

# BIOS 2026 MOLECULAR BIOLOGY

Legacy Code 300817

**Coordinator** Liza Cubeddu ([https://directory.westernsydney.edu.au/search/name/Liza Cubeddu/](https://directory.westernsydney.edu.au/search/name/Liza%20Cubeddu/))

## Student Contribution Band

Check your fees via the Fees ([https://www.westernsydney.edu.au/currentstudents/current\\_students/fees/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

## Learning Outcomes

On successful completion of this subject, students should be able to:

1. Structure of DNA, genes and chromatin.
2. Key processes of DNA replication and protein synthesis including transcription and translation
3. Transcriptional and post-transcriptional regulation of RNA; epigenetics, polyadenylation, RNA splicing and RNA interference.
4. Analysis of DNA and RNA; Polymerase chain reaction (PCR), DNA sequencing, reverse transcriptase PCR, cloning, microarray analysis, and introductory bioinformatics.
5. Techniques of molecular biology; including laboratory practicals and skills in the design, analysis and interpretation of experiments.

## Subject Content

Structure of DNA, genes and chromatin.

Key processes of DNA replication and protein synthesis including transcription and translation

Transcriptional and post-transcriptional regulation of RNA; epigenetics, polyadenylation, RNA splicing and RNA interference.

Analysis of DNA and RNA; Polymerase chain reaction (PCR), DNA sequencing, reverse transcriptase PCR, cloning, microarray analysis, and introductory bioinformatics.

Techniques of molecular biology; including laboratory practicals and skills in the design, analysis and interpretation of experiments.

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

| Type                                                 | Length      | Percent | Threshold | Individual/<br>Group Task | Mandatory |
|------------------------------------------------------|-------------|---------|-----------|---------------------------|-----------|
| Online Multiple Choice Quiz (Online Problem Solving) | 1 hour      | 15      | N         | Individual                |           |
| Laboratory Practical Component and Critical Analysis | 1,500 words | 45      | Y         | Individual                |           |
| Final Examination                                    | 2 hours     | 40      | Y         | Individual                |           |

## Prescribed Texts

- Michael M. Cox, Jennifer A. Doudna, Michael O'Donnell, (2015) Molecular Biology- Principles and Practice, 2nd Edition W. H. Freeman, New York