NATS 7019 FORENSIC ANALYSIS OF DNA

Credit Points 10

Legacy Code 301148

Coordinator Ricky Spencer (https://directory.westernsydney.edu.au/search/name/Ricky Spencer/)

Description This subject 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 subject 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 subject is available from the University of Florida.

School Science

Discipline Forensic Science

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

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.

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

Prescribed Texts

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

Teaching Periods

Uni of Florida - Term 3 (2024)
Online
Online
Subject Contact Ricky Spencer (https://directory.westernsydney.edu.au/search/name/Ricky Spencer/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7019_24-FT3_ON_2#subjects)

Uni of Florida - Term 1 (2025)
Online
Online
Subject Contact Ricky Spencer (https://directory.westernsydney.edu.au/search/name/Ricky Spencer/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=NATS7019_25-FT1_ON_2#subjects)

Uni of Florida - Term 2 (2025)
Online
Online
Subject Contact Ricky Spencer (https://directory.westernsydney.edu.au/search/name/Ricky Spencer/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=NATS7019_25-FT2_ON_2#subjects)

Uni of Florida - Term 3 (2025)
Online
Online
Subject Contact Ricky Spencer (https://directory.westernsydney.edu.au/search/name/Ricky Spencer/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=NATS7019_25-FT3_ON_2#subjects)