



**UNSW**  
THE UNIVERSITY OF NEW SOUTH WALES

**SCHOOL OF MEDICAL SCIENCES**

**ANAT2341**

**Embryology: Early and Systematic Development  
2013**

**Dr Stephen Palmer**  
(Course coordinator)

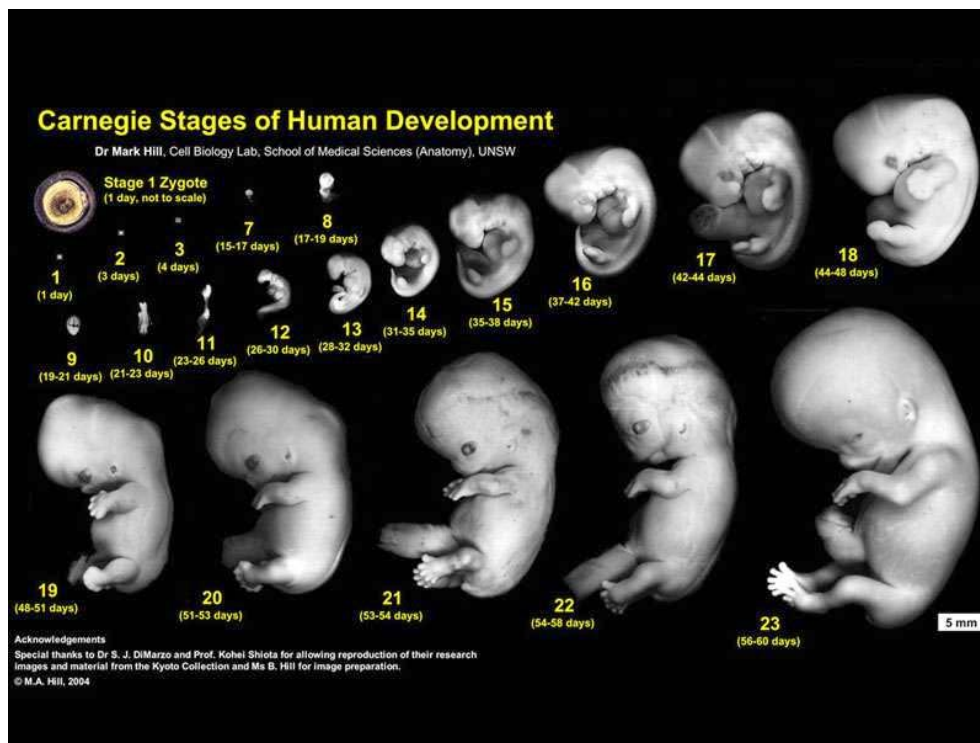


Figure showing the first 8 weeks of human embryological development.

## UNSW Course Outline

### 1. Location of the course

School of Medical Sciences, Embryology: Early and Systematic, ANAT2341, S2, 2013

### 2. Table of Contents

**Page 2** - course location, table of contents, staff contact details, course details  
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### 3. Staff Contact Details

Position	Name	Email	Availability; times and location
Course Convener	Dr Stephen Palmer	s.palmer@unsw.edu.au	By appointment
Lecturer/tutor	Dr Annemiek Beverdam	a.beverdam@unsw.edu.au	By appointment
Lecturer/tutor	Prof Ken Ashwell	k.ashwell@unsw.edu.au	By appointment
Lecturer/tutor	Prof Edna Hardeman	e.hardeman@unsw.edu.au	By appointment
Lecturer/tutor	Dr Nalini Pather	n.pather@unsw.edu.au	By appointment
Course designer	Dr Mark Hill	Overseas sabbatical	Email via S.Palmer

### 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 applications to medical research.

#### 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 groups to research a specific topic and deliver a 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 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.

## 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 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.

Assessment task	Length	Weight	Learning outcomes assessed	Graduate attributes assessed	Due date
Individual Tasks	Short answer and/or multiple choice	20 %	Critical thinking and initiative, information literacy	Scholarly enquiry of research literature	Throughout the semester
Group Project	3000 word referenced review with figures and mid-semester oral presentation	30 %	Information literacy and effective communication	Initiative and collaborative work	Mid-semester presentation and week 11 submission of review
Theory Examination	2 hours	50 %	Engagement with the relevant disciplinary knowledge in its interdisciplinary context	Apply developmental theory to anatomical development	Within the S2 exam period 8 <sup>th</sup> – 26 <sup>th</sup> Nov

<http://php.med.unsw.edu.au/embryology/index.php?title=ANAT2341> Embryology 2013

### Submission of Assessment Tasks

Student individual tasks will be set and submitted on a regular basis during laboratories. Oral presentation of group projects will be during weeks 8 and 9. Group project reports are due on the Sunday of week 11. Late submissions will be 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;"*

**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 2013 timetable is shown below and is subject to change without notice some content may also be replaced by specialist invited guest lecturers.*

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\\_2013](http://php.med.unsw.edu.au/embryology/index.php?title=ANAT2341_Course_Timetable_2013)

Wk No.	Wk Start Monday	Lecture 1 Tuesday 12-1pm Wallace Wurth LG02	Lecture 2 Tuesday 4-5pm Biomedical Theatre E	Laboratory Wed 10am-12 Wallace Wurth G08
2	05 Aug	Fertilization	Week 1 & 2 Development	Lab 1
3	12 Aug	Embryology Introduction	Week 3 Development	Lab 2
4	19 Aug	Mesoderm Development	Ectoderm, Early Neural, Neural Crest	Lab 3
5	26 Aug	Early Vascular Development	Placenta	Lab 4
6	02 Sept	Endoderm, Early Gastrointestinal	Respiratory Development	Lab 5
7	09 Sept	Head Development	Neural Crest Development	Lab 6
8	16 Sept	Musculoskeletal Development	Limb Development	Lab 7 Project Orals
9	23 Sept	Renal Development	Genital	Lab 8 Project Orals
<b>Mid-Semester Break 28<sup>th</sup> Sept – 7<sup>th</sup> Oct</b>				
10	07 Oct	Endocrine Development	Integumentary Development	Lab 9
11	14 Oct	Neural	Sensory	Lab 10
<b>Group Project is Due for Submission on Sunday 20<sup>th</sup> October</b>				
12	21 Oct	Heart	Stem Cells	Lab 11
13	28 Oct	Fetal	Birth and Revision	Lab 12
<b>Study week 2<sup>nd</sup> – 7<sup>th</sup> November</b>				
Examinations 8 <sup>th</sup> – 26 <sup>th</sup> November Date TBA				

## 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).

- Moore, KL, Persuad, TVN & Torchia MG. (2011) **The Developing Human: Clinically Oriented Embryology** (9<sup>th</sup> ed.). Philadelphia: Saunders.
- Schoenwolf, GC, Bleyl, SB, Brauer, PR & Francis-West, PH. (2009) **Larsen's Human Embryology** (4<sup>th</sup> ed.). New York; Edinburgh: Churchill Livingstone.

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

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

**Additional online resources –**

- School of Medical Sciences (SOMS) <http://medalsciences.med.unsw.edu.au>
- SOMS Health and Safety (OHS)  
<http://medalsciences.med.unsw.edu.au/SOMSWeb.nsf/page/Health+and+Safety>
- 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.

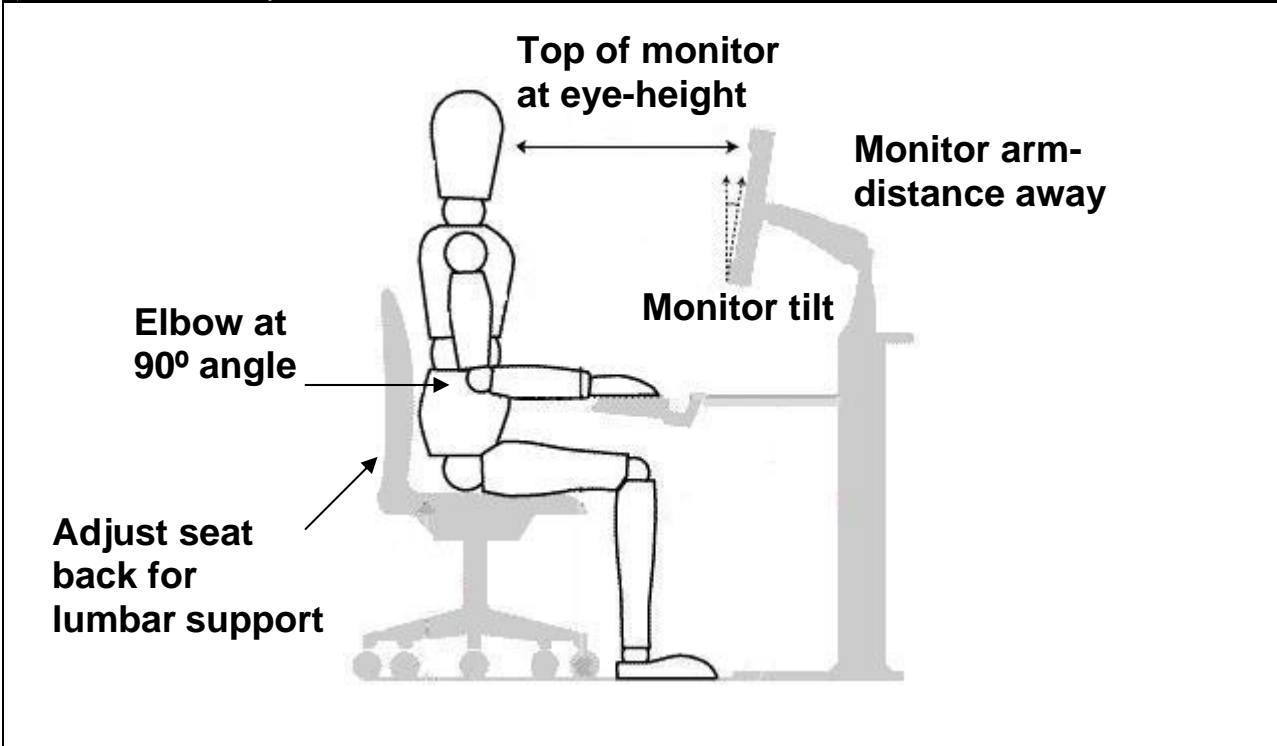
## 12. Other information to be included

- 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://medalsciences.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 Electrical	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**



**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:.....