



School of Education

EDST6726

Extension Mathematics Method 1

Term 1, 2020

Contents

1. LOCATION 2

2. STAFF CONTACT DETAILS 2

3. COURSE DETAILS 2

 STUDENT LEARNING OUTCOMES 3

 AUSTRALIAN PROFESSIONAL STANDARDS FOR TEACHERS 3

4. RATIONALE FOR THE INCLUSION OF CONTENT AND TEACHING APPROACH 4

5. a 9.3 reW*nBT/F2 11.04 Tf1 0 0 1 9.384 607.66 Tm0 g0 G[a 9.3 re8871 0 55Tm0.00)a0 G2]TETQ.0.0

1. LOCATION

Faculty of Arts and Social Sciences
School of Education
EDST6726 Extension Mathematics Method 1 (6 units of credit)
Term 1, 2020

2. STAFF CONTACT DETAILS

Lecturer: Edward Habkoug
Email: e.habkoug@unsw.edu.au
Availability: Please email to arrange an appointment

3. COURSE DETAILS

| | |
|----------------------|---|
| Course Name | Extension Mathematics Method 1 |
| Credit Points | 6 units of credit (uoc) |
| Workload | Includes 150 hours including class contact hours, readings, class preparation, assessment, follow up activities, etc. |
| Schedule | http://classutil.unsw.edu.au/EDST_T1.html |

SUMMARY OF THE COURSE

This course is designed as an extension Mathematics method course focusing on a deep understanding of pedagogical content knowledge for Mathematics teaching. Students will critically examine syllabuses. Students will appraise a range of strategies for teaching and assessing Mathematics and consider elements needed for quality teaching specific to Mathematics. Students enrolling in this course must also complete EDST6725 Mathematics Method 1 (6uoc).

THE MAIN WAYS IN WHICH THE COURSE HAS CHANGED SINCE LAST TIME AS A RESULT OF STUDENT FEEDBACK:

- To allow more time in tutorials to work on additional mathematical problems that promote the development of the working mathematical proficiencies in Stage 4, 5 and/or 6.
- To provide more opportunity to use tutorial time to experiment with teaching skills

STUDENT LEARNING OUTCOMES

| Outcome | Assessment/s |
|---------|---|
| 1 | Identify foundational aspects and structure of NSW Mathematics for stages 4, 5 and 6 |
| 2 | Design lesson plans and teaching units which demonstrate essential links between outcomes, assessment, teaching strategies and lesson planning. |
| 3 | |

4. RATIONALE FOR THE INCLUSION OF CONTENT AND TEACHING APPROACH

This subject aims to develop best practice in teaching based on current research. During the course students will expand their knowledge of The Australian Curriculum for New South Wales documents. Lectures, tutorials and assignments will cover a variety of approaches to teaching and learning in the Mathematics classroom. Emphasis will be given to the relationship between Mathematics, literacy and numeracy, the proficiencies, the general capabilities, and the role and value of Mathematics in the curriculum and the community.

Student-centred activities will form the basis of the course. These activities will draw on the prior knowledge of the students and will allow them to engage in relevant and challenging experiences that mirror those they will be expected to design for the secondary students they will later teach.

5. TEACHING STRATEGIES

approaches to learning and the use of a range of teaching strategies to foster interest and support learning.

Small group cooperative learning to understand the importance of teamwork in an educational context and to demonstrate the use of group structures as appropriate to address teaching and learning goals.

Extensive opportunities for whole group and small group dialogue and discussion, allowing students the opportunity to demonstrate their capacity to communicate and liaise with the diverse members of an education community, and to demonstrate their knowledge and understanding of method content.

Structured occasions for reflection on learning to allow students to reflect critically on and improve teaching practice.

Online learning from readings on the Moodle website.

Online discussions.

Peer teaching in a simulated classroom setting.

These activities will occur in a classroom climate that is supportive and inclusive of all learners.

7. RESOURCES

Required Texts

Cavanagh, M. & Prescott, A. (2014). *Your professional experience handbook: A guide for preservice teachers*. Sydney: Pearson.

2. The use of technology in teaching mathematical concepts (40%)

Explain how you would use a computer-based mathematical tool (e.g. Geogebra, Autograph, MSExcel, Wolfram Alpha, Desmos, Sketchpad etc.) to help students learn a particular mathematical concept from the Stage 5 or Stage 6 (Mathematics Advanced or Mathematics Standard **Year 11 only**).

Identify a mathematical concept that you wish to teach using technology as an aide.

Identify all the NSW syllabus outcomes in the task and show how they are linked to the activity.

Include an instruction worksheet for students to use for this activity using your ICT skills.

Include a lesson plan (see SED template). Include a detailed introduction to engage your students, enabling prompts and extending questions in your lesson plan.

You will need a written annotation to explain how the technology nominated in your task assists the students in better understanding the chosen concept. You must also identify how you would modify this task to meet the needs of your students (differentiation) as well as how you would carry out assessment for learning (AfL) in the process. Avoid giving your own opinion without any backing from research literature.

Demonstrate your concept electronically (or video link etc.) so that a student who has missed the lesson could understand the new concept by being sent the link (see flipped classrooms). Be prepared to share your work with the class.

UNSW SCHOOL OF EDUCATION
 FEEDBACK SHEET
 EDST6726 EXTENSION MATHEMATICS METHOD 1

Student Name:

Student No.:

Assessment Task 1 Creating an Assessment Task

| Specific criteria | (-) _____ (+) | | | | | |
|---|---|--|--|--|--|--|
| <p>Understanding of the question or issue and the key concepts involved</p> <p>Understanding of the task and its relationship to relevant areas of theory, research and practice. Rationale linked to outcomes in the syllabus. Show evidence of critical analysis and reflection.</p> | <table border="1" style="width: 100%; height: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> </table> | | | | | |
| | | | | | | |
| <p>Depth of analysis and/or critique in response to the task</p> <p>Ability to plan and assess for effective learning by designing an assessment task, marking criteria and rubric using knowledge of the NSW syllabus documents or other curriculum requirements of the education act. Reasons for the choice of questions and why it is a good task effectively explained</p> | <table border="1" style="width: 100%; height: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> </table> | | | | | |
| | | | | | | |

