Graduate Program in Medical Physics
University of British Columbia Okanagan[1]

PROGRAM INFORMATION

Name of Credential: M.Sc. and Ph.D.

Title: Graduate Program in Medical Physics
https://cmps.ok.ubc.ca/graduate/medical-physics/

Unit Offering the Program: Department of Computer Science, Mathematics, Physics, and Statistics (CMPS), Irving K. Barber Faculty of Science, UBC Okanagan

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DEGREE REQUIREMENTS

Course Requirements **M.Sc.**: A total of 21 course credits beyond the B.Sc.

Required courses include:

- Phys 534 (3 credits): Radiotherapy Physics I,
- Phys 535 (3 credits): Radiotherapy Physics II,
- Phys 539 (3 credits): Radiation Dosimetry,
- Phys 540 (3 credits): Medical Imaging,
- Phys 544 (3 credits): Radiation Biophysics,
- Phys 546 (2 credits): Clinical Shadowing,
- Phys 547 (1 credit): Anatomy and Physiology for the Medical Physicist.

Elective courses include

- Phys 548 (3 credits): Special Topics in Medical Physics,
- Suitable 400-, or 500-level courses as determined by the supervisory committee.

Optional courses can be tailored to the student's research interests.
Course schedule for a typical academic year is outlined below.

Sept. - Dec.	**Jan. - Apr.**	**May - Aug.**
PHYS 534	Phys 535	Phys 546
PHYS 540	Phys 539	Phys 547
Phys 548 or elective	Phys 544	

[1] Version: Dec 2021.

Program Requirements

A minimum average of B+ (76%) must be maintained across all course work, with no grade below B (72%). A grade below a B in any course will necessitate a supervisory committee meeting to discuss the outcome. The student may be asked to repeat the course. Failure to achieve 74% or higher average in the repeated course will necessitate the student being asked to withdraw from the program.

M.Sc.: 21 course credits beyond the B.Sc., as outlined above.

• 12 thesis credits (Phys 549).

• Submission of a written research thesis, and a final oral defense of the research and thesis, in which the student will demonstrate knowledge of the material in the thesis. The thesis may be submitted at any time of the year. As the thesis is being written, the candidate will be in regular communication with the supervisory committee. When a draft is completed that the supervisory committee recommends for examination, the student may formally request an examination. The examining committee will include the members of the student's supervisory committee, one university examiner who is from UBC (Okanagan or Vancouver campus), and a committee chair from outside physics. Full standards for the MSc thesis defense can be found at http://gradstudies.ok.ubc.ca/current-students.html.

Ph.D.: 21 course credits beyond the B.Sc. are required for a Ph.D. degree. UBCO M.Sc. (or UBCO equivalent) medical physics courses can be considered towards the 21 credits total. The final course portfolio must contain, at a minimum, the M.Sc. course requirements outlined above.

• Successful completion of an oral comprehensive exam, and of the thesis proposal exam, typically no later than 24 months after initial enrollment into the Ph.D. program (or no later than 18 months after transfer from the M.Sc. program). These examinations may be held simultaneously. Failure to meet these timelines may result in the student's progress to be deemed unsatisfactory, and the student being asked to withdraw from the program.

The comprehensive and thesis proposal examinations are to assess the student's readiness to undertake research at the doctoral level and will probe the student knowledge, problem solving, and communication skills through writing, oral presentation, and interactive discussion. The comprehensive exam is based on the material covered in the core courses of the M.Sc. degree and additional material provided by the supervisory committee.

The thesis proposal exam is detailed as follows:

– The student writes a research proposal outlining the proposed project and including sufficient background and theory for the given project, proposed methods, results to date, and timeline to completion. The report is to be distributed to the committee (the supervisory committee and an exam chair, normally a member of the graduate program committee outside physics) no later than 2 weeks prior to the proposal exam date.

– An in camera oral exam in which the student will give a short (20 min) synopsis of the research proposal and the supervisory committee will ask rounds of questions probing for the suitability of the student's background knowledge in the chosen field, and the suitability of the proposed research project.

– The outcomes of the Comprehensive and of the Thesis Proposal Exam will be assessed separately and fall into one of three categories:

* Pass: The Dean of the College of Graduate Studies approves the request for advancement to candidacy.
* Conditional: The committee has identified weak areas within the candidate's background knowledge and/or the proposed research project. The students may be asked to undertake a re-examination, additional coursework, a re-evaluation of the research proposal, or a combination of the above.
* Fail: The student fails the exam. A second exam may be requested and with the support of the supervisory committee, undertaken no sooner than 3 months and no later than 6 months from the original exam date. A student who fails to obtain a pass will be asked to withdraw from the program.

• Enrolment in doctoral thesis (Phys 649, 0 credits).

• Submission of a written research thesis, and a final oral defense of the research and doctoral thesis. The doctoral thesis may be submitted at any time of the year. As the doctoral thesis is being written, the candidate will be in regular communication with the supervisory committee. Once the supervisory committee recommends the completed draft for examination, the student may formally request an examination. All doctoral theses must be assessed by the supervisory committee, a university examiner, and by an examiner external to the University. The external examiner is chosen by the College of Graduate Studies in consultation with the student's supervisor.

The requirements represent the normal completion of the program. If the proposed plan deviates from the requirements, then it must acquire **pre-approval** by the Graduate Program Committee.

Supervisory committee and Progress Reports

Throughout the program, a student is guided by the *Student's Supervisory Committee* which consists of the student's thesis supervisor and at least two additional professors or adjunct professors. When beneficial to the student's progress, the student's Supervisory Committee may include additional members. At least one supervisor of every Graduate student must be a continuing member of the **Medical Physics** Graduate Program. Furthermore, a minimum of 50% of the committee must be full faculty members within CoGS and UBC. Individuals who are external to UBC or those who do not hold the rank of tenure-track Professor, Associate Professor or Assistant Professor must be approved to serve on a student's committee by the Dean of CoGS. At a minimum of once each year, each graduate student in conjunction with their supervisory committee will meet to complete and submit to the graduate school an annual report documenting and evaluating student progress and degree completion plans. In the case of MSc candidates, the GPMP has established an 8 month review frequency for progress reports.