DEPARTMENT OF ONCOLOGY GRADUATE PROGRAM

List of Approved Courses – Cancer Sciences Specialization

Course Requirements

***Degree of MSc**:*

Course requirements are recommended by the supervisor and supervisory committee based on the background of the student and the area of research to be undertaken. A minimum of *9 in graded graduate-level courses chosen from the approved course listing, or approved equivalent is required. Students are required to enrol in a lecture-based background course and a seminar style course – normally these are ONCOL 520 or ONCOL 524 and ONCOL 661/ONCOL 660 respectively, but in exceptional circumstances, ONCOL 320, ONCOL 425 or some other seminar course, may be substituted, with the approval of the Associate Chair, Graduate Studies. Students are also required to attend ONCOL 661/ONCOL 660 seminars during all years of their program.

Degree of PhD:

For Students entering the PhD program after a BSc degree, the minimum course requirement is *12 in graded graduate-level courses chosen from the approved course listing, or approved equivalent. For students entering the PhD program after an MSc degree, in the same discipline the minimum course requirement is *6 in graded graduate-level courses chosen from the approved course listing, or approved equivalent. As with the Master's program, students are required to enrol in a lecture based course and a seminar course – normally ONCOL 520 or ONCOL 524 and ONCOL 660/ONCOL 661, in the second year. Students are also required to attend ONCOL 661/ONCOL 660 during all years of their program and to give at least three seminars (usually one per year) through ONCOL 660.

Approved Courses

ANAT 603 Medical Histology
★3 (fi 6) (second term, 0-3s-1).

ANAT 606 Selected Topics in Advanced Human Anatomy
★3 (fi 6) (either term, 0-0-3).

BIOCH 510 Signal Transduction and Metabolic Regulation
★3 (fi 6) (second term, 3-0-0).

BIOCH 520 Protein Chemistry, Structure and Function
★3 (fi 6) (first term, 3-0-0).

BIOCH 530 Biochemistry of Eukaryotic Gene Expression
★3 (fi 6) (first term, 3-0-0).

BIOCH 541 Structure and Function of Biological Membranes
★3 (fi 6) (first term, 3-0-0).

BIOCH 550 The Molecular Biology of Mammalian Viruses
★3 (fi 6) (first term, 3-0-0).

BIOCH 655 Advances in Lipid and Lipoprotein Research
★3 (fi 6) (first term, 1-2s-0).

BIOCH 675 Magnetic Resonance in Biology and Medicine II
★3 (fi 6) (second term, 3-0-0).

BIOL 501 Applied Bioinformatics
★3 (fi 6) (first term, 3-1S-0).

BME 513 Imaging Methods in Medicine
★3 (fi 6) (second term, 3-0-0).

BME 530 Topics in Biomedical Engineering
★3 (fi 6) (either term, 3-0-0).

BME 553 Rehabilitation Engineering: Assisted Movement After Injury
★3 (fi 6) (second term, 3-1S-0).

BME 564 Fundamentals of Magnetic Resonance Imaging, MRI
★3 (fi 6) (first term, 3-0-0).

CELL 502 The Birth and Death of a Cell
★3 (fi 6) (second term, 3-0-0).

DENT 532 Growth and Development
★2 (fi 4) (first term, 2-0-0).

DENT 551 Introduction to Applied Statistics
★3 (fi 6) (either term, 3-0-2).

GENET 500 Advanced Genetic Analysis I: The Genetic System
★3 (fi 6) (first term, 3-3s-0).

GENET 508 Graduate Course in Replication, Repair and Recombination
★3 (fi 6) (first term, 3-1s-0).

GENET 510 Advanced Topics in Gene Regulation, Development and Medical Genetics
★3 (fi 6) (second term, 3-3s-0).

GENET 512 Graduate Course in Genetic Control of Development
★3 (fi 6) (first term, 3-1s-0).

GENET 518 Graduate Course in Human Genetics
★3 (fi 6) (second term, 3-1s-0).

INT D 525 - Commensal Bacteria and Gastrointestinal Health
★3 (fi 6) (second term, 3-0-0)

INT D 570 Healthcare Ethics
★3 (fi 6) (either term, 0-3s-0).

LABMP 500 Introduction to Human Disease
★3 (fi 6) (either term, 3-0-0).

LABMP 510 Cryobiology I
★3 (fi 6) (first term, 2-1s-0).

LABMP 511 Cryobiology II
★3 (fi 6) (second term, 2-1s-0).

MDGEN 601 Selected Topics in Medical Genetics
★3 (fi 6) (either term, 0-3s-0).

MED 536 Inflammation
★3 (fi 6) (first term, 3-0-0).

MED 650 Fundamentals for Clinical Investigators
★ 3 (fi 6) (two term, 3/2-0-0)

MMI 505 Advanced Microbial Pathogenicity
★3 (fi 6) (first term, 3-0-0).

MMI 510 Informatics for Molecular Biologists
★3 (fi 6) (second term, 3-0-1).

MMI 515 Advanced Viral Pathogenesis
★3 (fi 6) (second term, 3-0-0).

MMI 552 - Advanced Immunology
★3 (fi 6) (second term, 3-1s-0).

MMI 605 - Current Topics in Infection and Immunity
★3 (fi 6) (either term, 0-4s-0).

ONCOL 520 Tumor Biology
★3 (fi 6) (second term, 3-0-0).

ONCOL 524 Nutrition and Metabolism Related to Cancer
★3 (fi 6) (first term, 3-0-0).

ONCOL 525 Advanced Topics in Cancer
★3 (fi 6) (second term, 3-0-0).

ONCOL 620 Recent Advances in Cancer Research
★3 (fi 6) (first term, 0-3s-0).

ONCOL 660 Current Topics in Cancer Research
★2 (fi 4) (second term, 0-1.5s-0).

ONCOL 661 Current Topics in Cancer Research II
★1 (fi 2) (first term, 0-1s-0).

OPHTH 601 Ocular Genetics
★3 (fi 6) (either term, 3-0-0).

PHARM 630 The Metabolism and Excretion of Drugs
★3 (fi 6) (either term, 3-0-0).

PHYSL 501 Topics in Cardiovascular Physiology
★3 (fi 6) (second term, 3-0-0).

PHYSL 503 Neuroendoimmunomodulation
★3 (fi 6) (first term, 3-0-0).

PHYSL 513 Fetal Physiology
★3 (fi 6) (second term, 3-0-0).

PHSYL 545 Physiology of Transport Systems
★3 (fi 6) (second term, 3-0-0).

PMCOL 508 Molecular Pharmacology
★3 (fi 6) (either term, 3-0-0).

PMCOL 512 Pharmacology of the Synapse
★3 (fi 6) (either term, 3-0-0).

PMCOL 514 Biophysical Aspects of Ion Channel Pharmacology
★3 (fi 6) (either term, 3-0-0).

PMCOL 515 Advanced Topics in Cardiovascular Pharmacology
★3 (fi 6) (either term, 3-0-0).

RADDI 512 Physics of Diagnostic Imaging: Imaging Modalities
★3 (fi 6) (either term, 2-0-0).

RADDI 600 Special Topics in Radiology Research
★2 (fi 4) (either term, 0-2S-0).

SPH 519 Biostatistics I
★ 3 (fi 6) (either term, 3-0-1)

SPH 531 Statistical Methods in Health Research
★ 3 (fi 6) (either term, 3-0-1)

Outside the University of Alberta:

NOTE: Students must get GCC approval prior to taking any course outside of the University of Alberta, for the credits to count toward their degree. Please fill out this form and submit it to oncolgra@ualberta.ca at least 1 month prior to the new term.

Coursera: Genomic Data Science Specialization (Offered by John Hopkins University)

- 6 Courses
    1. Introduction to Genomic Technologies
    2. Python for Genomic Data Science
    3. Algorithms for DNA Sequencing
    4. Command Line Tools for Genomic Data Science
    5. Bioconductor for Genomic Data Science
    6. Statistics for Genomic Data Science
- **NOTE**: You are gaining credits towards your degree and you are gaining a separate certificate for this course. This course does NOT appear on your transcript.