Course Description:
The molecular and cellular mechanisms that underlie disease pathogenesis will be covered, with a focus on how cellular miscommunication results in disease. The design process behind targeted disease therapeutics is also discussed. There is an additional focus on developing scientific writing and presentation skills using evidence-based persuasive arguments and critical analysis of primary research articles. Prominent disease categories can include but not be limited to: cancer, genetic, pathogen-induced, inflammatory, metabolic, cardiovascular, renal, respiratory, musculoskeletal, neurodegenerative disorders etc.

PREREQUISITES: LifeSci 3M03 or MolBio3B03; and registration in Level IV of an Honours Life Sciences program. Enrollment is limited.

ANTIREQUISITE: LIFESCI 4P03 if the topic was Mechanisms of Disease

Lectures:
- All classes will run for 3 hours on Tuesdays from 6-9pm in BSB B154
- Tests are scheduled during class times as indicated on the course schedule. Any changes to this schedule will be posted on Avenue to Learn.

Required Texts & Materials:
There is no required course textbook. Reading materials, lecture notes and course outlines will be posted as PDF files on the course website through Avenue to Learn (http://avenue.mcmaster.ca) for students to download and bring to class.

Course Objectives:
By the end of this course students will be able to:
- obtain an understanding of the signaling cascade networks that are important for normal cellular function and interactions, and how misregulation of these networks results in disease pathogenesis
- examine the design process that has resulted in the development of modern targeted disease therapeutics
- read, interpret and concisely summarize current research related to mechanisms of disease

Format:
- All lectures/seminars/class meetings are scheduled one day per week (Tuesdays 6:00-9:00pm)
- Tests are scheduled during class times as indicated on the course schedule. Any changes to this schedule will be posted on Avenue to Learn.

Evaluation:
Weekly Assignments (Group) 10%
Term Test 1 (Individual) 20% (in class: based on material from first 6 weeks of course)
Term Test 2 (Individual) 25% (in class: based on material from last 6 weeks of course)
Seminar 1 (Group) 10%
Seminar 2 (Group) 15%
Scientific Review Outline (Individual) 5%
Scientific Review (Individual) 10%
Participation (Individual) 5%
Total: 100%

Notes on Assessment:
Assignments will be given to student groups each week to help with interpretation and summarization of assigned readings. Assignments must be handed in by each group at the beginning of class the day the articles are being discussed. As part of the assignment, student groups will submit a 1-2 paragraph summary of the assigned weekly paper followed by 2-3 questions that can be posed in class. Late assignments will be graded as zero. Journal articles will be put on Avenue to Learn a week before discussions.

Term Tests will be cumulative (covering all course material that is presented up to that test date) and will include topics presented during the lectures, in addition to any material from student seminars, class discussions and any provided readings posted on Avenue to Learn. Term tests will include multiple choice, short answer, labeling figures, definitions and can include compare and contrast short answer questions.

Term tests will be scheduled during regular class time. The scheduled term tests will not be changed, and you must write both tests.

There are NO MAKE-UP TESTS in LIFESCI 4U03. There is no final exam in LIFESCI 4U03.

Seminars will be presented by students (in groups), based on topics that are approved by Dr. da Silva. All seminar papers will be handed out to the remainder of the class at least one week in advance of each class. The topics presented by students for both Seminar 1 and Seminar 2 can be related, but
the papers of focus must be different. Students can choose from a list of papers that will be provided (for seminar 1), or propose a paper of interest that must be approved by Dr. da Silva. Presentation dates will be assigned by random selection from the class list. Further seminar presentation details will follow during the first day of class. Seminars can be a maximum of 30 mins in length, with an additional 5-10 mins of questions and class discussion.

Scientific review Each student will select a topic that will be approved by Dr. da Silva and will write an individual scientific review that will be due at the end of the term. The topics for the scientific reviews may be related to the seminars that were presented in class, but must focus on different papers. All students must submit a scientific review outline for approval by Dr. da Silva. Further details will follow during the first day of class.

All scientific reviews must be submitted on time. Any late reviews will result in a late penalty of 25% per day (within 24 hours) with a mark of zero given to any assignments that are handed in more than 4 days (96 hours) following the due date.

Participation marks will be evaluated by Dr. da Silva based on students actively engaging in all class discussions and activities. Attendance only will not count towards participation marks.

*Note: A course schedule will be provided at the start of term 2 with outlined important course dates

Absences & Missed Work:
If you are absent from the university for a minor medical reason, lasting up to 3 calendar days, you may report your absence, once per term, without documentation, using the McMaster Student Absence Form (MSAF). Absences for a longer duration or for other reasons must be reported to your Faculty office, with documentation, and relief from term work may not necessarily be granted. When using the MSAF, report your absence to Dr. da Silva. You must contact Dr. da Silva immediately (normally within 2 working days) by email. Dr. da Silva will indicate what relief may be granted for the work you have missed, and relevant details such as revised deadlines. Please note that the MSAF may not be used for final deliverables, nor can it be used for a final examination or its equivalent.

***IMPORTANT***: You must identify Dr. Rosa da Silva (rosa.dasilva@mcmaster.ca) as the contact on the MSAF form and immediately after using the online tool, students MUST contact Dr. da Silva at this email regarding the nature of the relief. Failure to do so may negate the opportunity for relief.

If you submit an MSAF for an assignment or the scientific review/outline, the assignment or scientific review/outline must be submitted within 48 hours of the original deadline. Late assignments or scientific review/outline will be deducted 10% per day late. If you are unable to present your seminar you and your group members submit an MSAF, an alternate time will be arranged to present.

Checking Your Grades:
All grade concerns and discrepancies must be reported to Dr. da Silva (rosa.dasilva@mcmaster.ca). When the final marks are obtained, ALL borderline cases will be reviewed and, where warranted, adjustments will be made in the final mark.

Re-mark Policy:
All grade concerns and discrepancies must be reported to Dr. da Silva within two weeks of receiving your grade for each course component. Requests for re-evaluation of term tests must be made to Dr. da Silva within one-week of return of the marked term test or assignment. Only tests/assignments that are fully written in non-erasable pens or are typewritten will be considered for remarking. All requests must be made in writing to Dr. da Silva who will then consider a possibility of a re-mark. Please be aware that an approval for a remark can result in an increase, decrease or no change to the original mark.

Communication between Students and Faculty:
The University’s official method of correspondence with students is through a valid McMaster University e-mail account. It is the student’s responsibility to keep his/her @mcmaster.ca account active and check it on a regular basis. All emails from students must include your full name and course code (LIFESCI 4U03). All emails will be replied to within 48-72 hours.

Student Responsibilities:
To get the most out of the course, you must be prepared to:
• attend all sessions, make up all missed work, and provide documentation for authorized absences;
• interact frequently with faculty, students, TAs, and other support staff;
• plan and manage your own time;
• complete preparatory tasks (such as reading, writing assignments, and initial research) in advance of sessions;
• develop and use reflective learning skills (for example identifying learning objectives, planning and carrying out research tasks, acting on academic feedback);
• work as an effective, efficient, and responsive team member on group assignments;
• check the course Avenue site, and your McMaster and Avenue e-mail daily for updates; and,
• follow all university policies and guidelines, and in all ways be a responsible university member

Senate Student Policies
Students can view full policies here (http://www.mcmaster.ca/policy/Students-AcademicStudies/).
Senate Policy Statements are also available from the Senate Secretariat Office, Room 104, and Gilmour Hall.

• Academic Integrity - http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf
Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and 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.

The following illustrate only four of many 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;
- copying or using unauthorized aids in laboratory exercises;
- improper collaboration in group work; and
- copying or using unauthorized aids in quizzes, tests and examinations.

All students are reminded of the importance of academic integrity, and the serious consequences of academic dishonesty.


You acknowledge that your behavior in all aspects of this course should meet the standards of the McMaster University Student Code of Conduct. You understand that any inappropriate behavior directed against any of your colleagues, teaching assistants, or the instructional team will not be tolerated. Disruptive behavior during any session (e.g. lecture, seminar, lab, tutorial) such as talking, sleeping or non-class computing while an individual presents information, or constantly being late, will also not be tolerated. Abuse, ridicule, slander, inappropriate language, and discrimination towards instructors teaching staff, teaching assistants and other students will not be tolerated in any capacity. Shared spaces including e-spaces such as the Avenue to Learn course discussion board are to be considered inclusive and safe.

Section on Use of Turnitin.com

In this course, we will be using a web-based service (Turnitin.com) to reveal plagiarism. Students will be expected to submit their work electronically to Turnitin.com and/or in hard copy so that it can be checked for academic dishonesty. Students who do not wish to submit their work to Turnitin.com must still submit a copy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, etc.). To see the Turnitin.com Policy, please go to [www.mcmaster.ca/academicintegrity](http://www.mcmaster.ca/academicintegrity).

Copyright Policy

In this course you will have access to material that is subject to copyright laws. This includes (but is not limited to) textbooks and all resources developed by the instructors such as lab manuals, demonstration videos, quizzes, assignments, tests, class notes and class slides. Under no circumstance are you allowed to share or redistribute this material in any printed or electronic form without the explicit written consent of the copyright holder. This includes posting any course material on Internet bulletin boards, course repositories, social networks, etc.

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 e-mail sas@mcmaster.ca. For further information, consult McMaster University’s Policy for Academic Accommodation of Students with Disabilities.

The instructors and the university reserve the right to alter this outline if necessary.

The instructors 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.