

UiT

**THE ARCTIC
UNIVERSITY
OF NORWAY**

Molecular and Clinical Aspects of Cancer

PhD Course



Invitation



The Faculty of Health Sciences at the Arctic University of Norway, University of Tromsø, would like to invite you to participate in a comprehensive course on molecular and clinical aspects of cancer. The study program focuses on the underlying mechanisms for cancer development but also serves as a more general introduction to basic disease mechanisms. The complete program is composed of two separate courses that may be followed independently.

We hope that you or any of your students, colleagues or staff will find interest in this multidisciplinary study program and participate in parts or all of it. We very much appreciate your help in forwarding this invitation to others that might be interested.

Course Aims



Information

Provide cutting edge, integrated information concerning molecular and clinical aspects of cancer to scientists, clinicians and students of science and medicine



Training

Provide training in analytical and critical approaches to cancer-related research and literature



Sharing

Attract and bring together participants from different fields and institutions

Topics

- ✓ Molecular Genetics of Cancer
- ✓ Signal Transduction and Cancer
- ✓ Tumor Biology
- ✓ Chromatin Organization and Epigenetic Mechanisms of Cancer
- ✓ Infection, Inflammation and Cancer
- ✓ DNA Repair
- ✓ Cancer Stem Cells
- ✓ Molecular Epidemiology of Cancer
- ✓ Novel Approaches in Molecular Medicine and Immunotherapy of Cancer



MBI-8007 (Autumn)

Molecular Basis for Cancer Development

Module I

Provides a broad overview of the molecular genetics of cancer, and discusses the basic molecular mechanisms leading to development of cancer. The main issues are mechanisms for cell-cycle regulation, proliferation, transformation, cell invasion and cell survival. How dysregulation of any of these processes may contribute to cancer development is discussed. Therapeutic strategies that arise from an understanding of these mechanisms are also discussed.

Module III

Covers a broad overview of tumor biology. Here the main mechanisms that regulate metastasis, angiogenesis, and apoptosis are described. These processes are fundamental for embryogenesis, but are also central in the establishment and maintenance of cancer cells. Students are introduced to the pathobiology of cancers in the context of the mechanisms that are discussed.

Module II

The topic is signal transduction and cancer. Here the various intracellular signaling pathways that are found to be dysregulated in cancer are discussed. Among these are the pathways that regulate cell proliferation, cell survival, metabolism, transformation and differentiation.

The course includes:

- ✓ 6 days of lectures
- ✓ 2 days of student seminars
- ✓ 2 days of seminar preparations
- ✓ 6 weeks to complete an essay

MBI-8008 (Spring)

Specific Mechanisms of Cancer and Strategies for Therapeutic Intervention

Module I

Covers the topics of DNA repair, Transcriptional regulation, Chromatin and Epigenetics and the impact of these processes on the fidelity of maintenance of proliferation, survival and differentiation of the cell. How dysregulation of any these processes may contribute to cancer development is highlighted.

Module III

Covers how cancer treatments can benefit from targeted therapy, cancer -omics and cancer epidemiology. Targeted therapeutic drug regimens and immunotherapeutic strategies will be focused on. The omics and epidemiology sections highlight the impact of genetic and environmental factors in cancer development.

Module II

Topics are infectious agents and their involvement in different cancer types, chronic inflammation and cancer, and the role of cancer stem cells. The infectious agents focused on are viruses, and how they may disturb the normal regulation of eukaryotic cells. Chronic inflammation is linked to cancer, and the molecular mechanisms involved will be presented. Finally, the presence and roles of cancer stem cells in both solid and hematopoietic tissues will be discussed.

The course includes:

- ✓ 5 days of lectures
- ✓ 3 days of student seminars
- ✓ 2 days of seminar preparations

Lecturers

The course is taught by an international staff and lecturers renown in their respective fields of research.

MBI-8007 (Autum)

Eric J. Stanbridge, PhD, University of California at Irvine
Channing Deer, PhD, University of North Carolina at Chapel Hill
Geir Bjørkøy, PhD, Norwegian University of Science and Technology
Stephen Baird, M.D. PhD, University of California at San Diego
Geoffrey Baird, M.D. PhD, University of Washington Medicine
Tuomas Tammela, M.D. PhD, Memorial Sloan Kettering Cancer Center
Terje Johansen, PhD, University of Tromsø

MBI-8007 (Autum)

Judith Stärk, PhD, University of Oslo
Arne Klungland, PhD, Oslo University Hospital
Sonia Rocha, PhD, University of Liverpool
Ugo Moens, PhD, University of Tromsø
Karina Standahl Olsen, PhD, University of Tromsø
Rein Aasland, PhD, University of Oslo
Linn Maria Gillberg, PhD, Copenhagen University Hospital
Rune Linding, PhD, University of Copenhagen
Simon Cook, PhD, University of Cambridge
Elise Marit Inderberg, PhD, Oslo University Hospital
Sébastien Wälchli, PhD, Oslo University Hospital
Øystein Rekdal, PhD, Lytix Biopharma

Lecture Schedule

MBI-8007 (Autumn)

Molecular and Clinical Aspects of Cancer Development

Including cancer genetics, signal transduction and tumor biology

6 days lecture

2 days of student seminars
2 days of seminar preparations

6 weeks to complete an essay

MBI-8008 (Spring)

Cancer Prevention, Diagnosis and Treatment

Including infectious agents and cancer, DNA damage and repair, chromatin structure, transcription, epigenetics, stem cells, cancer epidemiology and targeted therapy

5 days lecture

3 days of student seminars
2 days of seminar preparations

Application Deadline MBI-8007

June 1st 2018

MBI-8007

There is no course fee.

For the cost of 5.000 NOK each external participant will be offered housing in double room at a hotel in the center of Tromsø.

Please contact us as soon as possible for reservation of accommodation.

For more information, please visit
www.uit.no/mcac



Application Deadline MBI-8008

December 1st 2018

MBI-8008

There is no course fee.

For the cost of 5.000 NOK each external participant will be offered housing in double room at a hotel in the center of Tromsø.

Please contact us as soon as possible for reservation of accommodation.

For more information, please visit
www.uit.no/mcac



Need more info?

Application Process

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Course Information

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Accommodation

zvonko.mitrovic@uit.no

www.uit.no/studier/mbi-8007

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