Clinical Biochemistry – Term II 2020
Biochemistry 3H03

Course Outline and Lecture Schedule

Course Coordinator:  Dr. Peter Whyte. Email: whytep@mcmaster.ca

Instructors:
- Dr. Stephen Hill  Email: hillstev@hhsc.ca
- Dr. Anthony Rullo  Email: rulloa@mcmaster.ca
- Dr. Murray Potter  Email: mpotter@mcmaster.ca
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- Dr. Cynthia Balion  Email: balion@HHSC.CA
- Dr. Phil Britz-McKibbon  Email: britz@mcmaster.ca

Teaching Assistant: Dr. Basma Ahmed

Lectures
Monday, Wednesday and Thursdays, 4:30 -5:20 pm
Burke Sciences Building, Room 147

Midterm Exams will be held in PGCLL 127 on Thursday February 6, 2020 and Thursday, March 12, 2020.

Course Objective: The course will introduce the student to: a) the physiological and pathological chemistry of different organ systems and b) biochemical tests used in the diagnosis and monitoring of disease.
Evaluation
There will be six on-line tutorial quizzes – January 20, February 3, 24, March 9, 23 and April 6. The best 5 of the 6 quizzes will count for 20% of the final mark. There will be 2 in-class term tests – Thursday February 6th and Thursday March 12th. The test will be administered during the lecture time. Format of the tests will be multiple choice. Each test will count for 20% of the total mark.

A final examination (registrar scheduled) will address the content of the entire course and will count for 40% of the total mark. The format of the final exam will be multiple choice. The course weighting cannot be changed.

Requests for Relief for Missed Academic Term Work
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”.

No make-up tests will be offered. If you miss a test and provide the appropriate documentation, the marks will be distributed as follows: remaining test 30%, final exam 50%. See the Department of Biochemistry and Biomedical Sciences, as well as the Faculty of Science policies regarding missed tests and use of the MSAF for clarification. If you miss a test and do not have the proper documentation, you will receive a ZERO for that test. Once you have submitted a quiz, test or exam, the mark will stand.

When using the MSAF, please report your absence the course coordinator at whytep@mcmaster.ca normally within 2 working days. Please note that the MSAF may not be used for term work worth 30% or more, nor can it be used for the final examination.

Please note: some students ask for test exemptions because of interviews for admission to professional or graduate schools. If you are out of town for your interview on the day of the test, this is appropriate. It is not, however, appropriate to request exemption because you are busy preparing for interviews, projects or other tests.

Academic Accommodation of Students with Disabilities
Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University’s Academic Accommodation of Students with Disabilities policy.

Academic Accommodation for Religious, Indigenous or Spiritual Observances
Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students requiring a RISO accommodation should submit their request to their Faculty Office normally within 10 working days of the beginning of term in which they anticipate a need for accommodation or to the
Registrar’s Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

**Extreme Circumstances**
The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.

**Courses with an On-Line Element**
In this course we will be using X. 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. 

\[ X = \text{e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.} \]

**Changes 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, we will give reasonable notice and communication with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course website regularly and to note any changes.

**Academic Integrity**
You are expected to exhibit academic honesty and use ethical behavior in all aspects of the learning process. Academic credentials you earn are rooted in ethical 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. The behavior 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 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 Dishonesty Policy, located at [www.mcmaster.ca/academicintegrity](http://www.mcmaster.ca/academicintegrity)

The following illustrates only three forms of academic dishonesty:
• Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
• Improper collaboration in group work.
• Copying or using unauthorized aids in tests and examinations.

Authenticity/Plagiarism Detection
In this course we will be using a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. Students will be expected to submit their work electronically either directly to Turnitin.com or via Avenue to Learn (A2L) plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty. Students who do not wish to submit their work through A2L and/or Turnitin.com must still submit an electronic and/or hardcopy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com or A2L. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). To see the Turnitin.com Policy, please go to www.mcmaster.ca/academicintegrity.

Course Website  The course website will be located on Avenue to Learn. Announcements, lecture notes and references will be posted there. Online tutorial quizzes will also take place on Avenue to Learn.

Course Textbook  The textbook for the course is Clinical Chemistry, 8th edition by W. Marshall, M. Lapsley and A. Day, Publisher – Elsevier
The 7th edition may be available on the used book market and is an acceptable text. Some lecture will loosely follow the textbook. References may be provided as additional or alternative material.

An electronic version of the book is available at: www.elsevier.com/books/clinical-chemistry/marshall/978-0-7234-3881-6

Course Notes
Lecture outlines will be available from the Biochemistry 3H03 site on Avenue to Learn shortly before or immediately after each lecture. These lecture outlines are intended as an aid to help us in our lectures and you in your studying. They are NOT intended to provide complete coverage of the material.
Schedule of Topics

Dr. Stephen Hill

Jan. 6  Intro into lab medicine and course overview. Why do lab testing? Lab vs point-of-care. Analytical and biological variability.

Jan 8, 9  Interpretation of test, rest performance characteristics


Jan. 15  Analytical techniques and case review.

Jan 16  Acid/base.

Jan. 20  Understanding and interpreting acid/base.

Jan 22  Salicylate toxicity and case examples.

Jan 23  Renal function

Jan 27, 29 & 30  Diabetes (Dr. T. Chetty)

Feb. 3 & 5  Biochemical genetics (Dr. M. Potter)

Feb. 6  1st Midterm Exam

Feb. 10 & 12  Biochemical genetics (Dr. M. Potter)

Feb. 13  Mass spectrometry, chromatography (Dr. A. Rullo)

Reading Week: February 17, 2019 – February 21, 2019

Feb. 24  Pediatrics (Drs. Hill, Potter)

Feb. 26 & 27  Lipids (Dr. G. Pare)

March 2, 4 & 5  Acute cardiovascular, cancer (Dr. P. Kavsak)

March 9 & 11  Metabolomics (Dr. P. Britz-McKibbin)

March 12  2nd Midterm

March 16, 18 & 19  Point of care; geriatrics (Dr. C. Balion)

March 23, 25 & 26  Toxicology (Dr. J. Macri)

March 30  Connective tissue disorders and related tests including multiplexing. (Dr. W. Khan)

April 1  No class.

April 2  Gastrointestinal disorders and related tests including immunoassays and immunofluorescence. (Dr. W. Khan)

April 6.  No class.