

Mathematics 504 – Cultural, Social, Technical (CST) Option Course Syllabus 2023-24

Instructor: Dr. Catherine James

Room: 2.3019

Email: cajames@wqsb.qc.ca

Website: <https://msjameswqsb.weebly.com>

Remediation: At lunch (to be determined)

Course Overview:

“History often helps by adding context. Mathematics, after all, is a cultural product. It is created by people in a particular time and place, and it is often affected by that context. Knowing more about this helps us understand how mathematics fits in with other human activities” (Berlinghoff and Gouvêa, 2014, p. 3).

From counting and accounting to agriculture, astronomy, art, and logic games, people have been developing and using mathematics for thousands of years. Mathematics and mathematical developments continue to help people make sense of the world around them. In this course, we will consider some areas of mathematics that are especially relevant in our world today, and we will also trace the historical development of these ideas.

Required Materials:

- Notebook
- Memory aid in sheet protector
- Pencils/erasers
- Pencil crayons or highlighters
- Ruler
- Calculator

Topics To Be Covered (tentative schedule):

Term 1	Term 2	Term 3
<p>Review (algebra, lines, and systems of equations)</p> <p>Optimization (equalities, inequalities, systems of inequalities, polygon of constraints, optimization of a situation)</p>	<p>Graph Theory (concept of a graph, networks, types of graphs, paths/circuits, chromatic number, optimal paths and trees, and critical path)</p> <p>Voting Procedures (plurality, majority, majority with elimination, Borda count, Condorcet method, proportional representation, and approval voting)</p>	<p>Population and Financial Math (interest rates/periods, discounting, compounding, modelling situations)</p> <p>Probability (experiment types, Venn diagrams, outcomes, operations on outcomes, probability of outcomes, conditional probability, odds, expectation fairness, weighted mean)</p> <p>Geometry (area and volume, equivalency, rules of equivalency, comparison of figures, cosine law)</p>

Assessment and Evaluation

In this course, you will be evaluated on two competencies:

- C1 - Solves a situational problem – be able to relate math concepts to real life scenarios
- C2 - Uses mathematical reasoning – be able to analyze a situation and draw conclusions using effective mathematical methods

Missing an Assessment

Assessments must be written on the scheduled day. If you know ahead of time that you will be away, alternative arrangements must be made before the assessment date. Missed assessments will be written at lunch.

Late Policy and Absences

All late arrivals will be recorded and detentions will be served with the office. *You* are responsible for catching up on class notes and completing any assessments which you missed due to absence. If you are aware of your absence in advance, please let me know.

Class Procedures

My foremost request is that we all respect one another in class. That means respecting each other individually, as well as respecting the thinking of others.

Additionally, your responsibilities including bringing all your materials to every class. ***Please do mathematics work in pencil*** – *mistakes are an important part of learning but it's important to erase mistakes on assessments so your work is clear.* You must hand in all assignments on time. While I am somewhat flexible about late assignments due to illness or other excused absences, I expect you to see me the day you return from illness to get your missed work. You need to be caught up at all times because it is easy to get behind and can be difficult to catch up. If you know you will be absent on a due date, please see me prior to that date to arrange an alternative arrangement.

Plagiarism

Many students, afraid that their incomplete work will be checked by me, copy another student's answers prior to class. *If you do this, it is cheating and I will give a grade of zero for the assignment and refer you to the administration for disciplinary action.*

Extra Help Options

A regular remediation schedule will be set during lunch hour in the next few weeks. These will be open forum: a place to complete homework, work on assignments, or ask questions while I am present. In addition, my website (www.msjameswqsb.weebly.com) has notes and helpful resources. If you feel the need to acquire outside math tutoring, LEARN is an excellent (and free) online option for all WQSB students.

I am looking forward to a great year with you!