

Revised 20 Jul 2008

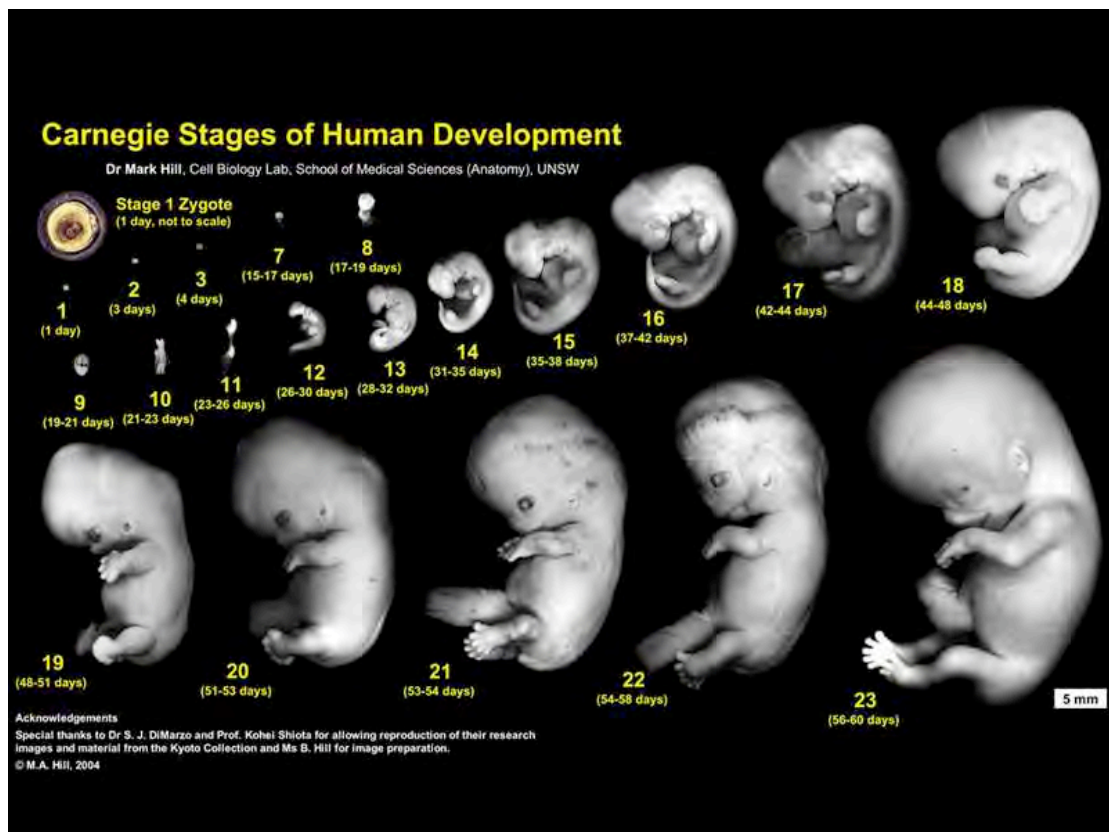


THE UNIVERSITY OF
NEW SOUTH WALES

SCHOOL OF MEDICAL SCIENCES

ANAT2341

Embryology: Early and Systemic Development



Carnegie stages of Early Human Development (week 1 to 8)

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From the course coordinator.

Welcome to Embryology in 2008 and thank you for choosing a topic now found at the core of current scientific and medical research. This area of research is continuing to grow in many different fields and an understanding of these basic concepts will help you to also be a part of the future. Note that the 2008 course Lecture/Lab structure will differ to previous years, to comply with the new UNSW semester structure, and may have some restructuring issues to yet be resolved.

Easily accessible online resources support both **Lectures and Laboratories**. I attempt to clearly identify any examinable material and 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, questioning and scientific writing. These are important life skills applicable and required for any future (scientific) career.

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.

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 2008)

COURSE OUTLINE CONTENT DETAILS

Course Staff

- Dr Mark Hill Office: Wallace Wurth Building, room G20 (ground floor)
- Email: m.hill@unsw.edu.au
- Carmen Robinson - SOMS Student advisor, SOMS office, Wallace Wurth Building, room MG14 (ground floor) Carmen.Robinson@unsw.edu.au

Student Contact

- University policy concerning student contact: " 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 SOMS office, Wallace Wurth Building, room MG14 (ground floor).

Course Information

<http://www.handbook.unsw.edu.au/undergraduate/courses/2008/ANAT2341.html>

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

Course Structure

Two lectures and a single tutorial/laboratory each week.

- **Lectures** - Wed, Thu 13:00 - 14:00
 - Australian School Business 119 (K-E12-119)
- **Laboratory** - Thu 10:00 - 12:00
 - Wallace Wurth 106/108 (K-C27-106)

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. Assignment - A written assignment from a selection of topics. 20%
 2. Laboratory - Assessments prepared 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 embryological development. You will also understand the major methods used to study embryology and their application to medical research. This information can then be integrated with other program subjects to give a developmental 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 A/Prof Brian Freeman.
- **Theory examination** will be an internal exam within the session 2 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 assessment dates are shown in the course schedule (page 6).
- **Assignment submission** Can only be through the School of Medical Sciences Office (room MG14) and must include the completed Assignment coversheet. Assignment coversheet includes a student declaration, signed and dated, and a signature and date of the receiving SOMs secretary.
 - Assignments submitted with incomplete coversheet information will not be assessed.
 - Late Assignments will be penalized by 5% / day late.
- **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 SOM's Grievance Officer (Dr Priti Pandey).

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/index.html>

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 2008 S2

(guide only, subject to change)

Planned guide to course content for ANAT2341 Session 2, 2008

Lectures and Laboratories are subject to change without notice and may also be replaced by specialist invited guest lecturers. Content listed below is not in chronological order.

Note that the 2008 course Lecture/Lab structure will differ to previous years, to accommodate the new UNSW 12 week semester (some restructuring issues have yet to be resolved).

Course Content:

- Course Introduction, Historic Background, Developmental Time course, Systematic development
- Reproductive Cycles, Cell Division, Fertilization
- Early Development: embryonic/fetal, Week 1, Week 2 and Week 3
- Trilaminar embryo: ectoderm, mesoderm, endoderm
- Ectoderm: Neural, Neural Crest, Integument
- Endoderm: Gastrointestinal, Respiratory
- Mesoderm: Coelomic cavity, Heart, Urinary, Genital, Connective Tissue/Bone/Cartilage, Muscle
- Placenta Development
- Head Development
- Limb Development
- Endocrine Development
- Sensory Development: Hearing/Balance, Vision/Smell/Taste
- Molecular Development: Genes, Signaling, Stem Cells
- Parturition: Birth and Postnatal Development
- Revision

Mid-Session Break: Sep 29 AVCC Common Vacation week
Oct 6 Public Holiday: Labour Day

Assignment Submission: September Thursday 25

Study recess: October Saturday 25 to Tuesday 28 T2 study period

Examination period: October Wednesday 29 to November Friday 14

Resources for students

• Textbooks

- **Human Embryology** (3rd edition) by William J. Larsen.
<http://www.us.elsevierhealth.com/product.jsp?isbn=0443065837>
- **The Developing Human: Clinically Oriented Embryology** (7th Edition) by Keith L. Moore and T.V.N Persaud
- Either of the above textbooks recommended for this course, and page references to both are given in lectures. Other embryology textbooks are available and can be used, consult course organizer.

• 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.
- **UNSW Embryology Online** - <http://embryology.med.unsw.edu.au>
 - UNSW Embryology Online- ANAT2341 Course Page
<http://embryology.med.unsw.edu.au/Science/ANAT2341.htm>
 - UNSW Embryology Online- textbook information
<http://embryology.med.unsw.edu.au/Refer/textbook.htm>
 - Cell Biology Lab
<http://cellbiology.med.unsw.edu.au/cbl.htm>
 - School of Medical Sciences (SOMS)
<http://medsciences.med.unsw.edu.au/medsciences.nsf>
 - SOMS Occupational Health and Safety (OHS)
<http://medsciences.med.unsw.edu.au/somsweb.nsf/page/OHS>
 - UNSW Unimail Information
<http://www.disconnect.unsw.edu.au/student/zhome.htm>
 - **Lecture Recordings** Available from both **UNSW Embryology** and **Lectopia**, online sound recording system making UNSW Lectures available in several formats (including Podcast). Laboratory is not currently part of the lectopia recording system.

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

Continual Course Improvement

- 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 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.
 - 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).
- **Assignment submission**
 - Can only be through the SOMS Office (room MG14) and must include the completed Assignment coversheet. Assignment coversheet includes a student declaration, signed and dated, and a signature and date of the receiving Anatomy secretary. Submissions with incomplete coversheet information will not be assessed. Late Assignments will be penalized by 5% / day late.
- **Occupational Health and Safety (OHS)**
 - The University policies and expectations can be found currently at:
www.riskman.unsw.edu.au/ohs/ohs.shtml
 - 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 (phone 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.