

MODULE DESCRIPTOR

Module Title

Genomics and Proteomics

| | | | |
|-----------|-------------|-------------|---------|
| Reference | AS4020 | Version | 5 |
| Created | August 2017 | SCQF Level | SCQF 10 |
| Approved | July 2002 | SCQF Points | 15 |
| Amended | August 2017 | ECTS Points | 7.5 |

Aims of Module

To enable students to appreciate the use and relevance of a number of analytical methods/techniques in the analysis of biomolecules in research.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Discuss the principles and applications of genomics and proteomics in biological and biomedical research.
- 2 Discuss genomics and proteomics applications in relation to health and disease.

Indicative Module Content

Composition, structure and properties of DNA and proteins. Genomics will include principles and applications of DNA sequencing, DNA micro-arrays and their relevance in targeted gene expression and function analysis in health and disease. Proteomics will include 2-D gel electrophoresis, handling of proteins and peptide samples for proteomics and their relevance in targeted protein expression and function analysis in health and disease.

Module Delivery

This module is delivered by lectures and seminars.

Indicative Student Workload

| | Full Time | Part Time |
|------------------------------------------------------------------------------|-----------|-----------|
| Contact Hours | 20 | N/A |
| Non-Contact Hours | 130 | N/A |
| Placement/Work-Based Learning Experience [Notional] Hours | N/A | N/A |
| TOTAL | 150 | N/A |
| <i>Actual Placement hours for professional, statutory or regulatory body</i> | | |

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

| | | | | | |
|--------------|---------------------------------------------------------------------------------------|------------|------|--------------------|------|
| Type: | Coursework | Weighting: | 100% | Outcomes Assessed: | 1, 2 |
| Description: | Consists of the submission of a scientific abstract and an oral presentation defence. | | | | |

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

The module is assessed as described in the Assessment Plan. To pass this module, candidates must achieve a Module Grade D or better.

| Module Grade | Minimum Requirements to achieve Module Grade: |
|--------------|--------------------------------------------------------------------------------|
| A | A final mark of 70% or better. |
| B | A final mark of between 60-69%. |
| C | A final mark of between 50-59%. |
| D | A final mark of between 40-49%. |
| E | MARGINAL FAIL. A final mark of between 35-39%. |
| F | FAIL. A final mark of 34% or lower. |
| NS | Non-submission of work by published deadline or non-attendance for examination |

Module Requirements

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|--------------------------|-----------------------|
| Prerequisites for Module | AS3018 or equivalent. |
| Corequisites for module | None. |
| Precluded Modules | None. |

INDICATIVE BIBLIOGRAPHY

- DALE, J.W. and VON SCHANTZ, M., 2007. *From Genes to Genomes, Concepts and Applications of DNA Technology*. 2nd ed. John Wiley.
- PAGEL, M. and POMIANKOWSKI, A., 2008. *Evolutionary Genomics and Proteomics*. Sinauer Associates.
- LESK, A.M., 2008. *Introduction to Bioinformatics*. 3rd ed. Oxford University Press.