

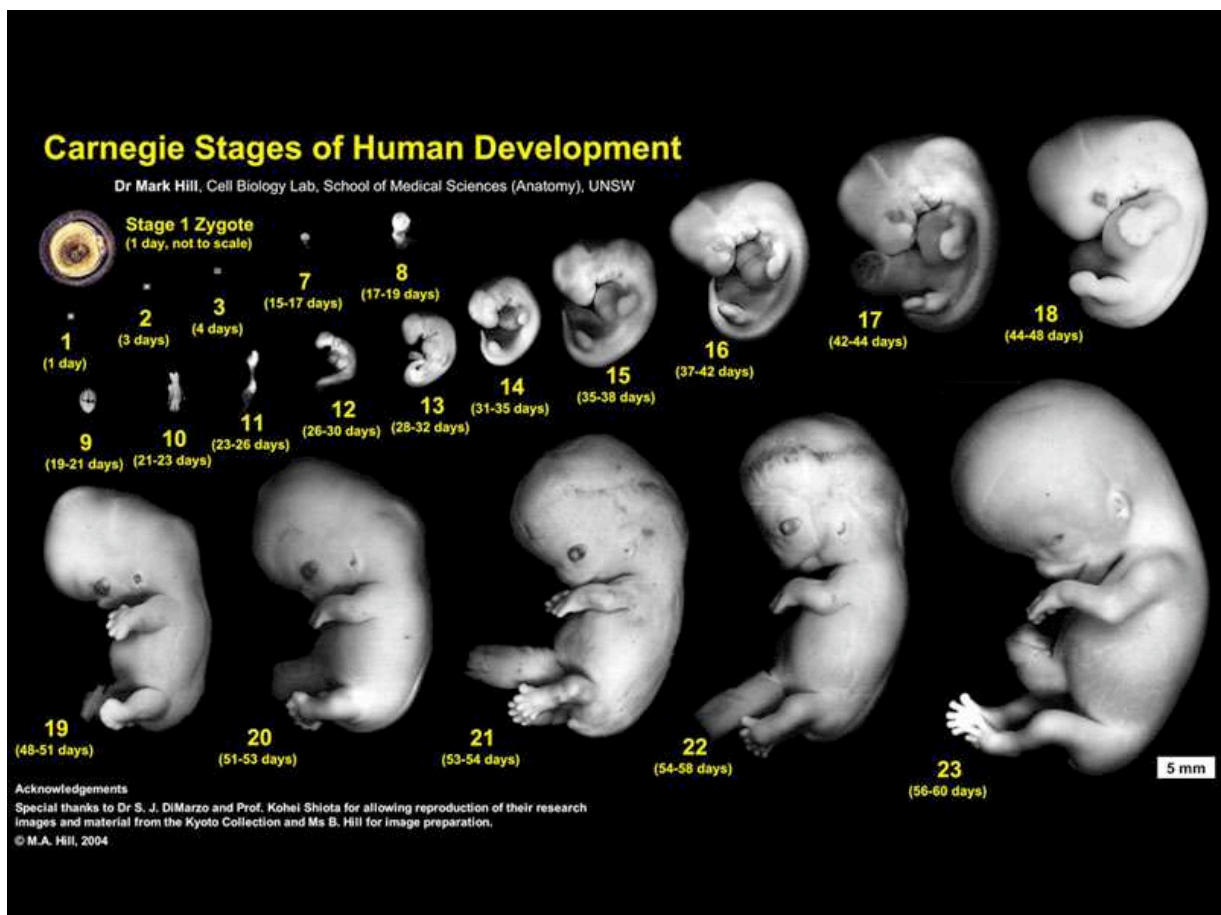


THE UNIVERSITY OF
NEW SOUTH WALES

SCHOOL OF MEDICAL SCIENCES

ANAT2341

Embryology: Early and Systemic Development



Carnegie Stages showing the first 8 weeks of Human Embryological Development

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Dr Mark Hill
(course coordinator)

Welcome to Embryology in 2009 and thank you for choosing your next stage in your own development with me! In the past 20 years as a researcher I have seen enormous changes in our understanding of this topic and the methods we employ to further our knowledge. This topic and its associated methodologies are now found at the core of scientific investigations and current medical research.

UNSW Embryology, is an online resource I have developed to aid your own independent learning, please explore its content. It not only has the usual lecture slides, but also podcast broadcasts, lab project support, online external resources (included complete Embryology textbooks), access and searching of the current literature (both research and reviews) and much more.

In **Lectures and Labs** I will clearly identify any examinable material. In addition, the final lecture is an opportunity to review course material and ask questions about difficult concepts. As part of the course I also encourage you to develop the general scientific skills of critical thinking, analysis and scientific writing.

The **new UNSW semester structure** means that there will be some reorganization of previous course content material, I apologize for any inconvenience during this transition time. This year I will also be asking you to participate in assessing and providing feedback on a medical student's Independent Learning Project (ILP) on online education in cardiac development.

This **handout** contains information designed to help you get started and plan for this semester, please take the time to read through it and contact me if you have any difficulties. Also feel free to contact me with questions and course feedback by email at any time.

Dr Mark Hill
July 2009

COURSE OUTLINE CONTENT DETAILS

Course staff

- Dr Mark Hill
- Office: room G20 ground floor, Wallace Wurth Building
- Email: m.hill@unsw.edu.au

Student Contact

- University policy concerning student contact is: " When a student is enrolled into University of New South Wales, he or she will be automatically issued with a University email account. The School will use that email account as the official electronic channel to communicate with each student."
- Appointments with Dr Mark Hill should be made initially by email or through the Anatomy office (room G11).

Course information

- 6 Units of credit, Science/Anatomy program.
- Prerequisite: ANAT2200 or ANAT2241

Course structure There will be two lectures and tutorial/laboratories per week.

- Lecture: 1 to 2 pm, Monday Biomed B and Friday Biomed F
- Laboratory: 2-4pm Monday and Friday 2-4pm G4 Wallace Wurth Bldg
- **Grievance procedure** If you have any problem or grievance with the course, you should first attempt to resolve it with the course organizer (Dr Mark Hill, room G20). If the grievance cannot be resolved in this way, it should be directed to the Head of Department (Prof. Edna Hardeman) or the School's Grievance Officer (Dr Priti Pandey).

Course Aims

- To present the current theories and applications of embryology.
- To cover early embryonic then fetal development through to birth.
- To describe the developmental anatomy of the organ systems.
- To examine the common principles and differences underlying normal and abnormal development of vertebrates.
- To cover emerging technologies, such as stem cells, genomic analysis and the use of transgenic and dysfunctional mouse mutants in research.

Assessment

- There will be three parts to the course assessment.

1. Group Assignment - An online written assignment.	20%
2. Laboratory - Progressive assessments throughout session.	20%
3. Theory - A written test held during the examination period.	60%

- **Assessment design** has been structured to develop and examine the following graduate attributes and specific learning skills:
 - Student independent learning/research abilities
 - Student scientific writing and referencing skills
 - Student teamwork in small groups
 - Student group work contribution
 - Student ability to plan time and meet assessment deadlines
 - Student acquired knowledge from lecture/lab presentations
 - Student application of knowledge to problem solving
- For more information see also UNSW Guidelines on Learning

<http://www.guidelinesonlearning.unsw.edu.au/guidelinesHome.cfm>

- **Student learning Outcomes** By the end of this course you will have learned the current understanding of both cell structure and function and how this is dynamically organized. You will also understand the major methods used to study cells and their application to medical research. This information can then be integrated with other program subjects to give a cellular basis for Anatomy. Importantly the teaching methods and content are designed to encourage your own self-motivated scientific enquiry.
- **Examiner** The course organizer (Dr Mark Hill) will be the examiner. The course assessor is Prof Edna Hardeman.
- **Group Assessment** will be an online small group (4-5 student) embryology project prepared throughout the semester, assessed by peers and the course coordinator. Detailed information will be available online and in the laboratory times.
- **Laboratory Assessment** will be a series of short answer questions prepared throughout the semester relating to embryology lecture and laboratory content.
- **Theory examination** will be an internal exam within the session two exam period and will conform to University examination guidelines. Students absent through illness or misadventure should immediately contact UNSW Student Central. For more information see UNSW A-Z Guide Special Consideration.

<https://my.unsw.edu.au/student/atoz/SpecialConsideration.html>
<https://my.unsw.edu.au/student/atoz/UNSWStudentCentral.html>

- **Supplementary examinations** will only be offered if the student is unable to attend the final examination for medical or misadventure reasons.
- **Assignment and Lab Project Dates** Current planned submission and project assessment dates are shown in the course schedule (page 6).

Academic honesty and plagiarism

What is Plagiarism?

Plagiarism is the presentation of the thoughts or work of another as one's own.*
Examples include:

- direct duplication of the thoughts or work of another, including by copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;
- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

For the purposes of this policy, submitting an assessment item that has already been submitted for academic credit elsewhere may be considered plagiarism.

Knowingly permitting your work to be copied by another student may also be considered to be plagiarism.

Note that an assessment item produced in oral, not written, form, or involving live presentation, may similarly contain plagiarised material.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

The Learning Centre website is main repository for resources for staff and students on plagiarism and academic honesty. These resources can be located via:
<http://www.lc.unsw.edu.au/plagiarism/>

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

† Adapted with kind permission from the University of Melbourne.

Embryology**Timetable 2009 S2**

(guide only, subject to change)

Planned guide to course Lectures for ANAT2341 Session 2, 2009

Lectures and Laboratories are subject to change without notice and may also be replaced by specialist invited Guest Lecturers. There are 2 lectures and 1 laboratory each week of semester. Laboratory content and time allocated may relate to both weekly lectures and the group project work.

Students are requested to also participate in assessment of an online educational Independent Learning Project (ILP) on cardiac development.

Week 2	27 Jul	Lecture/Lab- Course Introduction/Cell Division Lecture/Lab- Fertilization, Week 1
Week 3	3 Aug	Lecture/Lab- Week 2 Development Lecture/Lab- Week 3 Development
Week 4	10 Aug	Lecture/Lab- Endoderm, Early Gastrointestinal Lecture/Lab- Mesoderm Development
Week 5	17 Aug	Lecture/Lab- Ectoderm, Early Neural, Neural Crest Lecture/Lab- Early Vascular Development, Placenta
Week 6	24 Aug	Lecture/Lab- Limb Development Lecture/Lab- Head Development
Week 7	31 Aug	Lecture/Lab- Mesoderm, Cardiovascular Lecture/Lab- Developmental Models, Teratology
	7 Sep	Mid-semester break
Week 8	14 Sep	Lecture/Lab- Endoderm, Gastrointestinal Lecture/Lab- Developmental Genes, Stem Cells
Week 9	21 Sep	Lecture/Lab- Mesoderm, Connective Tissue/Bone/Cartilage Lecture/Lab- Mesoderm, Muscle, Heart
Week 10	28 Sep	Lecture/Lab- Urinary System Lecture/Lab- Genital System
Week 11	05 Oct	Lecture/Lab- Respiratory System Lecture/Lab- The Senses Hearing/Balance/ Vision/Smell/Taste
Week 12	12 Oct	Lecture/Lab- Endocrine System Lecture/Lab- Integumentary System
Week 13	19 Oct	Lecture/Lab- Birth (Parturition) Postnatal Development Lecture/Lab- Revision

Group Project: 3 September

Mid-Session Break: 5 September 13 September

Study recess: 24 October Study Week

Examination period: 30 October 17 November

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.
- **The Developing Human: Clinically Oriented Embryology** (8th Edition) by Keith L. Moore and T.V.N Persaud
- <http://www.us.elsevierhealth.com/isbn/9781416037064>
- **Larsen's Human Embryology** by GC. Schoenwolf, SB. Bleyl, PR. Brauer and PH. Francis-West
- http://www.elsevier.com/wps/find/bookdescription.cws_home/713963

• Website

- Additional course information and links can be found from the course homepage. Lectures slides and handouts are available for current students from UNSW Embryology Online or course homepage and are for educational use only.
- **ANAT2341 Course Homepage 2009**

[http://php.med.unsw.edu.au/embryology/index.php?title=ANAT2341 Embryology 2009](http://php.med.unsw.edu.au/embryology/index.php?title=ANAT2341%20Embryology%202009)

- **UNSW Embryology Online** <http://embryology.med.unsw.edu.au>

- School of Medical Sciences (SOMS)
<http://medicallsciences.med.unsw.edu.au/medsciences.nsf>
- SOMS Occupational Health and Safety (OHS)
<http://medicallsciences.med.unsw.edu.au/somsweb.nsf/page/OHS>
- Cell Biology Lab
<http://cellbiology.med.unsw.edu.au/cbl.htm>
- UNSW Unimail Information
<http://www.disconnect.unsw.edu.au/student/zhome.htm>
- **Lecture Recordings** Available from both **UNSW Embryology** and **Lectopia** (formally iLecture), online sound recording system making UNSW Lectures available in several formats (including Podcast). Lecture recordings are grouped by the id of the lecture, usually the course code.

<http://lectopia.elearning.unsw.edu.au/lectopia/>

Continual Course Improvement

- Periodically student evaluative feedback on the course is gathered, using among other means, UNSW's Course and Teaching Evaluation and Improvement (CATEI) Process. Student feedback is taken seriously, and continual improvements are made to the course based in part on such feedback.

Administrative Matters

- **Attendance requirements**
 - Students are required to attend each lecture and laboratory unless given special permission.
 - Students seeking special consideration should be able to provide medical certificates.
 - Human Swine Flu 9 (H1N1 Influenza 09)
<http://www.unsw.edu.au/gen/pad/healthadvice.html>

“Anyone with an acute respiratory illness and a fever should stay at home until they have not had a fever for 24 hours (this means a 24 hour fever-free period without medications such as paracetamol and cold and flu tablets).”

- Students must wear a white lab coat and closed footwear in research laboratories and comply at all times with SOMS occupational health and safety requirements (found on SOMS website).
- **Group Assignment submission**
 - Late Assignments will be penalized by 5% / day late.
- **Occupational Health and Safety (OHS)**
 - The University policies and expectations can be found currently at:
http://www.hr.unsw.edu.au/ohswc/ohs/pdf/statement_OHS_policy.pdf
 - The School of Medical Sciences (SOMS) also maintains important student specific OHS information.

<http://medicallsciences.med.unsw.edu.au/somsweb.nsf/page/OHS>

- **Equity and Diversity**
 - Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equity and Diversity Unit (9385 4734) or on the web:
<http://www.studentequity.unsw.edu.au>
 - Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements.
 - Early notification is essential to enable any necessary adjustments to be made.