Faculty of Education
The University of Western Ontario

EDUC 5180K Mathematics for Teachers (JI section)
Thursdays 4:30-7:30, Room # 2036

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Office Hours: By appointment.
Course Coordinator: Dr. George Gadadonis

Calendar Copy: Teaching and Learning Mathematics (JI). Strategies for the teaching and learning of mathematics in elementary school grades with particular attention to the Ontario Mathematics Curriculum, Grades 1-8. Methodologies and materials specific to selected topics are highlighted with emphasis on contemporary reform mathematics pedagogies, including the integration of computational thinking. (.75 credit)

Course Description:
Pedagogical content knowledge is teachers' understanding and ability to help a group of students understand specific subject matter using various instructional strategies, representations, and assessments while taking into consideration the contextual, cultural, and social characteristics of the learning environment. The goal of the course is to develop pedagogical content knowledge for teaching junior/intermediate mathematics. The junior/intermediate mathematics concepts will be explored and presented in the historical context of their development, in the context of connections across the topics, different strands and other subjects. Teaching approaches and instructional strategies will be developed based on conceptual understanding of the mathematics curriculum topics and the needs of junior/intermediate students.

Learning Outcomes:

The underlying purpose of the course is to extend the skills and knowledge for teaching mathematics in the junior/intermediate divisions. In order to learn mathematics in a way that will serve them well throughout their lives, students need classroom experiences that help them develop mathematical
understanding; learn important facts, skills, and procedures; develop the ability to apply the processes of mathematics; and acquire a positive attitude towards mathematics.” (The Ontario Curriculum Grades 1-8, Ministry of Education 2005, Mathematics) The course will acquaint pre-service teacher candidates with deep understanding of elementary mathematics, variety of instructional, assessment, and evaluation strategies that will help them create such classroom experiences for their future students.

**Course Content:**

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

- research and theory of mathematics teaching and learning
- the mathematics curriculum for the junior/intermediate grades
- key concepts of the mathematics for the junior/intermediate grades
- mathematics pedagogy and classroom practice
- creating rich mathematics contexts to engage students
- methods of differentiated instruction
- use of technology to enhance student learning
- resources for lesson/unit/strand planning
- computational thinking in junior/intermediate grades

**Course Materials:**

There are no required materials for this course. You will be provided with electronic/paper documents and links to various websites instead. You may wish to obtain some grade 5, 6, 7, 8 Mathematics textbooks. If you cannot obtain them from an elementary/middle school, many public libraries have copies of the textbooks. You usually cannot sign newer editions out, but you can use them in the building.

**Assignments and Other Course Requirements:**

- **Class/On-line Work/Participation (On-going)** .......................................................... 25%
- **2 Problem Sets/Math Tasks (2x10%)** ................................................................. 20%
- **Lesson Plan** ........................................................................................................ 20%
- **Unit Plan** ............................................................................................................. 25%
- **Technology-based Teaching Resource** ............................................................... 10%

All major assignments of this course will be explained and discussed in class but may also be found in Assignment Outlines and Rubrics in the Syllabus section in OWL.
Teacher Candidate Expectations:

Participants in the course are expected to work cooperatively by sharing experiences, knowledge, ideas and resources and by providing support to each other during in-class and online conferences. In addition, each participant is expected to:

- participate in all class lessons & tasks throughout the course
- complete all course assignments, meeting the criteria outlined, before or on the deadline
- complete all assignments independently unless otherwise indicated
- be excited about teaching and learning mathematics 😊

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/teacher-education/docs/policies/Accessibility_Western.pdf](http://www.edu.uwo.ca/teacher-education/docs/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 online at [http://www.edu.uwo.ca/teacher-education/docs/Attendance%20Policy%202016.pdf](http://www.edu.uwo.ca/teacher-education/docs/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 3% 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/teacher-education/docs/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/preservice/downloads/Plagiarism%20Policy.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.
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. Laptops 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 1131

NEED HELP but not sure what to do: zuber@uwo.ca, Teacher Education Office, room 1131