Faculty of Education
The University of Western Ontario

B.Ed. Course Outline

Mathematics for Teachers, EDUC 5236
Wednesday, 10:30 – 12:30pm, Room 2036

Instructor: Marja Miller
Email: mgbertra@uwo.ca
Office: 2045, Office Hours: By appointment.

Calendar Copy:

This course focuses on making mathematics engaging and meaningful for learners. Participants explore ways to develop connected knowledge, consistent beliefs, and positive attitudes towards mathematics, and are introduced to research on the nature, role, and development of teachers’ knowledge of mathematics.

Learning Outcomes:

Pre-service candidates will:

- Review, discuss and reflect on theory and research on mathematics-for-teaching and on mathematics teacher development
- Prepare for teaching mathematics in the intermediate and senior grades in accordance with OCT Standards of Practice
- Refine individual points of views and philosophies with regard to what is mathematics and what it means to do mathematics
- Discuss a wide spectrum of points of view on mathematics education
- Actively engage in doing mathematics
- Actively share learning, teaching and other experiences related course activities

Course Content:

This course will focus on introducing pre-service teachers to:

- research and theory of mathematics teacher development and mathematics-for-teaching
• investigating big ideas of mathematics, their connections and relationships to other mathematics, and their representations at various grade levels
• the mathematics curriculum for the intermediate and senior grades
• mathematics pedagogy and classroom practice
• creating rich mathematics contexts to engage students
• organizing mathematics concepts to facilitate differentiated instruction
• use of technology in doing mathematics

Course Materials:

All course materials will be provided in class or made available online.

Assignments and Other Course Requirements:

1. Learning-in-depth (see Learning in Depth by Kieran Egan at: http://ierg.ca/LID) (30%) Due: Wednesday, October 19, 2016

   Select a mathematics teaching topic that you want to become an expert in; research the topic mathematically and pedagogically and write a report on your research; design a set of classroom activities on the theme (lesson plans and assessment tools).

2. Math Tasks (2 x 25% each) Due: Wednesday, February 15, 2017

   The importance of continuing to do mathematics as an educator is important. It is also important to engage in the types of mathematical tasks you are asking your students to engage in. In this assignment you will be completing mathematics tasks based upon the mathematics curriculum. There are three parts to your assignment: (1) identify a grade and an expectation from the Ontario curriculum that matches the question, (2) prepare a full handwritten solution that represents Level 3 solution that might be expected from a student, and (3) prepare a full handwritten solution that represents Level 4 on the Achievement chart. Each task should require no more than one page. An important aspect of the Ontario Achievement Chart is the need for students to be able to communicate about mathematics with one another. Consequently, this assignment is done in pairs.

3. Online Tasks (20%) Due: Wednesday, November 9, 2016 & Wednesday, February 22, 2017

   According to the Thames Valley District School Board, “Blended learning is defined as traditional face-to-face learning combined with learning in a digital environment.” The combination of the in class component with the online learning experience will model Blended learning, which is a major initiative in many school boards in Ontario. Throughout the course, you will work through a number of online mathematics activities, and complete course readings. You will be given prompts to respond to related to these online activities and readings. All responses will be posted in our course forum on OWL.
**Policy Statements:**

**Accessibility:** The University of Western Ontario is committed to recognizing the dignity and independence of all students and seeks to ensure that persons with disabilities have genuine, open and unhindered access to academic services. Please contact the course instructor if you require course materials in an alternative format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for information about requesting academic accommodation, or go to the following website: [http://www.edu.uwo.ca/programs/preservice-education/documents/policies/Accessibility_Western.pdf](http://www.edu.uwo.ca/programs/preservice-education/documents/policies/Accessibility_Western.pdf)

**ATTENDANCE:** The B.Ed. program is an intense and demanding programs of professional preparation. You are expected to demonstrate high levels of both academic and professional integrity. Such integrity is demonstrated in part by your commitment to and attendance at all classes, workshops, tutorials, and practicum activities. Read more about the Faculty’s attendance policy on-line: [http://www.edu.uwo.ca/programs/preservice-education/Attendance%20Policy%202016.pdf](http://www.edu.uwo.ca/programs/preservice-education/Attendance%20Policy%202016.pdf)

**EXCUSED ABSENCES:** If you are ill, require compassionate leave, or must miss classes for religious observance, your absence is excused; you will not be penalized but you are responsible for work missed.

**UNEXCUSED ABSENCES:** Any absence that is not a result of illness, bereavement, or religious observance is an unexcused absence. Three unexcused absences will result in you being referred to the Associate Dean and placed on academic probation. Any further unexcused absence will result in failure of the course and withdrawal from the program.

**Language Proficiency:** In accordance with regulations established by the Senate of the University, you must demonstrate the ability to write clearly and correctly. Work which lacks proficiency in the language of instruction is unacceptable for academic credit, and will either be failed or, at the discretion of the instructor, returned to you for revision to an acceptable level.

**Late Penalties:** Normally, the only acceptable reasons for late or missed assignments are illness (which you must report to the Teacher Education Office) or extreme compassionate circumstances. Unexcused late assignments will be penalized at a rate of 5% per day, and will not be accepted more than 7 days after the due date unless prior arrangements have been made with the instructor.

**Academic Offences:** Scholastic offences are taken very seriously in this professional Faculty. You are, after all, going to be a teacher. Read about what constitutes a Scholastic Offence at the following Web site: [http://www.edu.uwo.ca/programs/preservice-education/documents/policies/WEB_ScholasticDiscipline.pdf](http://www.edu.uwo.ca/programs/preservice-education/documents/policies/WEB_ScholasticDiscipline.pdf)

**Plagiarism:** Plagiarism means presenting someone else’s words or ideas as your own. The concept applies to all assignments, including lesson and unit plans, laboratory reports, diagrams, and computer projects. For further information, consult your instructors, the Associate Dean’s Office, and current style manuals. Advice about plagiarism and how to avoid it can also be found here: [http://www.edu.uwo.ca/programs/preservice-education/documents/policies/WEB_PlagiarismPolicy.pdf](http://www.edu.uwo.ca/programs/preservice-education/documents/policies/WEB_PlagiarismPolicy.pdf)

**Plagiarism-Checking:**

a. All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com ([http://www.turnitin.com](http://www.turnitin.com))
b. Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Use of Laptops & Notebooks in Class: As a courtesy to members of the class, please put your cell phone on ‘vibrate’ or turn it off during class. Lap tops and other electronic devices may be used in a professional manner to facilitate your activities in the course, but out of courtesy to colleagues and the instructor, please do not engage in personal networking and non-course communication during class time – save it for before or after class, or for the break.

SUPPORT SERVICES

A variety of support services are available at Western.

If you need advice or assistance, do not hesitate to get in touch with any of these services.

FINANCIAL ASSISTANCE: Registrarial Services (http://www.registrar.uwo.ca)

WRITING SUPPORT: Student Development Centre (http://www.sdc.uwo.ca/)

LEARNING SKILLS SUPPORT: Student Development Centre (http://www.sdc.uwo.ca/)

INTERNATIONAL STUDENTS: Student Development Centre (http://www.sdc.uwo.ca/)

ABORIGINAL STUDENTS: Student Development Centre (http://www.sdc.uwo.ca/)

STUDENTS with DISABILITIES: Student Development Centre (http://www.sdc.uwo.ca/)

SOCIAL & CULTURAL ISSUES: University Students’ Council (http://westernusc.ca/services/).

EMOTIONAL or MENTAL DISTRESS: Students who are in emotional or mental distress should refer to Mental Health @ Western http://www.uwo.ca/uwocom/mentalhealth/ for a complete list of options about how to obtain help.

B.Ed./Dip.Ed. PROGRAM ISSUES: zuber@uwo.ca, Teacher Education Office, room 1166

NEED HELP but not sure what to do: zuber@uwo.ca, Teacher Education Office, room 1166