NATS 7057 RESEARCH PREPARATION IN POST GRADUATE STUDIES

Credit Points 10

Legacy Code 301387

Coordinator Rodrigo Neves Calheiros (https://directory.westernsydney.edu.au/search/name/Rodrigo Neves Calheiros/)

Description Life is research! This unit introduces students to the nature of research and why it is essential to today's way of living. What are the current and big questions in research? How to prepare for conducting a research in various areas? What are the differences between study, investigation and research? In this unit, the main emphasis will be on different types of modern research and their methods/methodologies with special emphasis on Science, Technology, Engineering & Mathematics (STEM). This unit will also encompass various advanced tools that support research, its writing styles, publication channels and research ethics. Key elements of good research design are also introduced as well as the concepts of intellectual property and commercialisation.

School Computer, Data & Math Sciences

Discipline Other Natural And Physical Sciences

Student Contribution Band HECS Band 2 10cp

Level Postgraduate Coursework Level 7 subject

Equivalent Subjects ENGR 7018 - Research Preparation in Post Graduate Studies

Learning Outcomes

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

1. Describe essential characteristics of a STEM research project and identify whether a given scenario constitutes a research project or not
2. Formulate a research question or hypothesis from a given problem, select a suitable research methodology and explain the main steps in that methodology
3. Describe various ICT tools available to support research activities; especially to support activities associated with literature review and be able to effectively use these tools
4. Describe various types of publications associated with research, typical structure of such documents and current approaches to assess quality of such documents
5. Write a critical review of literature in a given area including STEM
6. Describe quantitative and qualitative research methods that can be used to support different research approaches in STEM disciplines
7. Demonstrate an awareness of ethics-related documents one needs to know as a researcher (such as the Australian Code for the Responsible Conduct of Research) and be able to explain the role of, and reason for, all of these ethics guidelines
8. Express research related contents through presentation and report writing

Subject Content

1. What is Research
2. Types of research projects and outcomes
3. How to conduct a Research project
4. Essential Tools to Support Research
5. Research writing styles and publication channels
6. Literature Review
7. Research Methodologies and methods
8. Ethics

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
Quiz	As per module	S/U	Y	Individual
Literature Review	1,500 – 2,000 words	30	N	Individual
Presentation	15 minutes	30	N	Individual
Proposal	1,500 – 2,000 words	40	N	Individual

Prescribed Texts

- Ranjit, Kumar (2014). Research Methodology, A Step-by-Step Guide for Beginners (4th ed.). Los Angeles: SAGE.

Teaching Periods

Autumn

Online
Online
Subject Contact Rodrigo Neves Calheiros (https://directory.westernsydney.edu.au/search/name/Rodrigo Neves Calheiros/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7057_22-AUT_ON_O#subjects)

Parramatta - Victoria Rd
Day
Subject Contact Rodrigo Neves Calheiros (https://directory.westernsydney.edu.au/search/name/Rodrigo Neves Calheiros/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7057_22-AUT_PS_D#subjects)

Sydney City Campus - Term 2
Sydney City
Day
Subject Contact Mahsa Razavi (https://directory.westernsydney.edu.au/search/name/Mahsa Razavi/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7057_22-SC2_SC_D#subjects)