

Health Sciences



4320B

HUMAN EMBRYOLOGY, DEVELOPMENT AND DISEASE

Course Instructor: Dr. Christine Bell, Ph.D.
School of Health Studies
Faculty of Health Sciences

2020



Western University is committed to a **thriving campus**; therefore, your health and wellness matter to us! The following link provides information about the resources available on and off campus to support students: <https://www.uwo.ca/health/> Your course coordinator can also **guide you** to resources and/or services should you need them.

HS 4320B

Human Embryology, Development and Disease

The prerequisite for this course is HS 3300A/B or KIN 3222A/B. Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

January – April 2020

COURSE OUTLINE

This course will study the development of the human from fertilization through to parturition. Clinical implications of congenital anomalies and developmental disorders will be discussed from a morphological perspective. An understanding of the origin of various tissues and organs will provide the student a better understanding of the normal anatomy of the adult human.

There are 3 lecture hours per week. (**Tuesday, 9:30 am – 11:30 am and Friday, 9:30 am – 10:30 am, AHB 1B04**). The course will investigate human development from multiple perspectives and students will be evaluated by examinations consisting of multiple choice and short answer questions. Groups of students will work together to develop a health communication piece on a developmental disorder to gain a greater understanding of such conditions. In class and on-line discussions will elaborate upon lecture material.

COURSE OBJECTIVES

The purpose of this course is to provide the student with an advanced understanding of the key phenomena that occur during human developmental and the potential consequences that result due to anomalous developmental events.

Following completion of this course, students will be able to

- Describe key events during all stages of human development
- Illustrate the significance of coordinated development by offering examples of congenital and abnormal developmental occurrences
- Distinguish between the various stages of normal development or root causes of abnormal development
- Create a summary of relevant developmental events and related abnormal sequelae for use by non-experts

COURSE ADMINISTRATION

INSTRUCTOR

Dr. Christine Bell
Health Sciences Building, room 222
christine.bell@uwo.ca

OFFICE HOURS

Friday 10:30 – 11:30 AM OR by appointment.

Due to the nature of the professoriate, there are times when unforeseen circumstances may prevent me from being present during scheduled office hours. I am always interested in hearing from students so feel free to contact me with some potential meetings times and I will respond with a mutually suitable date and time.

COURSE CONTACT

Course E-mail address: I can be contacted through my e-mail address: christine.bell@uwo.ca. I will endeavor to answer your e-mail promptly and within 24 hours during the hours of Monday to Friday from 9 AM to 5 PM. I will rarely respond to emails during the weekend. Some external email services may encounter SPAM blocking or filtering. It is essential that you use your UWO account, otherwise, important and timely information may not get to you if you are using another email service.

Web site address: <https://owl.uwo.ca/portal>, Log onto OWL using your user name and password. You must be registered in this course to have access to the site and you must have an account established with UWO. All course-related materials are delivered through OWL.

HEALTH AND WELLNESS

SUPPORT SERVICES

There are various support services around campus and these include, but are not limited to:

1. Student Development Centre -- <http://www.sdc.uwo.ca/ssd/>
2. Student Health -- <http://www.shs.uwo.ca/student/studenthealthservices.html>
3. Registrar's Office -- <http://www.registrar.uwo.ca/>
4. Ombuds Office -- <http://www.uwo.ca/ombuds/>

ACADEMIC CONSIDERATION AND ACCOMMODATIONS FOR MISSED WORK

The University recognizes that a student's ability to meet their academic responsibilities may, on occasion, be impaired by extenuating circumstances, including short-term illness or injury. Reasonable academic consideration is a cooperative process between the University, the student, and academic staff. All participants in the process must act in good faith, and fulfil their respective obligations, if it is to succeed.

Students who experience an extenuating circumstance (illness, injury, or other extenuating circumstance) sufficiently significant as to temporarily render them unable to meet academic requirements, may submit a request for academic consideration through the following routes:

- (i) Submitting a Self-Reported Absence form, provided that the conditions for submission are met;

- (ii) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner, in order to be eligible for Academic Consideration; or
- (iii) For non-medical absences, submitting appropriate documentation (e.g., obituary, police report, accident report, court order, etc.) to Academic Counselling in their Faculty of registration, in order to be eligible for academic consideration.

Students seeking academic consideration:

- Are advised to consider carefully the implications of postponing tests or midterm exams or delaying handing in work;
- Are encouraged to make appropriate decisions, based on their specific circumstances, recognizing that minor ailments (e.g., upset stomach) or upsets (e.g., argument with a friend) are not normally an appropriate basis for a self-reported absence;
- **Must communicate with their instructors no later than 24 hours** after the end of the period covered by either the self-reported absence or SMC, or immediately upon their return following a documented absence;
- **Are advised that all necessary documentation, forms, etc. are to be submitted to academic counselling within two business days after the date specified for resuming responsibilities**

Students who experience an unexpected illness or injury or an extenuating circumstance (48 hours or less) that is sufficiently severe as to temporarily render them unable to meet academic requirements (e.g., attending lectures or labs, writing tests or midterm exams, completing and submitting assignments, participating in presentations) should self-declare using the online Self-Reported Absence portal. This option should be used in situations where the student expects to resume academic responsibilities within 48 hours or less. The following conditions are in place for self-reporting of medical or extenuating circumstances:

- a. Students will be allowed a maximum of two self-reported absences between September and April, and one self-reported absence between May and August;
- b. The duration of the excused absence will be for a maximum of 48 hours from the time the Self-Reported Absence form is completed through the online portal, or from 8:30am the following morning if the form is submitted after 4:30pm;
- c. The duration of the excused absence will terminate prior to the end of the 48 hour period, should the student undertake significant academic responsibilities (e.g., write a test, submit a paper) during that time;
- d. The duration of an excused absence will terminate at 8:30am on the day following the last day of classes each semester, regardless of how many days of absence have elapsed;
- e. Self-reported absences will not be allowed for scheduled final examinations; for midterm examinations scheduled during the December examination period; or for final lab examinations (i.e., “bellringers”);
- f. Self-reporting may not be used for assessments (e.g., midterm exams, tests, reports, presentations, or essays) worth more than 30% of any given course;

DEVELOPMENT TEAMS

Various aspects of the course will be done as teams, typically of four students. Teams will be arranged after the first week of class and will remain constant for the duration of the course.

While there are pros and cons to having pre-arranged teams versus self-selected teams, it is my belief that you cannot always control the members of your team in professional situations. This exercise encourages everyone to work on improving inter-personal communication skills, increase responsibility and reduce social loafing. In general, students who are assigned to pre-arranged teams are better prepared to participate in substantive discussions with other group members during assessments, including being able to provide immediate feedback to their team members.

EXAMINATIONS

Exams will consist of multiple-choice questions including standard and k-type questions (multiple-multiple) as well as short-answer/case study questions. In addition there will be diagrams associated with some questions. The final exam will assess material learned throughout the course including clinical examples.

GRADING:	Midterm exam February 11th 2020 (in class)	20%	Standard five-item multiple-choice style exam comprised of 30 questions and short answer/case study questions.
	Final Exam (cumulative) April exam period	35%	Exam will be comprised of standard and K-type multiple-choice questions, images and short answer questions and case studies.
	Infographic Assignment Due: March 31, 2020 (Some components due earlier)	35%	Development Teams will collaborate to create an infographic and accompanying Professionals Handbook describing a congenital anomaly, its normal and abnormal development and potential resources for clients to explore (see assignment section for more details).
	Lecture review quizzes (various dates)	10%	An evaluation of understanding of material learned during various sections of the course. Quizzes are completed in class and done in development teams.

MAKE-UP EXAMINATIONS

*You must contact me, your course instructor, if you missed an exam. You may self-report your absence or provide **proper documentation** to the School office (academic counselor) as soon as physically possible (see university policies below for further instruction). The counselor will advise the course instructor of their support for accommodation. **If approved, written makeup***

examinations will consist of short and long answer questions, case studies and image-based questions based on material from lectures.

In-class review exercises cannot be made up if missed.

COLLABORATIVE TESTING

During the official course assessments (midterm exam and final), a portion of the evaluation will be derived from collaborative tests. This portion of the examination allows students to work together in their development teams to answer the exam questions. The collaborative testing portion of the exam will make up 15% of the exam grade and will be included *only* if it benefits the individual student. Therefore, if your grade as an individual is higher than your collaborative testing grade, then your mark will be made up exclusively on your own work. Past experience indicates that this occurs very infrequently so I do anticipate that the collaborative testing approach will benefit a great number of the students in the course.

LECTURE REVIEW QUIZZES

Lecture review quizzes will use the collaborative format to give students an opportunity to evaluate their understanding of course material to date. These short (~ 15 minutes, 8 questions) quizzes will take place at the beginning of class.

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating

INFOGRAPHIC ASSIGNMENT

A complete description (including grading rubric) can be found under the assignment tab on OWL. This is a group assignment by students teams working to create a resource for the dissemination of information (both normal development and abnormal development) targeted towards a non-expert audience. The assignment is worth 35% of the final course grade.

Supplementing the infographic will be a Health Professionals Handbook, a brief targeted towards a trained and professional audience that describes in detail, the congenital anomaly and its mechanism of deviation from normal development. The handbook will provide a description of resources, procedures, tools or facilities that can help address the anomaly. Details will be available on the assignments tab in OWL.

The following timelines are critical to the success of the assignment:

Important Due Dates	Topic	Weight
▪ February 14, 2020 by 5:55 PM	Identify the topic area	0 %
▪ March 13, 2019	DRAFT Infographic, submitted to OWL by end of day	0 %
▪ March 24, 2020	Peer review of DRAFT infographic by end of day	5 %
▪ March 31, 2020	FINAL Infographic, submitted to OWL by end of day	15 %

▪ March 31, 2020	Handbook, submitted to OWL by end of day	15 %
		35 %

There will be a **late penalty of 1% of the grade per hour** after the due date based upon the electronic time stamp assigned in OWL. All assignments must be submitted via OWL, no assignments will be accepted at the School of Health Studies office.

** The review of a peer’s contribution to the Development Team’s operation and production of work is an important element of successful teams. Such reviews may be used to amend the assessment of an individual member of the Development Team in regard to their work on the assignment.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>)

GRADING POLICY

The university-wide descriptor of the meaning of letter grades, as approved by Senate:

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work that is clearly above average
B	70-79	Good work, meeting all requirements and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable.
F	below 50	Fail

It is expected that the grades for this course will fall between 74% - 80%. In the event that the course average falls outside this range, a constant may be added (or subtracted) from each student’s grade, by the instructor, to bring the class average in line with School policy.

ROUNDING OF GRADES

This is a practice (for example, bumping a 79% to 80%) some students request. The practice will not occur in this course. The mark attained is the mark you achieved, and the mark assigned; there is no rounding to the next grade level. Please do not ask your instructor to do this for you. It degrades our collective experience as educators and learners. We both have an appreciation of high standards.

USE OF ELECTRONIC DEVICES



During Exams: Unless you have medical accommodations that require you to do so, or explicit permission from the instructor of the course, you may not use any of the following electronic devices during ANY tests, quizzes, midterms, examinations, or other in-class evaluations: cellphones, smart phones, smart watches, smart glasses, audio players or recorders of any sort, video cameras, video games, DVD players, televisions, laptop/notebook/netbook computers, flashlights or laser pointers.

During Lectures and Tutorials: Although you are welcome to use a computer during lecture and tutorial periods, you are expected to use the computer for scholastic purposes only, and refrain from engaging in any activities that may distract other students from learning. From time to time, your professor may ask the class to turn off all computers, to facilitate learning or discussion of the material presented in a particular class. **Unless explicitly noted otherwise, you may not make audio or video recordings of lectures – nor may you edit, re-use, distribute, or re-broadcast any of the material posted to the course website.**

EXPECTATIONS

You can expect me to be on time, answer your questions to the best of my ability, start class on time, and end class on time. Class will begin promptly and end with sufficient time to exit the classroom and make your way to your next class. I may not know the answer to every one of your questions. I will however do my best to obtain an answer and discuss it at the next lecture.

I expect you to be on time for class, respect the instructor and your classmates when sharing an idea in class, and listen without disturbing others in class. I expect you to manage your electronic communications – incoming cell phone calls *will no be tolerated* so please set your phones to work in quiet mode. I welcome the use of computers to take notes. However, ensure that your use abides by the policy on use of electronic devices stated above.

THE TEXTBOOK

Recommended Textbook

Moore, K.L., T.V.N. Persuad and M.G. Torchia. The Developing Human: Clinically Oriented Embryology; 11th Edition. Elsevier Saunders: Philadelphia, PA. 2020. Both online and printer version are acceptable.

Moore, K.L., T.V.N. Persuad and M.G. Torchia. The Developing Human: Clinically Oriented Embryology; 10th Edition. Elsevier Saunders: Philadelphia, PA. 2016.

Text used in prior offerings of course:

Sadler, T.W. Langman's Medical Embryology (11th ed.) Lippincott Williams & Wilkins: Baltimore, MD. 2010.

YOU ARE NOT REQUIRED TO KNOW ALL THE DETAILS IN THE TEXT. USE THE TEXT AS A REFERENCE AND REVIEW GUIDE. CONCENTRATE ON THE MATERIAL PERTAINING TO THE LECTURES AND WEB POSTINGS, UNLESS OTHERWISE SPECIFIED (e.g. A SECTION WITHIN A CHAPTER MAY BE ASSIGNED FOR READING). MANY OF THE DIAGRAMS USED IN CLASS ARE FROM THE TEXT, SO IT WILL BE A VALUABLE TOOL. THE QUESTIONS AT THE END OF EACH CHAPTER IN THE TEXT, ARE A GOOD EXAMPLE OF THE TYPE OF MULTIPLE CHOICE QUESTIONS TO EXPECT ON THE MIDTERMS AND FINAL.

POLICIES THAT SAFEGUARD YOUR SUCCESS

Additional health and wellness options

As part of a successful undergraduate experience at Western, we encourage you to make your health and wellness a priority. Western provides several on-campus health-related services to help you achieve optimum health and engage in healthy living while pursuing your degree. For example, to support physical activity, all students receive membership in Western's Campus Recreation Centre as part of their registration fees. Numerous cultural events are offered throughout the year. Please check out the Faculty of Music web page (<http://www.music.uwo.ca/>), or the McIntosh Gallery (<http://mcintoshgallery.ca/>). Further information regarding health and wellness-related services available to students may be found at <http://www.health.uwo.ca/>.

If you are in emotional or mental distress, please visit Western Psychological Services (<https://www.uwo.ca/health/psych>) for a list of options for obtaining help. To help you learn more about mental health, Western has developed an interactive mental health learning module, found here: <https://uwo.ca/health/wec/education/learning.html>.

STUDENT CODE OF CONDUCT

The purpose of the Code of Student Conduct is to define the general standard of conduct expected of students registered at The University of Western Ontario, provide examples of behaviour that constitutes a breach of this standard of conduct, provide examples of sanctions that may be imposed, and set out the disciplinary procedures that the University will follow. For more information, visit <https://www.uwo.ca/univsec/pdf/board/code.pdf>

ACADEMIC OFFENCES

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

ENGLISH PROFICIENCY FOR THE ASSIGNMENT OF GRADES

Students must be proficient in spoken and written English and must demonstrate the ability to write clearly and accurately. For more information , visit

https://www.uwo.ca/univsec/pdf/academic_policies/exam/english.pdf

Health Sciences 4320B

Human Embryology, Development and Disease

Course Schedule – Winter 2019

*Classes: Tuesday 9:30 – 11:30 am and Friday 930 – 10:30 am
Arts and Humanities Building (AHB) Room:1B04*

Week	Dates	Chapters	Topics	Assessment/Quiz/Midterm
1	Jan 7, 10	1 and 2	Course intro Developmental Period Gametogenesis	
2	Jan 14, 17	2 and 3	First week of development Second Week of Development	
3	Jan 21, 24	4 and 5	Third Week of Development 4-8 weeks of Development	Jan 21: Quiz 1
4	Jan 28, 31	5 and 6	Germ Layers Embryonic Age Fetal Development	Jan 28: Quiz 2
5	Feb 4, 7	7 and 20	Parturition Human Birth Defect	Feb 3: Quiz 3
6	Feb 11, 14	8 and 10	Body Cavities Respiration Development	Feb 11: Midterm Feb 14 by 5:55 PM: Info Topic
7	Feb 18, 21	Winter Break		
8	Feb 25, 28	11	Digestive System	Feb 25: Quiz 4 Feb 27: Midterm exam return and review
9	Mar 3, 6	9 and 12	Face and Neck Urogenital system	Feb 9: Quiz 5
10	Mar 10, 13	13	Online: Cardiovascular system	Mar 13 by 11:55 PM: Infographic Draft
11	Mar 17, 20	13 and 14	Online: Cardio continue Skeletal	
12	Mar 24, 27	15 and 16	Musculature Limb Development	Mar 24: Quiz 6
13	Mar 31, Apr 3	17	Nervous system Course review	Mar 31 by 11:55 PM: Final Infographic DUE Handbook DUE