SCHOOL OF MEDICAL SCIENCES

ANAT2341

Embryology: Early and Systematic Development
2012

Dr Mark Hill
(Course coordinator)

Figure showing the first 8 weeks of human embryological development.
UNSW Course Outline

1. Location of the course

   School of Medical Sciences, Embryology: Early and Systematic, ANAT2341, S2, 2012

2. Table of Contents

   Page 2 - course location, table of contents, staff contact details, course details
   Page 3 - Rationale for the inclusion of content and teaching approach, teaching strategies, assessment
   Page 4 - Academic honesty and plagiarism, course schedule
   Page 5 - Expected resources for students, course evaluation and development, health and safety, student equity and diversity
   Page 6 – Student laboratory risk assessment

3. Staff Contact Details

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Email</th>
<th>Availability; times and location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Convener</td>
<td>Dr Mark Hill</td>
<td><a href="mailto:m.hill@unsw.edu.au">m.hill@unsw.edu.au</a></td>
<td>Mon 2-3, Wed 2-3; WW room G20</td>
</tr>
<tr>
<td>Lecturer/tutor</td>
<td>Dr Steve Palmer</td>
<td><a href="mailto:s.palmer@unsw.edu.au">s.palmer@unsw.edu.au</a></td>
<td>By appointment</td>
</tr>
<tr>
<td>Lecturer/tutor</td>
<td>Prof Ken Ashwell</td>
<td><a href="mailto:k.ashwell@unsw.edu.au">k.ashwell@unsw.edu.au</a></td>
<td>By appointment</td>
</tr>
<tr>
<td>Lecturer/tutor</td>
<td>A/Prof Sally Dunwoodie</td>
<td><a href="mailto:s.dunwoodie@victorchang.edu.au">s.dunwoodie@victorchang.edu.au</a></td>
<td>By appointment</td>
</tr>
</tbody>
</table>

4. Course details

   Credit Points:
   6

   Summary of the Course

   This course will introduce embryological development as a major topic within medical sciences. Students completing this course will have a broad understanding of: human development, some animal models of development and current related research topics. Experts and researchers from within the field contribute to the current course.

   Aims of the Course

   1. This course will enable students to explore and gain further understanding of embryology through the investigation of development in both humans and animal models with a direct emphasis of their application to emerging research and reproductive technologies.
   2. This course will enable students to broadly understand abnormalities in development and current medical research techniques.

   Student learning outcomes

   At the conclusion of this course the student will be able to:
   1. Describe the key events in early and systematic embryological development.
   2. Apply developmental theory to abnormalities of development and current medical research techniques.
   3. Complete tasks in scientific communication either online, written and by oral presentation.
   4. Work in small research groups and carry out peer assessment by completing an online group project.
Graduate Attributes

The students will be encouraged to develop the following Graduate Attributes by undertaking the selected activities and knowledge content. These attributes will be assessed within the prescribed assessment tasks.

At the conclusion of this course the student will be able to:

1. Investigate embryological development by scholarly enquiry of research literature.
2. Apply developmental theory to anatomical development.
3. Undertake basic research by applying analytical and critical thinking.
4. Create online individual and group projects that demonstrate initiative and collaborative work.

5. Rationale for the inclusion of content and teaching approach

This course includes content to enable students to develop communications skills and practices that will enhance their development as a medical researcher. It reflects my position that students should be able to use the latest tools in information technology and online practices.

6. Teaching strategies

Each week 2 lectures will introduce topics of early embryological development and later focus upon systematic development. Laboratories are designed to complement the course lecture material, allow individual and small group work and also include topics related to specific researchers within the school. Laboratories also include time for tutorials in online group project work and for to discuss and co-ordinate the group project.

7. Assessment

There are three main forms of course assessment tasks shown below.

<table>
<thead>
<tr>
<th>Assessment task</th>
<th>Length</th>
<th>Weight</th>
<th>Learning outcomes assessed</th>
<th>Graduate attributes assessed</th>
<th>Due date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Tasks</td>
<td>Throughout the semester</td>
<td>20 %</td>
<td>Critical thinking and initiative, information literacy</td>
<td>Scholarly enquiry of research literature</td>
<td>Throughout the semester</td>
</tr>
<tr>
<td>Group Project</td>
<td>One online project page</td>
<td>20 %</td>
<td>Information literacy and effective communication</td>
<td>Initiative and collaborative work</td>
<td>Week 9 peer assessment, Week 11 final assessment</td>
</tr>
<tr>
<td>Theory Examination</td>
<td>2 hours</td>
<td>60 %</td>
<td>Engagement with the relevant disciplinary knowledge in its interdisciplinary context</td>
<td>Apply developmental theory to anatomical development</td>
<td>Within the S2 exam period 29 Oct to 16 Nov</td>
</tr>
</tbody>
</table>

More detailed assessment information can be found online:


Submission of Assessment Tasks

Student individual and group assessment tasks are submitted online, except for some specialized tasks submitted by guest lecturers. Submission dates will be given when the task is initially set and late submissions penalized by 5% / day late.
8. Academic honesty and plagiarism

Plagiarism is using the words or ideas of others and presenting them as your own. Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. With regard to the group project work please note the statement:

"Claiming credit for a proportion of work contributed to a group assessment item that is greater than that actually contributed;"

Note - All student online contributions are recorded by date, time, and the actual contributed content.

Academic Misconduct carries penalties. If a student is found guilty of academic misconduct, the penalties include warnings, remedial educative action, being failed in an assignment or excluded from the University for two years. The University has also adopted an educative approach to plagiarism and has developed a range of resources to support students.

For more information see: http://www.lc.unsw.edu.au/plagiarism

9. Course schedule

The provisional 2012 timetable is shown below and is subject to change without notice some content may also be replaced by specialist invited guest lecturers.

<table>
<thead>
<tr>
<th>Week</th>
<th>Monday Date</th>
<th>Lecture 1 Tue 11am – 12 pm Biomedical Theatre E</th>
<th>Lecture 2 Tue 3 – 4 pm Central Lecture Block 3</th>
<th>Laboratory Wed 10am – 12 pm Wallace Wurth G4 Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>23 Jul</td>
<td>Embryology introduction</td>
<td>Fertilization</td>
<td>Lab 1</td>
</tr>
<tr>
<td>3</td>
<td>30 Jul</td>
<td>Week 1&amp;2 Development</td>
<td>Week 3 Development</td>
<td>Lab 2</td>
</tr>
<tr>
<td>4</td>
<td>6 Aug</td>
<td>Mesoderm Development</td>
<td>Ectoderm, Early Neural, Neural Crest</td>
<td>Lab 3</td>
</tr>
<tr>
<td>5</td>
<td>13 Aug</td>
<td>Early Vascular Development</td>
<td>Placenta</td>
<td>Lab 4</td>
</tr>
<tr>
<td>6</td>
<td>20 Aug</td>
<td>Endoderm, Early Gastrointestinal</td>
<td>Respiratory Development</td>
<td>Lab 5</td>
</tr>
<tr>
<td>7</td>
<td>27 Aug</td>
<td>Head Development</td>
<td>Neural Crest Development</td>
<td>Lab 6</td>
</tr>
<tr>
<td>3 Sep</td>
<td>3 Sep Mid-semester break</td>
<td>Musculoskeletal Development</td>
<td>Limb Development</td>
<td>Lab 7</td>
</tr>
<tr>
<td>8</td>
<td>10 Sep</td>
<td>Kidney Meninges</td>
<td>Genital</td>
<td>Lab 8</td>
</tr>
<tr>
<td>9</td>
<td>17 Sep</td>
<td>Group Project</td>
<td>Due Date Peer Assessment</td>
<td>After Lab</td>
</tr>
<tr>
<td>10</td>
<td>24 Sep</td>
<td>Endocrine</td>
<td>Integumentary</td>
<td>Lab 9</td>
</tr>
<tr>
<td>11</td>
<td>1 Oct*</td>
<td>Neural</td>
<td>Sensory</td>
<td>Lab 10</td>
</tr>
<tr>
<td>3 Oct</td>
<td>3 Oct Group Project</td>
<td>Due Date Final Assessment</td>
<td></td>
<td>After Lab</td>
</tr>
<tr>
<td>12</td>
<td>8 Oct</td>
<td>Heart</td>
<td>Stem Cells</td>
<td>Lab 11</td>
</tr>
<tr>
<td>13</td>
<td>15 Oct</td>
<td>Fetal</td>
<td>Birth and Revision</td>
<td>Lab 12</td>
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<tr>
<td></td>
<td>20 Oct</td>
<td>Study Week</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>26 Oct</td>
<td>to 13 Nov</td>
<td>Examination - TBA</td>
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</table>

* Public Holiday - Labour Day Monday 1 October

Laboratories above relate to lecture content for each week or specialist researcher presentations and topics. Time is made available in some labs for project group work.

See also online: http://php.med.unsw.edu.au/embryology/index.php?title=ANAT2341_Course_Timetable_2012

UNSW ANAT2341 Embryology Course Outline - July 2012
10. Expected Resources for students

Textbooks - Either of the textbooks listed below are recommended for this course and page references to both are given in each lecture. There are additional embryology textbooks that can also be used, consult course organizer. Both textbooks are currently accessible online through the UNSW Library connection (links are included in online lecture and practical materials).


Online materials - Supported by the online education site UNSW Embryology:

http://php.med.unsw.edu.au/embryology

Each student will be provided access to an online page for their individual assessments and the group project. Blackboard and Moodle are not currently used for this course.

Additional online resources –

- School of Medical Sciences (SOMS) http://medicalsciences.med.unsw.edu.au
- UNSW Library website http://info.library.unsw.edu.au/web/services/services.html

11. Course evaluation and development

Periodically student evaluative feedback on the course is gathered, using among other means, UNSW Course and Teaching Evaluation and Improvement (CATEI) Process. Student feedback is taken seriously, and continual course improvements are based in part on such feedback. For example, previous student feedback on lecture slides availability and online materials navigation has led to changes in both lecture presentations and development of a new online resource with better navigation and access.

12. Other information to be included

- Students are expected to attend all lectures and laboratories and absences require prior arrangement with the course coordinator and/or a medical certificate. See also the UNSW Student conduct policy https://my.unsw.edu.au/student/academiclife/assessment/StudentConductPolicy.html
- Information on relevant Health and Safety policies and expectations as outlined at: http://medicalsciences.med.unsw.edu.au/SOMSWeb.nsf/page/Health+and+Safety
- Theory examination will be a two-hour exam in the examination period semester 2.
- Students should refer to the UNSW website for further advice concerning special consideration in the event of illness or misadventure https://my.unsw.edu.au/student/atoz/SpecialConsideration.html
- Student equity and diversity issues via Student Equity Officers (Disability) in the Student Equity and Diversity Unit (9385 4734). Further information for students with disabilities is available at http://www.studentequity.unsw.edu.au/content/Services/Disabilityservices.cfm
Hazards | Risks | Controls
---|---|---
Ergonomics | Musculoskeletal pain. Shock/fire. | Correct workstation set-up. Check electrical equipment in good condition before use. All electrical equipment tested and tagged.

Workstation set-up

- Top of monitor at eye-height
- Monitor arm-distance away
- Elbow at 90º angle
- Monitor tilt
- Adjust seat back for lumbar support

Personal Protective Equipment
Not necessary in these computer practical classes.

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 and contact details are on display by the lifts. There is a first aid kit in the laboratory and the Wallace Wurth security office.

Clean up and waste disposal
No apparatus or chemicals used in these computer practical classes.

Declaration
I have read and understand the safety requirements for these practical classes and I will observe these requirements.
Signature:……………………………………………………………… Date:……………………………………
Student Number:…………………………