General Information

Module Code

BIO-6006B

Academic Year

2021/2

Module Title

CELL BIOLOGY AND MECHANISMS OF DISEASE

Module type

WW

Semester / Term

SEM2

Level

6

Credit Value

20

Scheme

UG

Related Modules:

Pre-requisite

BIO-5005B

Co-requisite

Forbidden

Timetable slot

-

Is this module suitable for inbound study abroad students?

Y

Additional costs

Maximum number of students

999

Module Organiser

Dr Mette Mogensen

Module Description

What is this module about?

Do you want to learn about the key topics within cell biology and understand how these relate to human diseases? You will learn about the structure and function of cells in health and disease through a combination of practical demonstrations, where you will experience some of the imaging techniques used in the study of Cell Biology. You will also participate in a workshop, where you will learn how to design experiments.
This module will provide you with a solid understanding of aspects of cell structure, function and related diseases concerning: ubiquitination; the cytoskeleton; cell division; cell signalling in motility and wound healing; the extracellular matrix; growth factors and proliferation; cell differentiation and adult stem cells and apoptosis.

Learning objectives and Outcomes

What are the Learning objectives?

To learn though lectures, demonstrations, workshops and self-motivated research about a broad range of cell biology topics.
To gain an understanding of the importance of research in advancing our basic knowledge and the importance of this in relation to diseases.
The objective of the work-shop is to introduces the students to development of a hypothesis and experimental designs in cell biology research. The workshop provides formative information with regards to experimental design and critical assessment of cell biology techniques.

What are the Learning Outcomes?

Name	Details
1	Understand the applications of key cell biology techniques including: DNA cloning: various types of microscopy; image analysis; migration assays
2	How to design experiments Students are expected to design at set of experiments to prove or disprove a hypothesis. They need to critically evaluate the different techniques in terms of what they enable to prove
3	Understand the cell structure, function of key topic and how they are related to diseases

The topics include: ubiquitination; the cytoskelton; mechanics of cell division; cell signalling in motility and wound healing; the extracellular matrix; growth factors and proliferation; cell differentiation; adult stem cells and apoptosis

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Be able to read, understand and analyse articles
In journals such as Nature, Nature Cell, Biology, Cell, Journal of Cell Science and Journal of Cell Biology

Learning activities and Effort hours

Learning activity	Total effort hours	Indicative effort hours per week
1. Class sessions (Lectures, workshops, lab sessions, seminars etc.)	32	3
2. Pre-class preparation and follow up study		4
3. Work-based or Placement Hours		0
4. Formative assessments/ activities		2
5. Feedback/ Feed forward sessions	2	
6. Summative assessments (essays, dissertations, oral presentations, worksheets, lab reports etc.)	2	
7. Background reading		2
8. Exams/ OSCEs	1	
9. Course Tests	0	
10. Tutorials (Individual or small groups)	2	
Total Hours =	39.00	11.00

Learning Support Materials

Should this module be exempt from requiring an online reading list?

N

Link to Talis (https://uea.rl.talis.com/index.html)

Formative Assessments

Sequence	Assessment Type	Title	Deadline

Summative Assessments

Sequence	Assessment Type	Title	Deadline	Weighting	Method of submission	Method of return	Return date	Format and purpose of feedback	Colo prin

Attribute Development

On this module students will develop knowledge, insights and attributes that are readily transferable into future or current work settings. The attributes are articulated below to help understand how the module will help students to thrive on their course and prepare them for the world of work. These attributes are also articulated within the UEA Award.

Academic excellence

- [x] In-depth and extensive knowledge, understanding and skills in chosen discipline(s)
- [x] The ability to collect, collate, analyse and critically engage with a wide range of information sources, and evidence
- [ ] The ability to analyse and critically engage with a wide range of concepts and ideas

Critical thinking & problem solving

- [ ] A capacity for independent, conceptual and creative thinking
- [x] A capacity for informed argument and logical reasoning
- [x] A capacity for problem identification and problem-solving

Learning & personal development

- [ ] A commitment to developing professional values, self-insight and capabilities
- [ ] The ability to respond positively to constructive criticism and feedback from peers, tutors and colleagues
- [x] Self-confidence and an ability to exercise own 'voice'

Digital literacy and IT

- [x] Confidently employ a range of digital technologies for academic and professional/ career development purposes
- [ ] Use appropriate digital technologies and resources to locate diverse types of information for both academic and non-academic purposes
- [x] The ability to critically evaluate and engage with the information obtained

Self-management & professionalism

- [ ] A capacity for taking responsibilities and ownership of actions
- [x] An ability to manage time effectively, including setting priorities, juggling competing demands and meeting deadlines
- [ ] An understanding of work cultures and practices, including work place professionalism

Team working and leadership

- [ ] An ability to co-operate and collaborate with others, including working to shared aims
- [ ] An ability to take other viewpoints, have empathy for other people's position and give constructive feedback
- [ ] An ability to motivate and lead others, including taking the initiative and delegating when required

Communication

- [ ] An ability to communicate in written form for different purposes, audiences and contexts
- [ ] An ability to communicate in person for different purposes, audiences and contexts
- [ ] An ability to network effectively with others for specific purposes

Applied numeracy and Technical proficiency

- [ ] An ability to perform routine calculations in daily tasks and in applied contexts
- [x] An ability to analyse and interpret data and evidence
- [x] Proficiency in skilled techniques used for academic and professional purposes

Career management

- [ ] A capacity to reflect on and articulate qualities, strengths and attributes
- [ ] The ability to research specific job and career areas
- [ ] An ability to present your experience and attributes positively to graduate employers

Commercial awareness

- [ ] A knowledge of the link between academic subjects and their commercial applications
- [ ] An understanding of business priorities and the needs of graduate employers
- [ ] The ability to understand and prioritise customer needs

Innovation and enterprise

- [ ] The confidence to introduce and establish something new
- [ ] The potential to take an idea through to its practical application

- [ ] The potential to apply an enterprising mind-set to situations

Citizenship and stewardship

- [ ] An understanding of your place within local and global communities
- [ ] An awareness of the need to manage shared and finite resources, including an appreciation of moral and ethical dimensions
- [ ] An ability to improve the lives of others and lobby for positive change through community and/or political engagement