

MATH 4060 Course Outline W19

General Information

Course Title: Topics in Mathematics: Number Theory

Course Description: This course will cover introductory topics in number theory including Diophantine Approximation, continued fractions, divisibility, modular arithmetic, the Chinese remainder theorem, Fermat's little theorem and Euler's theorem. Applications of Number Theory to Cryptography will also be explored.

Credit Weight: 0.5

Academic Department (or campus): Mathematics & Statistics

Campus: University of Guelph

Semester Offering: Winter 2019

Class Schedule and Location: MWF 11:30-12:30 in MacKinnon 310

Prerequisites: 1.0 Credits in Mathematics including one course in Calculus. The stated prerequisite of MATH 3200 is not needed.

Instructor Information

Instructor Name: Rajesh Pereira

Instructor Email: pereirar@uoguelph.ca

Office location and office hours: MacN 519, Office Hrs TBA

Course Content

Specific Learning Outcomes: Students in this course will learn the basic ideas and tools of number theory. Students will learn how to construct proofs and write mathematical arguments.

Lecture Content: See course description.

Course Assignments and Tests:

There will be regular assignments and a project. The project will be an exposition on a number theoretical topic and can cover either be mathematical, historical or biographical in nature.

Course Resources

Text: Elementary Number Theory by Gareth A. Jones and Mary T. Jones. 1998

Course Policies

Grading Policies: Assignments: 70%, Project 30%

Course Policy on Group Work: While you may consult with one another or any reference about the general ideas on assignments or the project, any written work must be your own. It is not permitted to ask someone for step by step guidance on assignment problem nor to copy from the work of another student or any other source.

Standard Statements

The following are standard statements for inclusion on all course outlines (adapted with permission from the College of Arts). Some departments or colleges may also elect to post this information on a common website and link to such sites in the course outline. However, it is strongly recommended that statements on academic misconduct and links to the academic misconduct section of the academic calendars are included on all course outlines.

E-mail Communication

As per university regulations, all students are required to check their <mail.uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. [See the undergraduate calendar for information on regulations and procedures for Academic Consideration.](#)

Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; in the Winter 2019 semester this day is March 8th 2019. The regulations and procedures for [Dropping Courses](#) are available in the Undergraduate Calendar.

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: www.uoguelph.ca/sas

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

[The Academic Misconduct Policy is detailed in the Undergraduate Calendar.](#)

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be

recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The [Academic Calendars](#) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.