MATH 444: MATHEMATICAL RESEARCH AND WRITING January 2019

SCHEDULE: Section 201, 9:30-11:00 TTh in MATH 102

INSTRUCTOR: Richard Anstee   Office: Math Annex 1114, phone 604-822-6105
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OFFICE HOURS: 11:00-12:00 TTh, but you can try anytime Tuesday, Wednesday and Thursday (I usually arrive by 9:30)

WEBSITE: http://www.math.ubc.ca/∼anstee/math444/math444.html

TEXT: None

OUTLINE: This course does not focus on any particular content. The students will be choosing content to present. I will initially be choosing some material from Combinatorics, Geometry, Number Theory, Graph Theory to discuss.

GRADING: 50% from assignments, in class presentation, and classroom participation and 50% project (no final exam)

COURSE PHILOSOPHY: This course can be described as a capstone course. It gives students a chance to use their mathematical abilities to explore a topic of their choosing. I recommend MAA Monthly or Mathematics Magazine as sources for interesting articles to explore. The group project provides a 'research' experience and as such has been designated as a course to fulfil the Arts degree (B.A.) research intensive course requirement.

IN CLASS PRESENTATIONS: 10% There will be about 2 in class presentations by students. This will be done with the aid of beamer (Latex based package)

ASSIGNMENTS: 35% of grade. There will be a variety of assignments including one due the second class.

CLASS PARTICIPATION: 5% of grade. Answering/asking questions in class.

PROJECT: 50% of grade. The project will be done in groups of 2 or 3 students. More details will be forthcoming as deadlines approach. Suggestions for finding suitable projects will be given but you are invited to consider jornals such as MAA Monthly or Mathematics Magazine as sources. The groups must be chosen by February 5 and an written outline of topic chosen submitted to me by February 12. A report of progress is to be given in class by March 5. The project itself is due March 28 (some flexibility is available if arranged with me in advance). Consultation with me is encouraged at **all** stages. I mark the written project on a variety of criteria including the Mathematical clarity of the final write up and any insights provided.

MISSED WORK: From time to time students may be unable to finish assignments. In the case of the Final Project, the students should contact the Faculty of Science office and the missed project will be handled in a formal way. In the case of assignments, please contact me before class time on the due date, and given your reasons for the missed work. Assuming the reasons are legitimate, I will either grant an extension of a couple of days or note that you will be missing the assignment. In such circumstances your grade is computed out of a smaller number than 100 and then scaled appropriately to get a grade out of 100. For example, if an assignment counts 6% and a student informs me in advance of legitimate reasons for missing the assignment, the student would have a grade computed out of 94 and then this would be scaled to a grade out of 100 by multiplying by 100/94. Without advance notice (to me by email or phone message to Math Office etc) the default will be a grade of 0 in the missed work but you may contact me. A student must finish a significant amount of term work in order to pass. Three missed assignments will probably be the limit.