

Course Calendar

Advanced Radiotherapy and Medical Physics IMS – MSC 1500H (0.5 FCE)

This course will provide students with a conceptual framework with which to evaluate current advances in the design, delivery and assessment of modern radiation treatment. Fundamental principles driving development and research in the optimization of dose delivery, in the constantly evolving role of imaging for radiotherapy, in the recent advances in radiobiology, and the implications of these advances for radioprotection. This course will offer a multidisciplinary approach at the cross of clinic, physics, biology and technical expertise. The course is organized as a seminar series, where groups of experts will focus on gaps in our knowledge as well as on the present and future directions in various aspects of radiation medicine. This course will teach basic physics in a very pragmatic way, meaning that equations or fundamental principles will be described along with practical radiation medicine application. Eventually this course will bring the student a vision of where radiation medicine is going, as well as a strong physics knowledge allowing them to become creative researchers in the field.

Translational Radiobiology applied to Radiation Science IMS – MSC1502Y (0.5 FCE)

In an era where dramatic improvements in the quality and sophistication of radiotherapy are being achieved, this graduate half course (over 2 terms) is designed to highlight state-of-the-art knowledge regarding responses to ionizing radiation at the molecular, cellular and clinical levels. Both interactive seminar sessions, wet lab/dry lab demonstrations will make up a series of specific modules to translate basic scientific findings to the radiotherapy clinic.

Frontiers in Radiation Medicine Research – MSC 1501H (0.5 FCE)

This course provides the students with an introduction to research methodology relevant to radiation medicine through exposure to current research projects being carried out within the University of Toronto and the radiation medicine community at large. It exposes students to the application of fundamental research methods across the complete spectrum of radiation medicine research including: basic biological research and therapeutics, basic and applied medical physics research, translational biological and clinical research including quality of life studies and health outcomes epidemiological research.

Clinical Reasoning and Decision Making in Radiotherapy Part 1– MSC 1503H (0.5 FCE)

Clinical Reasoning and Decision Making in Radiotherapy Part 2– MSC 1504H (0.5 FCE)

Clinical Reasoning and Decision Making in Radiotherapy Part 3– MSC 1505H (0.5 FCE)

In these course, systematic approaches to clinical decision-making as it applies to radiation therapy for cancer will be explored based on the complex interplay of factors in three key domains: tumour biology, technical radiotherapy and the individual host. Each of these themes will be the basis of a series of 3 0.5 FCE courses. Each course will highlight gaps in current clinical science literature relating to a variety of primary cancer sites and students engage in decision-making exercises based on these issues. Through a combination of lecture, case presentation, self-directed preparation, group work and problem-based learning, students will integrate existing clinical, theoretical and scientific knowledge to debate the rationale for current clinical practice.

Professional and Clinical Leadership - MSC 1506H (0.5 FCE)

This interdisciplinary course will introduce and indoctrinate the principles that lead to professional and clinical leadership for the advanced radiation therapist. Concepts such as leadership, mentorship, knowledge translation, interprofessional education and practice, quality systems, group dynamics and behaviour, and self regulation will be used to engage the learner in thought and discussion about the underpinning issues that are relevant to being a leader in the health care system in the 21st century.

Course Calendar

Clinical Competence and Continuous Learning - MSC 1507H (0.5 FCE)

Attaining and maintaining clinical competence is a life-long undertaking for health care professionals. Assessing needs and gaps, and establishing professional goals is fundamental to developing appropriate strategies for achieving competence. Proving and attesting to competence is also critical in education and in practice for regulated health professionals. In this course, students will be introduced to the concepts and theories that form the cornerstone of clinical competence evaluation. It will include exposure to the tools that can be used to monitor and evaluate their own competence, as well as for mentoring and guiding others in the development of their clinical competence. Through a series of lectures, self-directed learning activities, small individual and group projects, students will be able to apply the theories and tools to the educational and practice environments.

Medical Radiation Sciences Research Development - MSC 1508H (0.5 FCE)

The 1-semester course provides the student with resources to prepare for conduct of research including literature reviews, develop their research question and method, prepare necessary materials and traverse the ethics review process for a major research project related to their area of clinical specialization.

Bi-weekly seminars will be held to provide guidance for students concerning the various stages in the development of a project. Projects will be developed under the guidance of the Course Director, in consultation with the teaching site Professional Supervisor.

Master's Research Project - MSC 1509Y (0.5 FCE)

This 0.5 credit course runs across 2 consecutive semesters. Under the guidance of the Academic and Professional Supervisors, the student will conduct their research as per their approved proposal from MSC 1507H. Students will present the results of their work to their peers and colleagues and will prepare a final manuscript acceptable for peer reviewed publication.

Clinical Practicum 1 - MSC 1510H (1.0 FCE)

This is the first of two, 1-credit internship courses designed as the competency development segment of the program. The goal of this first clinical practicum is to allow the student to consolidate the theory and principles of clinical scholarship with the practice of advanced radiation therapy practice within the interdisciplinary care team. Practice scholarship involves the adoption of evidence-based radiotherapy practice as well as the development of best practices in the delivery of effective and optimized radiation therapy to the client within the relevant program or service.

Students will use their Learning Plan developed during the Clinical Competence Evaluation course. They will have an approved plan outlining their clinical learning goals as well as for the portfolio of evidence they will compile based on those learning needs. During this course, the student will address the identified basic competencies for the area of specialization under direct supervision of The Graduate Preceptor at the local site. The Graduate Preceptor will be responsible for supervising the student and assisting him/her in the achievement of their course goals.

Clinical Practicum 2 - MSC 1511H (1.0 FCE)

This second internship course is designed to allow the student to build on basic competency in the area of specialization by progressing to the higher order activities of the specialty. Activities in all applicable domains – clinical, technical and professional – will be undertaken and refined.

Students will use their existing Learning Plan and revise if necessary in consultation with the Course Director and Graduate Preceptor. Basic competency activity will be undertaken with minimal or indirect supervision while higher-level activities will continue to be supervised directly by the Graduate Preceptor.