

Course Title: **Cells, Genes and Molecules**

Course Code: **GENE603**

Descriptor Start Date: **01/01/2025**

POINTS: **15.00**

LEVEL: **6**

PREREQUISITE/S: **BIOL500**

COREQUISITE/S:

RESTRICTION/S:

LEARNING HOURS

Hours may include lectures, tutorials, online forums, laboratories. Refer to your timetable and course information in Canvas for detailed information.

Total learning hours: 150

PRESCRIPTOR

An introduction to the structure and function of nucleic acids, proteins, genes and genomes.

LEARNING OUTCOMES

1. Demonstrate understanding of the structure and function of chromosomes, genomes, genes, DNA, RNA, and protein.
2. Describe how genetic information is stored and propagated.
3. Demonstrate understanding of gene regulation and expression in prokaryotes and eukaryotes.
4. Describe the molecular mechanisms behind DNA damage and repair.
5. Demonstrate competency in analysis methods for DNA and RNA.

CONTENT

- Brief review of Mendelian inheritance, and Non-mendelian inheritance
- Prokaryotic and eukaryotic genome organisation and gene structure
- Structure of DNA, RNA, and protein
- Replication, transcription, and translation
- Control of gene expression in prokaryotes and eukaryotes
- DNA mutation and repair
- Methods for analysing DNA and RNA such as nucleic acid isolation, electrophoresis, polymerase chain reaction, hybridisation, and sequencing.

Disclaimer: Course descriptors may be amended between teaching periods/semesters

LEARNING & TEACHING STRATEGIES

This course will consist of lectures, tutorials and laboratory classes.

ASSESSMENT PLAN

Assessment Event	Weighting %	Learning Outcomes
Test 1 (70 mins)	30.00	LO1, LO2, LO3, LO4, LO5
Lab Report (1,500 words)	40.00	LO1, LO2, LO5
Test 2 (70 mins)	30.00	LO1, LO2, LO3, LO4, LO5

Grade Map

MAP1

A+ A A- Pass with Distinction
B+ B B- Pass with Merit
C+ C C- Pass
D Fail

Overall requirement/s to pass the course:

Achievement of a minimum overall grade of C- is required to pass this course.

LEARNING RESOURCES

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For further information, contact: Te Ara Hauora A Putaiao - Faculty of Health & Environmental Science

Principal Programme: HA1041, Bachelor of Science

Related Programme/s: AK1041 Bachelor of Science
AK2040 Bachelor of Advanced Science (Honours)
AK3432 Bachelor of Medical Laboratory Science
AK3750 Diploma in Applied Science

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