

NATS 7055 EXPERIMENT DESIGN AND PROJECT MANAGEMENT

Credit Points 10

Legacy Code 301371

Coordinator Mark Williams ([https://directory.westernsydney.edu.au/search/name/Mark Williams/](https://directory.westernsydney.edu.au/search/name/Mark%20Williams/))

Description Essential to a career in any branch of science is the ability to design the experiments of a project and manage this project to an outcome. This subject provides an introduction to the general theory of experiment design. The subject reviews the role of randomisation and replication in experiment design, considers the design techniques of constancy, blocking, and presents a number of experimental designs. This subject also covers the tools and techniques for effectively managing projects. Topics include development of project plans; estimation of time and resources; risk analysis and management; scheduling and control; resource allocation; project tracking; project closure and review.

School Science

Discipline Natural and Physical Sciences, Not Elsewhere Classified.

Student Contribution Band HECS Band 2 10cp

Level Postgraduate Coursework Level 7 subject

Learning Outcomes

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

1. Devise a series of experiments to address project or research objectives, including selection of an appropriate study design, data source or data collection plan, and a strategy for analysis.
2. Critically assess results and propose further series of experiments.
3. Appraise how project management concepts provide improvements in strategic planning and management of projects.
4. Apply knowledge and techniques to project planning, risk assessment and project management.
5. Evaluate procedures for monitoring, controlling, and completing projects.

Subject Content

1. Making research decisions. Reviewing the literature, forming research questions and hypotheses, operationalising constructs, choosing variables.
2. Experimental/research design: planning a research project: Experimental and quasi-experimental designs, between and within-subjects experimental designs.
3. Interpretation of results, analysis strategy, experiment re-design.
4. Project life cycle, selection and initiation, project planning.
5. Resource scheduling, budgeting.
6. Evaluating and managing risk.
7. Project progress and performance measurement, closure and audit.

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
Quiz	6 x 20 min	30	N	Individual
Portfolio	3,500 words	40	N	Individual
Portfolio	2,500 words	30	N	Individual

Teaching Periods

Autumn (2022)

Parramatta - Victoria Rd

Day

Subject Contact Mark Williams ([https://directory.westernsydney.edu.au/search/name/Mark Williams/](https://directory.westernsydney.edu.au/search/name/Mark%20Williams/))

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7055_22-AUT_PS_D#subjects)

Autumn (2023)

Parramatta - Victoria Rd

On-site

Subject Contact Mark Williams ([https://directory.westernsydney.edu.au/search/name/Mark Williams/](https://directory.westernsydney.edu.au/search/name/Mark%20Williams/))

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=NATS7055_23-AUT_PS_1#subjects)