

ANAT 381 –Syllabus

Experimental Embryology

Objectives:

The original title of this course was “Experimental Basis of Embryology”, and the course contents reflect the spirit of describing embryology based on experimental findings.

The objective of ANAT381 is to provide a fundamental understanding of the **cellular and molecular processes** essential for reproduction and embryonic development and to present how various experimental approaches help us understand different aspects of embryology.

This course also aims at providing basic knowledge about the **applications of embryology** investigated in animal models to human clinics, such as assisted reproductive technology, genetic diagnosis, environmental effects on embryonic development, and stem cell technologies.

As indicated in accompanying documents uploaded onto myCourses, the course contents include mechanisms of gamete production, fertilization, preimplantation embryonic development, implantation, and embryonic axis formation. Recent progresses related to developmental biology, such as genetic and epigenetic control of embryo development and stem cell biology, will also be lectured.

These subjects will be presented in conjunction with basic biological concepts, including molecular signaling, cell-cell interaction, and cell fate decision control.

Please note that ANAT381 does not lecture basic morphological transition of organ development during pregnancy. For example, therefore, how and when the heart is formed through which mechanisms or what happens in each trimester of pregnancy in humans will “not” be the course contents.

The course is continuously updated to provide information on recent research progress and novel techniques as well as in clinical applications of reproductive and developmental biology.

Lectures will be recorded, but the recordings will NOT be downloadable. Some instructors may use an online polling system available in McGill website.

Please also look at two documents posted on myCourses, Chart of Student Rights and Code of Student Conduct, to understand your rights and responsibilities

Course Requirements:

The course requires prior knowledge of molecular and cellular biology and genetics: **ANAT261, BIOL202.**

Time and location:

Time: Tuesdays and Thursdays 13:05 to 14:25.

Place: SADB 1/12

Format: 80 min lectures

Evaluation: Mid-term Exam = 33%, Final Exam = 67%

The two non-cumulative exams will be a mix of multiple-choice and short-essay questions. All questions from the classes by Drs. Clarke and Ao will be asked in the mid-term and not presented in the final exam. The policies related to grading, deferred exams, and reassessment, as determined by the Department of Anatomy and Cell Biology, apply to ANAT381.

Textbook and Supplementary materials

The course is based on lectures and notes provided by the instructors. Relevant materials will be uploaded on myCourses before each lecture. **No textbooks are assigned**, but for general knowledge on developmental biology (not necessarily specific to the course contents), “Principles of Development” by Wolpert, Tickle, and Arias (Oxford University Press) is recommended.

Instructors are not responsible for the content of materials distributed by the NTC.

Course coordinator:

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Important Note: McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the code of student conduct and disciplinary procedures. For further information see: www.mcgill.ca/integrity

Departmental Grading Policy

The Department of Anatomy & Cell Biology will **NOT** revise/upgrade marks except on sound academic grounds. Once computed, the marks in this course will **NOT** be altered/increased arbitrarily. Decimal points will be “rounded off” as follows: if the final aggregate mark is computed to be 79.5%, the mark will be reported as 80% (an A-); a final aggregate mark of 79.4% will be reported as 79% (a B+). These marks are **FINAL and non-negotiable**.

Departmental Midterm Exam/In-Course Assessment Deferral Policy

Please see the full policy, including information on valid documentation requirements, here:
<https://mcgill.ca/anatomy/undergraduate/policies-resources>

University Policy on Reassessments and Rereads

Please see the eCalendar for policies regarding reassessments of coursework and rereads of final exams:
www.mcgill.ca/study/university_regulations_and_resources/undergraduate/gi_final_examinations