NATS 7058 FORENSIC ANALYSIS OF DNA 2

Credit Points 10

Legacy Code 301434

Coordinator Mark Williams (https://directory.westernsydney.edu.au/search/name/Mark Williams/)

Description Forensic Analysis of DNA 2 is a continuation of 301148 Forensic Analysis of DNA where students learn about the methods routinely used for the isolation of DNA from cells and techniques applied to DNA quantitation and electrophoretic separation, as well as data analysis, interpretation and reporting. In DNA 2, students learn how to interpret DNA data to include mixture deconvolution and the statistics that apply to DNA matches/inclusions. Modules also guide the student through the basis of Y-STR and Kinship testing statistical applications. Students will also learn the report writing, review and testimony skills required of a DNA analyst. This subject is taught by the University of Florida as part of a collaborative venture with Western Sydney University. (Note: This subject description is as provided by the University of Florida; see: https://forensicscience.ufl.edu/programs/courses/forensic-analysis-of-dna-2/)

School Science

Discipline Forensic Science

Student Contribution Band HECS Band 2 10cp

Level Postgraduate Coursework Level 7 subject

Pre-requisite(s) NATS 7019

Restrictions

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

Assumed Knowledge

A basic understanding of undergraduate-level chemistry and biology is assumed as well as good general knowledge regarding the forensic analysis of DNA as provided by the pre-requisite subject (301148 Forensic Analysis of DNA), for example.

Learning Outcomes

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

1. Understand the basic steps of data analysis
2. Differentiate artefacts from alleles
3. Understand what DNA data looks like in and out of the optimal range
4. Understand how to differentiate single source samples from mixtures
5. Understand the steps taken to deconvolute mixtures
6. Understand the use of assumptions in mixture interpretation
7. Understand the significance of a match
8. Calculate random match probability and likelihood ratios
9. Understand when Y-STR analysis is to be utilised
10. Calculate Y-STR statistics for matches
11. Understand kinship testing scenarios
12. Calculate a Paternity Index
13. Understand common requirements and content of laboratory reports
14. Understand the purpose of the review process in DNA casework
15. Understand the basis and limitations of expert testimony

Subject Content

1.DNA Data Analysis
2.Autosomal STR Interpretation
3.Mixture Deconvolution 1
4.Mixture Deconvolution 2
5.Significance of a match and calculating statistics
6.Y-STR testing
7.Kinship Testing
8.Report Writing, Review and Testimony

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
Final Exam	8 x 30 minutes	100	N	Individual

Prescribed Texts

- Advanced Topics in Forensic DNA Typing: Interpretation John Butler 1st Edition (2014), Academic Press ISBN 9780124052130 (Available online to WSU students via https://ebookcentral.proquest.com/lib/uwsau/detail.action?docID=1770238)

Teaching Periods

Uni of Florida/Canberra-Term 1 (2022)

Online

Online

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View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7058_22-FT1_ON_O#subjects)

Uni of Florida/Canberra-Term 2 (2022)

Online

Online

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View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7058_22-FT2_ON_O#subjects)

Uni of Florida/Canberra-Term 3 (2022)

Online

Online

Subject Contact Mark Williams (https://directory.westernsydney.edu.au/search/name/Mark Williams/)

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Florida Term 1 (2023)

Online

Online

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Florida Term 2 (2023)

Online

Online

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Florida Term 3 (2023)

Online

Online

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