MATH 205 Survival Guide - Intro

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1 MATH 205 at Concordia University

MATH 205 (Calculus II) is designed to filter out new students. It's needlessly and notoriously difficult and the bane of many students' existence.

It's also a prerequisite for a ton of courses across STEM programs. Additionally it may not be enough for some students to just pass the course. Computer Science majors for example need to score at least a C- (60%) while students looking to transfer into Computer Science might have to score a lot higher. So MATH 205 is a true bottleneck for those who haven't taken this course in CEGEP or equivalent. If you're reading this document I don't think I need to convince you.

It's generally recommended to take this course in a CEGEP institution (through continuing education) where the evaluations are easier. But for some (like international students) this may not be an option.

If you're stuck with taking it at Concordia then buckle up, it's going to be a wild ride! **There's a huge disconnect between the course content and the exams, so this guide's purpose is to bridge that gap and to help you get the best grade possible.**

Figure 1: MATH 205 students moments before their final.

2 Strategy

2.1 Review

The first step is to review Pre-Calculus and Calculus I content before this class even starts. There's no avoiding it, and it will help develop arithmetic muscle memory again if it's been a while since you've touched any math. This can take something like a month of practice, one hour per day, but it really depends on how rusty you are.

2.2 Past Exams

Concordia uses the same exam format every semester (even during COVID-19). The questions are very difficult but they're **always recycled from past evaluations**. Exams include no more than one or two original questions to shake things up, but if pre-calc and calc I are still fresh in your mind they won't give you much trouble.

So **the best strategy is to solve past exams**. I recommend solving 10 past midterms (note that midterms contain harder integrals than the finals do) and 7 past finals. Start with the most recent ones but avoid Summer exams because they're generally easier than Fall or Winter exams.

2.3 Patterns in Past Exams

While solving past evaluations, take note of any patterns that in your solutions. You will see them repeated for integrals, sequences, and series across exams. Write them down and memorize them. Build up this collection of patterns over time. Also keep track of and review your mistakes.

Finally learn and apply time saving tricks (for example the cover-up rule).

2.4 Solutions

Note that most exams don't have available solutions so you'll need to check your answers with online calculators or your peers.

Professors upload various solutions to Moodle every term, and not all of them end up on the public Internet. You can obtain these "exclusive" solutions through your classmates.

2.5 Gathering Points

It's not the end of the world if you bomb the midterm, but do try your best to do well in it. This is because the final consists of around 70% the same content as the midterm so you'll get the bulk of your points from those topics.

WebWork assignments are free points and good practice. Each assignment usually contains 8 easy to medium difficulty questions and 2 hard ones. Note that these assignments aren't very representative of your exams though.

3 MATH 205 Survival Guide Chapters

1. Best ENCS Approved Calculator
2. Resources & Online Calculators
3. Flashcards
4. Pre-Calculus & Calculus I Review
5. Calculus II Theory
6. Exam Question Variants
7. Tricky Integrals
8. Tricky Sequences
9. Tricky Series
10. Time Saving Tricks

You will find chapters 6, 7, and 10 most useful. Memorizing the patterns and techniques they contain will allow to quickly solve most exam questions without hesitation.