BS347-15 Oncology

24/25

Department
Life Sciences
Level
Undergraduate Level 3
Module leader
Ioannis Nezis
Credit value
15
Module duration
10 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

This module aims to give students both an overview of cancer and also a more detailed understanding of specific aspects of its underlying causes and its clinical management.

Module web page

Module aims

This module aims to enable science students to bring their knowledge of cell and molecular biology to an understanding of the mechanisms through which cancer develops. However, we go further: the module aims to integrate biomedical and clinical aspects of oncology so that the student develops a satisfying all-round understanding of the complex biological and social phenomenon which is cancer5. To develop knowledge and understanding of data handling and statistical tests needed in Immunological research.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Lecture 1: Introduction to the cancer Lecture 2: aetiology and causes of cancer Lecture 3: cancer

development Lecture 4: cancer stem cells and heterogeneity
Lecture 5: growth factor signalling and the MAPK pathway Lecture 6: apoptosis and cell death Lecture 7: autophagy in malignant transformation and cancer progression Lecture 8: environmental factors that trigger DNA mutations Lecture 9: DNA damage Lecture 10: DNA repair and p53 Lecture 11: circadian clocks and cancer Lecture 12: circadian rhythm and chemotherapy Lecture 13: common oncogenic viral infections Lecture 14: oncogenic viral mechanisms and therapeutic targets Lecture 15: angiogenesis and metastasis Lecture 16: immunotherapy and immune surveillance. Lecture 17: biomarkers and cancer monitoring / diagnosis Lecture 18: Haematology 1: lymphoma Lecture 19: Haematology 2: leukemia Lecture 20: Haematology 3: multiple myeloma

Learning outcomes

By the end of the module, students should be able to:

- LO1 Know what are the causes of cancer and how they are detected
- LO2 Be able to describe the biological process by which cancer develops – carcinogenesis
- LO3 Have a good understanding of the main molecular mechanisms underlying carcinogenesis
- LO4 Know the main cellular mechanisms which limit the development of cancers
- LO5 Know the main immunotherapeutic targets and their mechanisms
- LO6 Know the main haematological cancers, their aetiology, causes and treatment strategies

Subject specific skills

1. Understanding the basic molecular control of cell cycle regulation and cancer 2. Understanding the molecular basis of cancer development
2. Understanding the importance of biological clocks
3. Understanding the molecular basis of oncoviruses
4. Understanding medical statistics, prognosis and biomarkers
5. Understanding the molecular basis and prognostication of haematological cancers

Transferable skills

1. Critical appraisal of source material 2. Self directed learning
2. Adult learning

Study

Study time

Type	Required
Lectures	20 sessions of 1 hour (13%)
Private study	130 hours (87%)
Total	150 hours

Private study description

130 hrs of self-study and directed reading to prepare for the open book assessment

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Students can register for this module without taking any assessment.

Assessment group A

	Weighting	Study time
Open Book Assessment	100%	20 hours

Final assessment for the module will be on open book assessment. This is an essay based assessment consisting of 4 questions- students need to answer 2. The essays cannot be answered using lecture notes alone- students will need to perform background research and essays will need to be fully referenced.

Feedback on assessment

Pastoral meetings with personal tutor

Availability

Courses

This module is Optional for:

- Year 3 of UBSA-C700 Undergraduate Biochemistry
- ULFA-C1A2 Undergraduate Biochemistry (MBio)
    - Year 3 of C1A2 Biochemistry
    - Year 3 of C700 Biochemistry

- Year 4 of ULFA-C702 Undergraduate Biochemistry (with Placement Year)
- Year 3 of ULFA-C1A6 Undergraduate Biochemistry with Industrial Placement (MBio)
- UBSA-3 Undergraduate Biological Sciences
    - Year 3 of C100 Biological Sciences
    - Year 3 of C100 Biological Sciences
- Year 3 of ULFA-C1A1 Undergraduate Biological Sciences (MBio)
- Year 4 of ULFA-C113 Undergraduate Biological Sciences (with Placement Year)
- Year 3 of ULFA-C1A5 Undergraduate Biological Sciences with Industrial Placement (MBio)
- UBSA-C1B9 Undergraduate Biomedical Science
    - Year 3 of C1B9 Biomedical Science
    - Year 3 of C1B9 Biomedical Science
    - Year 3 of C1B9 Biomedical Science
- ULFA-C1A3 Undergraduate Biomedical Science (MBio)
    - Year 3 of C1A3 Biomedical Science
    - Year 3 of C1B9 Biomedical Science
- Year 3 of ULFA-C1A7 Undergraduate Biomedical Science with Industrial Placement (MBio)
- ULFA-CB18 Undergraduate Biomedical Science with Placement Year
    - Year 4 of CB18 Biomedical Science with Placement Year
    - Year 4 of CB18 Biomedical Science with Placement Year
    - Year 4 of CB18 Biomedical Science with Placement Year
- Year 3 of ULFA-B140 Undergraduate Neuroscience (BSc)
- Year 3 of ULFA-B142 Undergraduate Neuroscience (MBio)
- Year 3 of ULFA-B143 Undergraduate Neuroscience (with Industrial Placement) (MBio)
- Year 4 of ULFA-B141 Undergraduate Neuroscience (with Placement Year) (BSc)

This module is Option list B for:

- Year 3 of UMDA-CF10 Undergraduate Integrated Natural Sciences (MSci)