

McMASTER UNIVERSITY
Department of Kinesiology

KINESIOLOGY 2F03

Human Growth, Motor Development, And Physical Activity

Fall Term, 2017

Office location and hours T.B.A. (or by appointment)

Lectures: Monday, Wednesday, and Thursday 10:30-11:20 HSC 1A1

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COURSE DESCRIPTION

This course has been developed as an entry level course in Human Growth, Development, and Physical Activity for students in the 2nd year Kinesiology program. In third or fourth year, students will have the option of enrolling in the more advanced level of this course, KIN 3UO3, Human Growth and Development: Genetic and Neuro-endocrine Regulation of Somatic Growth, Muscle, Physical Activity and Performance. The current course, KIN 2FO3 is mostly descriptive, focusing on age- and gender-related changes in general somatic growth, development, and maturity spanning the pre-natal to early adulthood periods of development, with an “introduction” to the factors that regulate these processes.

KIN 1AO3, 1AA3, 1AO6, 1EO3 and registration in KIN Level II are prerequisites for this course. This course is a pre-requisite for admission to KIN 3UO3 Human Growth and Development: Genetic and Neuro-endocrine Regulation of Somatic Growth, Muscle, Physical Activity and Performance. This course is also a pre-requisite for KIN 4QO3 Pediatric Exercise Physiology.

COURSE OBJECTIVES

1. to introduce and differentiate the concepts of somatic growth, maturation and development
2. to introduce study designs and basic techniques used to assess somatic growth, biological maturation and development
3. to examine key statistical and conceptual constructs in the formulation and application of growth charts with specific reference to the definition of “normal” growth and the prediction of future somatic growth, health and physical performance outcomes
4. to examine developmental stage, chronological age, sex and maturity-associated variation in somatic growth and development and their health and physical performance implications pre- and post-natally

From conception to adulthood in human beings!

ACADEMIC HONESTY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at <http://www.mcmaster.ca/academicintegrity>

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

COURSE FORMAT:

The course consists of three (3) one-hour lectures per week for the entire term (notwithstanding lost class time for the in class mid-term exam and the fall midterm recess (October 9, 11, and 12)). Students will complete a case study over the course of the term, integrating all relevant course lecture material, reading and internet information pertinent to the case study. This assignment (hard copy) is **due no later than Friday November 9, IN CLASS** (no drop box). A late penalty of 2% per day will be deducted from all late submissions.

LECTURE NOTES: Lecture notes, in PDF format, will be available on Avenue to Learn in advance of the lecture. Information on these slides may only be partially complete and students are expected to attend class and incorporate supplemental information discussed by the instructor to the summary comments on the slides.

REQUIRED READINGS / TEXT / ANCILLARY - CASE STUDY

Course Text:

The text, **Growth, Maturation and Physical Activity** will be used as the main reference source for this course and is highly **RECOMMENDED**. While students do not necessarily have to purchase their own copy of this text, specific information from the text may be required

to complete the case study assignment component of this course. For your information, this text is also the recommended text for KIN 3U03 and is a great resource for KIN 4Q03, Pediatric Exercise Physiology.

Growth, Maturation and Physical Activity, R.M. Malina, C. Bouchard and O. Bar-Or, Second Edition, Human Kinetics Publishers Inc.; Champaign, IL, 2004; new in the McMaster Bookstore or at reduced price as a used copy from the tank or from students who have already taken this course.

CASE STUDY: Ancillary Reading Materials :

You are required to complete (on your own time) the Centres for Disease Control (CDC) Growth Chart Training Modules found at the web site:

<http://depts.washington.edu/growth/index.htm>.

Information from these sources will support the completion of the case study assignment.

STUDENT RESPONSIBILITIES

1. Attendance at ALL lectures.
2. Completion of Mid-term exam – date and format to be discussed in class
3. Completion of a case study – detail to be provided in class
4. Completion of the final exam during regular Fall Term examination period.

Topics to be Covered (time permitting):

1. **Concepts & Perspectives in Human Growth, Maturation and Development. Ch.1**
 - 1.1. definitions and context: growth, maturation and development
 - 1.2. rationale for studying these phenomena
2. **Approaches & Techniques In The Study of Human Growth, Maturation, Development, and Physical Activity. Ch. 1, 3**
 - 2.1. basic study designs and research approaches in growth studies
 - 2.2. measurement and observation principles in growth/maturity assessment
 - 2.3. prenatal and postnatal assessment techniques
 - 2.4. common applications of growth charts
 - 2.5. concepts of channeling and tracking
3. **Growth Chart 101 Interpretation & Applications Of Human Growth Charts.**
 - 3.1. Assessing ‘normal / abnormal’ growth

4. **Functional Development. Ch. 9**
 - 4.1. Heart, blood, and lungs

5. **Body Composition and Adipose Tissue. Ch 8, 5**
 - 5.1. adipose tissue structure and function
 - 5.2. assessment of body composition

6. **Biological Maturation: Concepts and Assessment. Ch. 15**
 - 6.1. Maturity indicators: skeletal, sexual, somatic, dental, and neuromuscular maturation

7. **Strength and Performance. Ch. 11, 17**
 - 7.1. fitness and physical activity
 - 7.2. strength and motor performance relationship
 - 7.3. maturity-associated variation in performance

8. **Aerobic Performance. Ch. 12, 17**
 - 8.1. aerobic metabolism and assessment
 - 8.2. growth-related adaptations in aerobic performance

9. **Anaerobic Performance. Ch. 13, 17**
 - 9.1. anaerobic metabolism and assessment
 - 9.2. growth-related adaptations in anaerobic performance

EVALUATION

Mid-term Exam	30%
Case Study – Growth Charts	25%
Final exam	<u>45%</u>
	100%

All instructors for all undergraduate courses, except supervised study, thesis and research/study courses, be required to return grade material equal to a minimum of 10% of the session's total mark prior to the final date which a student may withdraw from a course without academic penalty. For the Fall 2017 semester this date is Friday November 10, 2017.

IMPORTANT NOTES:

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be

arranged for each term of study. Student Accessibility Services can be contacted by phone (905) 525-9140 ext. 28652 or email sas@mcmaster.ca. For further information, consult McMaster University's Policy of Academic Accommodation of Students with Disabilities.

<http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf>

ON-LINE LEARNING RESOURCES

In this course, we will be using A Venue to Learn. Lecture notes, class schedule, and other notices may be posted electronically. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

USE OF COURSE MATERIALS

Course materials provided by the instructor are for use by students registered in this class only. Under no circumstances are these materials to be shared, posted or sold to a third party without permission from the instructor. This includes, but is not limited to, online posting of instructor provided lecture/lab notes, online lectures, recordings of lectures, or any lab materials on a website other than the Avenue site designed for the course.

ABSENCE FROM CLASS

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar "Requests for Relief for Missed Academic Term Work".

POLICY REGARDING DEFERRED TESTS AND EXAMS

Students who miss the term test or final exam for legitimate reasons such as illness may be allowed to write a deferred or "make-up" test. In all instances, appropriate documentation must be submitted to the Office of the Associate Dean, Faculty of Science.

Students who miss a Registrar-scheduled final exam can apply to the Associate Dean's office for permission to write in the deferred final exam schedule. In all cases, appropriate documentation must be submitted to the Office of the Associate Dean, Faculty of Science, for consideration of deferred examination permission. Under no circumstances will the instructor re-schedule a final

exam for individual students.

MODIFICATIONS TO THE COURSE:

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.