

**Pathology 827- Research Project in Pathology – September 2010**  
**(Course coordinator – Peter Greer <greerp@queensu.ca>)**

This course must be taken by all MSc students and those entering into the PhD program. Exceptions may be made, with permission of the Graduate Program Committee. The course will normally be completed in the second term, prior to the first departmental seminar. In exceptional circumstances, where English proficiency or academic background might be an issue (such as the need to take remedial course work), it may be extended beyond two terms. The student and supervisor will first establish a supervisory committee consisting of the supervisor and two other faculty members; neither of which need hold primary Pathology appointments. The supervisory committee members and the course coordinator will evaluate the required course work. **The course coordinator (Peter Greer) and graduate secretary (Barb Saunders) must be officially informed of the composition of the supervisory committee by the student by the beginning of the 4<sup>th</sup> week of study.**

The first part of the course will involve **three essays, each based upon a key research paper (not a review article) provided to the student by the supervisor. These research papers should highlight central themes related to the research program of the students thesis work. Supervisors are requested to provide each of these three papers at least one month prior to the respective essay due date.** The student will evaluate each research paper, read the related literature and write a concise summary essay for each of these research papers using the **format of a News and Views article in Nature**. This should consist of a **concise summary paragraph**, followed an **overview of the field**, a **brief description** and **critical assessment** of the work, and a discussion its **relevance/significance** to the field and what it means in terms of **future directions**. Ideally, a **concise figure** capturing the key points of the work should be included. The essay will be a **maximum of 5 double spaced pages** (Times Roman, 12 font, 1 inch margins all around; not including figures and references). Be sure to properly cite the primary literature using the format of **Cancer Research** or a comparable format which **includes titles in the cited literature**.

On the **due dates for these three essays are Oct 25, Dec 6 and Jan 17**, the student will provide **hard copies of the essays and associated research papers** to their supervisor and supervisory committee members; and they will **email an electronic file copy of the essay (in Word, not PDF; figures may be sent as a PDF) and PDF files of the research article to the course coordinator. Late assignments will be penalized.** The coordinator will email each member of the supervisory committee a **“Path 827 essay evaluation form”**. Committee members will send their completed evaluations to the coordinator, who will tabulate the marks and send the feedback and averaged mark to the student. In addition to carefully considering feedback provided in these evaluations, the student should discuss their essays with their supervisor and supervisory committee members to solicit feedback to assist in refining their writing skills in subsequent assignments. **The objective of these essays includes developing skills in scientific writing and critical evaluation of published research papers**, as well beginning to build a bibliography of relevant literature to draw on in future writing commitments (eg. research proposal, mini-master, comprehensive, manuscripts and thesis).

The second component of the course is a **written research proposal and oral presentation**. The ideas for this proposal will be developed in consultation with the supervisor. Students may solicit verbal feedback from their supervisors on drafts of this proposal, but supervisors should not edit these drafts. In the case of students intending to graduate with an MSc degree, it is encouraged that this proposal be developed in such a way that it will form the foundation of the students eventual thesis research. However, for direct entry PhD students, or those intending to convert to the PhD stream, it is understood that this proposal might be largely an exercise, and may not closely conform to their eventual PhD thesis research project. **The written research proposal is due March 7.** It is to be written in the form of a grant proposal and will contain the following sections: 1) Summary with hypothesis and bullet point aims; 2) Background, concluding with restated hypothesis and experimental aims; 3) Detailed experimental aims and approaches, including preliminary data and discussion of expected outcomes and potential caveats; and 4) Significance and future perspectives. **The maximum length of this document will be 10 double spaced pages** (Times Roman, 12 font, 1 inch margins all around; not including figures and references). **An oral presentation of this proposal will take place in late March.** The student will give a **20 minute** oral presentation structured in the format intended for their Department seminar. The presentation will be followed by a question and discussion period of approximately one hour.

Students will be evaluated on their three essays (20% each), the written research proposal (20%) and on their research proposal presentation/discussion (20%).