDU.AU and for the School of Medical Sciences at MEDICALSCIENCES.MED.UNSW.EDU.AU/STAFF/HEALTH-SAFETY
Additional safety information will be provided for classes at other locations.

ScienceTeaching Laboratory Student Risk Assessment	UNSW SYDNEY	ANAT2341 Wallace Wurth East G6-7 Term 3, 2020.

Workstation set-up		
Ergonomics	Musculoskeletal pain.	Correct workstation set-up.
Electrical	Shock/fire	Check electrical equipment in good condition before use. All electrical equipment tested and tagged.



Personal Protective Equipment
Not necessary in these practicals. (specimens are fully sealed)
Emergency Procedures
In the event of an alarm, follow the instructions of the demonstrator. The initial sound is advising you to prepare for evacuation and during this time start packing up your things. The second sound gives instruction to leave. The Wallace Wurth assembly point is the lawn in front of the Chancellery. In the event of an injury, inform the demonstrator. First aiders contact details and Kit locations are on display by the lifts.
Clean up and waste disposal
No apparatus or chemicals used in these practicals.
Declaration