General Information

Module Code

BIO-6005B

Academic Year

2021/2

Module Title

MICROBIAL CELL BIOLOGY

Module type

WW

Semester / Term

SEM2

Level

6

Credit Value

20

Scheme

UG

Related Modules:

Pre-requisite

BIO-5003B or BIO-5015B

Co-requisite

N/A

Forbidden

N/A

Timetable slot

-

Is this module suitable for inbound study abroad students?

Y

Additional costs

N/A

Maximum number of students

999

Module Organiser

Dr David Lea-Smith

Module Description

What is this module about?

This module will provide you with a detailed understanding of cutting-edge developments in microbial cell biology. You will cover essential techniques used to carry out modern day molecular microbiology. These techniques will be further explained to you in the context of work done on model microbial systems in research conducted on the Norwich Research Park (NRP). The module is taught to you by world-leading research scientists from the NRP and focuses on the structure and analysis of bacterial genomes, the bacterial cytoskeleton, sub-cellular localisation, cell shape and cell division and intercellular communication between bacteria and higher organisms. You will also have research-led seminars delivered by NRP PhD students.

Learning objectives and Outcomes

What are the Learning objectives?

This course is designed to deliver an understanding of novel and important developments in microbial cell biology, including essential and emerging research techniques, widely used model organisms and cutting-edge science taking place across the Norwich Research Park.

What are the Learning Outcomes?

	Name	Details
1	Next generation sequencing	Appreciate how next generation sequencing is revolutionising the way we analyse and understand bacteria.
2	Molecular techniques	Understand how molecular techniques are used to study modern microbial cell biology
3	Gene regulation	Understand how genes and their complex regulation give rise to differentiation in simple and complex spore-forming bacteria

4

Envelope stress
Understand how bacteria sense and respond to cell envelope stresses

5

Bacterial targeting and communication
Understand how bacteria target proteins to sub-cellular locations, including the host during infection; and how bacteria communicate with each other and with higher organisms.

Learning activities and Effort hours

Learning activity	Total effort hours	Indicative effort hours per week
1. Class sessions (Lectures, workshops, lab sessions, seminars etc.)	35	
2. Pre-class preparation and follow up study	70	
3. Work-based or Placement Hours		
4. Formative assessments/ activities	5	
5. Feedback/ Feed forward sessions		
6. Summative assessments (essays, dissertations, oral presentations, worksheets, lab reports etc.)	15	
7. Background reading	60	
8. Exams/ OSCEs	2	
9. Course Tests		
10. Tutorials (Individual or small groups)		
Total Hours =	187.00	0.00

Learning Support Materials

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

Y

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

Formative Assessments

Sequence	Assessment Type	Title	Deadline
FM1	Formative Assessment	A research presentation of a recent high impact journal publication related to this module (25 minutes oral presenation)	

Summative Assessments

Sequence	Assessment Type	Title	Deadline	Weighting	Method of submission	Method of return	Return date	Format and purpos of feedbac
001	Written Assignment	Review and comment on the applications of a recent high impact journal publication related to this module (1000 words)		20 / 100		VIA MODULE		
Further Details								

Sequence	Assessment Type	Title	Deadline	Weighting	Method of submission	Method of return	Return date	Format and purpos of feedbac
002	Presentation	A research presentation of a recent high impact journal publication related to this module (25 minutes oral presenation)		20 / 100				
Further Details								
003	Exam Standard	Examination		60 / 100				
Further Details								

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)
- [ ] The ability to collect, collate, analyse and critically engage with a wide range of information sources, and evidence
- [x] The ability to analyse and critically engage with a wide range of concepts and ideas

Critical thinking & problem solving

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

- [ ] A capacity for problem identification and problem-solving

Learning & personal development

- [x] A commitment to developing professional values, self-insight and capabilities
- [x] 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

- [x] 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

- [x] 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
- [ ] 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

- [x] 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