

## **MTH300 Final Project**

The goal of this semester long project is to introduce students to a new area of mathematics and develop a sense of mathematical inquiry. The project begins by selecting a topic that interests you as a student, there are a number of potential topics listed at the back of this document. Students will then be placed into groups; all efforts will be made to assign groups and topics in line with the reflections submitted. The group will develop a write up and presentation that could be presented to other undergraduate students, for instance at the Canadian Undergraduate Mathematics Conference.

The RUBRIC for each component can be found in a separate document.

### **Math Goals Reflection - Week 3**

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Write a 300-500 word reflection on a math topic that interests you. The reflection will be marked only on content and not on presentation or spelling and grammar. You should find some resources that helped you understand why the topic was interesting and detail these resources in the reflection.

### **Group Topic Resource Collection - Week 6**

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After the reflections have been assigned and marked, you will be placed into groups of 4 or 5 students. In these groups you will need to research the topic and create a glossary of terms, and compile some resources that discuss the topic. For each resource outline in one to two sentences how the resource could be useful in your final presentation.

## Group Topic Write Up - Week 10

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The write up will build on the resource collection, and will include a section on motivation and all relevant definitions. A theorem from the subject area will be assigned by the instructor to each group after the submission of the resource collection.

## Group Presentation - Week 12

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The final day of the course will have each group presenting their final project to the class. The presentation must be made on slides using LaTeX. In class, we will discuss effective presentation skill, and students should implement these techniques into their presentations. These presentations should be fun and captivating to the class. Please note the rubric goes across two pages.

## Potential Topics

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Below is a list of potential topics. Students can use these topics as a guide, and may choose topics outside of the list. The topics in the list are at an appropriate level for students and have a number of resources available.

- Graph Coloring
- Similar Triangles
- Geometric Constructions
- Cops and Robbers
- Bolzano-Weierstrauss Theorem
- Chinese Remainder Theorem
- Lewis Carol Determinants
- Vector Spaces
- RSA Code
- Rational and Irrational Numbers