TEAC 7116 RESEARCHING STEM EDUCATION FOR FUTURE LEADERSHIP

Credit Points 10

Legacy Code 102512

Coordinator Nathan Berger (https://directory.westernsydney.edu.au/search/name/Nathan Berger/)

Description From 2020 students should note that core units are now taught in semesters rather than half yearly sessions. This unit seeks to redefine and inform practice about what it means to be a contemporary STEM teacher by engaging with literature on a specific research topic in STEM education and designing and implementing a research project in a team on that area of STEM education. The focus is also on the role of teacher/practitioner-research as central to professional learning in contemporary education. The central role of practitioner research in the practice of future STEM educational leaders is emphasised. Students will also be required to complete evidence-gathering in an e-portfolio to demonstrate they meet the Australian Professional Standards for Teachers at: http://www.aitsl.edu.au/australian-professional-standards-for-teachers/standards/list.

School Education

Discipline Teacher Education, Not Elsewhere Classified.

Student Contribution Band HECS Band 1 10cp

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

Level Postgraduate Coursework Level 7 subject

Pre-requisite(s) TEAC 7121

Restrictions

Students must be enrolled in the program 1714 M Teaching (Secondary) or 1848 Master of Teaching (Secondary) STEM. These students are required to have completed 120 Credit Points from within the Master of Teaching. Or students must be enrolled in 1882 Graduate Certificate in Secondary STEM Education or 1887 Graduate Certificate in Primary STEM Education.

Assumed Knowledge

Students will require a knowledge of STEM education.

Learning Outcomes

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

1. Explain the role of relevant and appropriate professional learning in STEM education and the role of research in that professional learning.
2. Investigate the roles of future leaders in understanding what is required to effect valuable innovation in STEM education.
3. Locate and select relevant research literature to investigate a particular research question in STEM education.
4. Analyse key ideas, assumptions and domains of knowledge in the literature around a research question.
5. Identify appropriate research methods and design in the literature relevant to a particular research question in STEM education.
6. Demonstrate understanding of the ethical frameworks impacting on research in education.
7. Critically apply appropriate forms of data collection and data analysis to a research design on STEM education.

Subject Content

How can an orientation to research be part of the culture of contemporary STEM education and contemporary professional learning?
How is research a central role in contemporary teacher professional learning?
What is the place of research in the practice of future STEM education leaders?
What evidence-based research informs actions / responsibilities / dimensions that characterise effective STEM education in contemporary times?
What modes of research are commonly used in practitioner research in education (e.g. text analysis, action research, case studies, surveys)?
How is research on a nominated key problem or research question in contemporary STEM education best designed, carried out and analysed?

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
1a. Collaborative identification of a research question and discussion of its importance	500 words (submitted by each member of group)	10	N	Individual
1b. Professional Task Literature Review	1,500 words	40	N	Individual
Report on research project	3,000 words	50	N	Individual
Submit e-portfolio	Course capstone task	S/U	Y	Individual

Teaching Periods

Spring

Penrith (Kingswood)

Day

Subject Contact Nathan Berger (https://directory.westernsydney.edu.au/search/name/Nathan Berger/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=TEAC7116_22-SPR_KW_D#subjects)