

GENERAL INFORMATION

Anatomy and Physiology for Medical Physicist MDPH 618 (3 credits)
Wednesday 2pm-5pm

Glen Site of the McGill University Health Centre
1001 boulevard Décarie, DS1.7001

Main Instructor: Dr. Marija Popovic

Office: Glen Site of the McGill University Health Centre L5-211DS19347,

Phone: (514) 934-1934 ext. 44157

FAX: (514) 934-8229

e-mail: marija.popovic@mcgill.ca

Office hours: Wednesday: 1pm-2pm or by email appointment.

Restriction

Only open to students currently registered in M.Sc. in Medical Radiation Physics program.

Course Description

Basic anatomy, physiology and oncology. The review of statistics will focus on study design and hypotheses testing in health studies. Focus on anatomic structures, their relationships, their cross-sectional and planar projections. Imaging and radiation treatment planning methods will be reviewed by anatomic region, as they apply to: central nervous system, head and neck, thorax, abdomen, pelvis and extremities.

MCGILL POLICY STATEMENTS

- "McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures" (see www.mcgill.ca/students/srr/honest/ for more information).

« L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site www.mcgill.ca/students/srr/honest/). »

- "If you have a disability please contact the instructor to arrange a time to discuss your situation. It would be helpful if you contact the Office for Students with Disabilities at 514-398-6009 before you do this."

- Guidelines for the use of mobile computing and communications (MC2) devices in classes at McGill have been approved by the APC. Consult the guidelines for a range of sample wording that may be used or adapted by instructors on their course outlines.
- “End-of-term course evaluations are one of the ways that McGill works towards maintaining and improving the quality of courses and the student’s learning experience. You will be notified by e-mail when the evaluations are available on Mercury, the online course evaluation system. Please note that a minimum number of responses must be received for results to be available to students.”
- "McGill has policies on sustainability, paper use and other initiatives to promote a culture of sustainability at McGill." (See the Office of Sustainability.)
- In keeping with McGill's preparedness planning strategies with respect to potential pandemic or other concerns, the Administration suggests that all course outlines for the 2010-2011 academic year contain the statement: “In the event of extraordinary circumstances beyond the University’s control, the content and/or evaluation scheme in this course is subject to change.”
- "Additional policies governing academic issues which affect students can be found in the McGill Charter of Students' Rights (The Handbook on Student Rights and Responsibilities is available at www.mcgill.ca/files/secretariat/Handbookon-Student-Rights-and-Responsibilities-2010.pdf)."

Eligibility to register

Students must be enrolled in MSc Program in Medical Radiation Physics at McGill University.

Learning objectives

The course is roughly divided into 13 sections, the first 7 covering introductory material, and the last 6, covering site based oncology. Each section consists of a 3 hour lecture or lab.

1. Intro to Oncology 1 (WP)
 - a. Introduction to Radiation Oncology - Clinical workflows and professions, working in a hospital, privacy and confidentiality – tour of department.
2. Intro to Oncology 2 (WP)
 - a. Cancer epidemiology – Canadian context
3. Intro to Medical Statistics in Health Sciences 1 (MP) – Sep 18
 - a. Population, samples, standard error and confidence intervals, p-values and statistical inference
 - b. Tests for comparing two groups of data (paired observations, two independent groups, non-normal distributions), correlation and linear

regression

4. Intro to Medical Statistics in Health Sciences 2 (MP) – Sep 25
 - a. Observational studies, randomized controlled trial and sample size issues
5. Intro to Clinical Oncologic Imaging (ES) – Oct 2
 - a. Review of imaging modalities (diagnostic and therapy)
 - b. Basic imaging terms and jargon Contouring, image registration, ICRU planning concepts
6. Intro to treatment Planning (WP) – Oct 9
 - a. Intro to Treatment Planning – workflows, concepts, functions of TPS.
 - b. Treatment planning distributions, DVH, assessment
7. Intro to Anatomy/Pathology/Histology/Hospital Labs (NY) -
 - a. Basic Anatomy terms and jargon
 - b. Basic Labs, histology
 - c. Neoplasms - histopathology

8. Midterm test

9. Central Nervous System (NY/ES/MP)
 - a. Anatomy, physiology, staging
 - b. Imaging and radiological anatomy
 - c. Treatment planning, doses, critical structures, dose tolerances
10. Ear, Nose, Throat (NY/ES/MP)
 - a. Anatomy, physiology, staging
 - b. Imaging and radiological anatomy
 - c. Treatment planning, doses, critical structures, dose tolerances
11. Thorax (NY/ES/MP)
 - a. Anatomy, physiology, staging
 - b. Imaging and radiological anatomy
 - c. Treatment planning, doses, critical structures, dose tolerances
12. Abdomen (NY/ES/MP)
 - a. Anatomy, physiology, staging
 - b. Imaging and radiological anatomy
 - c. Treatment planning, doses, critical structures, dose tolerances
13. Pelvis and Extremities (NY/ES/MP)
 - a. Anatomy, physiology, staging
 - b. Imaging and radiological anatomy
 - c. Treatment planning, doses, critical structures, dose tolerances

14. Anatomy Lab I

15. Anatomy Lab II

16. Final Exam

Proposed Evaluation:

Quizzes	20%
Midterm test	30% (covers sections 1-4)
Final exam	50% (covers sections 5-10)

Proposed Instructors:

Marija Popovic
William Parker
Norma Ybarra
Emilie Soisson