

MOLECULAR AND CELLULAR BIOLOGY (MCB)

MCB*2050 Molecular Biology of the Cell Fall and Winter (LEC: 4) [0.50]

This course will develop an understanding of the key concepts of the molecular biology of the cell, integrating principles of cell structure and function with the underlying molecular mechanism(s). Discussions will focus on aspects of gene regulation, genomics, cell cycle control, protein synthesis, intracellular protein trafficking and protein degradation in eukaryotic cells. Many of these concepts will be discussed in the context of how defects in cellular processes give rise to disease.

Prerequisite(s): BIOC*2580, MBG*2040

Department(s): Department of Molecular and Cellular Biology

Location(s): Guelph

MCB*3010 Dynamics of Cell Function and Signaling Winter Only (LEC: 3) [0.50]

This course examines the dynamic properties of cells as they relate to cell-cell and cell-substrate interactions and elaborates on the fundamentals of intracellular signal transduction during these interactions. Topics will include the function and regulation of signalling modules, the cytoskeleton, and membrane component in the context of cellular interactions with other cells and with the extracellular matrix. These concepts will be integrated to develop a deeper understanding of dynamic cellular function within different tissue environments and physiological settings.

Prerequisite(s): MCB*2050

Department(s): Department of Molecular and Cellular Biology

Location(s): Guelph

MCB*4010 Advanced Cell Biology Winter Only (LEC: 3) [0.50]

This course examines the cellular and molecular biology of signal transduction. The major theme is an understanding of how eukaryotic cells receive, transmit and respond to environmental signals. Topics will include cellular regulation of cell cycle progression and cell death as well as the consequences of deregulated signal transduction in terms of disease, primarily cancer.

Prerequisite(s): MCB*3010

Department(s): Department of Molecular and Cellular Biology

Location(s): Guelph

MCB*4500 Research Project in Molecular and Cellular Biology I Summer, Fall, and Winter (LAB: 12) [1.00]

This course involves independent research of a practical or theoretical nature on a specific topic in molecular and cellular biology. It is carried out under the supervision of an individual faculty member. Students should make arrangements with both a faculty advisor and the course coordinator at least one semester in advance of taking the course. The signature of the course coordinator will be required to select the course. A departmental registration form must be obtained from, and submitted to, the course coordinator no later than the 2nd class day of the semester in which the student is registered for the course.

Prerequisite(s): MBG*3350 or equivalent laboratory experience at the discretion of the student's faculty advisor. Normally, students must have completed 6 semesters in an appropriate program in the biological sciences

Restriction(s): Minimum 70% cumulative average in science courses during the first 6 semesters of the relevant majors. Students in programs offering project courses cannot enroll in MCB*4500. Grade requirements may be waived in exceptional circumstances at the discretion of faculty advisor and course coordinator. Course coordinator consent required.

Department(s): Department of Molecular and Cellular Biology

Location(s): Guelph

MCB*4510 Research Project in Molecular and Cellular Biology Summer, Fall, and Winter (LAB: 12) [1.00]

This course involves independent research of a practical or theoretical nature on a specific topic in molecular and cellular biology. It is carried out under the supervision of an individual faculty member. Students should make arrangements with both a faculty advisor and the course coordinator at least one semester in advance of taking the course. The signature of the course coordinator will be required to select the course. A departmental registration form must be obtained from, and submitted to, the course coordinator no later than the 2nd class day of the semester in which the student is registered for the course.

Prerequisite(s): MCB*4500. Normally, students must have completed 6 semesters in an appropriate program in the biological sciences. Minimum 70% cumulative average in science courses during the first 6 semesters of the relevant majors.

Restriction(s): Students in programs offering project courses cannot enroll in MCB*4510. Grade requirements may be waived in exceptional circumstances at the discretion of faculty advisor and course coordinator. Course coordinator consent required.

Department(s): Department of Molecular and Cellular Biology

Location(s): Guelph

MCB*4600 Topics in Molecular and Cellular Biology Summer, Fall, and Winter (LEC: 1, LAB: 3) [0.50]

This course involves the independent study of a current topic in Molecular and Cellular Biology, selected from the recent research literature and involving a review and critical appraisal of the area. The course comprises independent library research, participation in weekly meetings, and written and oral presentations. Students should make arrangements with both faculty advisor and the course coordinator in a prior course selection period.

Prerequisite(s): MBG*3350 or equivalent laboratory experience at the discretion of the student's faculty advisor. Normally, students must have a minimum of 3.00 credits in 3000 or 4000 level BIOC, MBG, MCB OR MICR courses

Restriction(s): Students in programs offering topics courses cannot enroll in MCB*4600. Coordinator consent required.

Department(s): Department of Molecular and Cellular Biology

Location(s): Guelph