

# NATS 7019 FORENSIC ANALYSIS OF DNA

**Credit Points** 10

**Legacy Code** 301148

**Coordinator** Chris Lennard (<https://directory.westernsydney.edu.au/search/name/Chris Lennard/>)

**Description** This unit will introduce students to the identification and evaluation of biological evidence in criminal matters using DNA technologies, including the methods routinely used for the isolation of DNA from cells and techniques applied to DNA quantitation, electrophoretic separation, sequence determination, as well as data interpretation, analysis and reporting. This unit is taught by the University of Florida as part of a collaborative venture between the University of Florida and Western Sydney University. Note: Further information on this unit is available from the University of Florida.

**School** Science

**Discipline** Forensic Science

**Student Contribution Band** HECS Band 2 10cp

**Level** Postgraduate Coursework Level 7 subject

**Restrictions**

Students must be enrolled in 3741 Master of Forensic Science, 3742 Graduate Diploma in Forensic Science or 3743 Graduate Certificate in Forensic Science.

## Learning Outcomes

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

1. To understand the methods routinely used in DNA isolation, preparation and amplification
2. To know the methods available for DNA quantitation and their advantages and disadvantages
3. To be familiar with the range of historical and current DNA markers used in forensic analysis
4. To know the limitations of contaminated and mixed samples and the optimum means for their analysis
5. To understand the principles of DNA separation techniques including slab gel and capillary electrophoresis
6. To know the processes of hybridization and DNA visualization techniques and their advantages and disadvantages
7. To understand the processes for data interpretation and the statistical evaluation processes associated with identity and paternity testing
8. To understand the legal and forensic implications of DNA fingerprinting for purposes of court room testimony

## Subject Content

Module 1 DNA Introduction

Module 2 Quality Assurance and Performance Optimization

Module 3 DNA Isolation

Module 4 Assessment of Extracted DNA and Amplification

Module 5 Introduction to Data Collection and Interpretation

Module 6 Significance of a Match and Calculating Statistics

Module 7 Evaluation and Triage of DNA Samples

Module 8 Paternity and Identification

## 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.

Item	Length	Percent	Threshold	Individual/ Group Task
Final Exam	Not specified	100	N	Individual

Prescribed Texts

- Advanced Topics in Forensic DNA Typing: Methodology Author John Butler 1st Edition, August 4, 2011 ISBN 9780123745132

Teaching Periods

### Uni of Florida/Canberra-Term 1

**Online**

**Online**

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View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=NATS7019\\_22-FT1\\_ON\\_O#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7019_22-FT1_ON_O#subjects))

### Uni of Florida/Canberra-Term 2

**Online**

**Online**

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### Uni of Florida/Canberra-Term 3

**Online**

**Online**

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