MATH 464/764: Algebraic Geometry
Winter 2020
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This is an introduction to classical Algebraic Geometry. We build up a dictionary between commutative rings and algebraic varieties starting with the Nullstellensatz. The main topics covered include: affine, projective, and quasi-projective varieties, the Veronese and Segre embeddings, Grassmannians, Hilbert functions, smoothness and tangent spaces, Bertini's Theorem, line bundles, and Riemann–Roch.

Course Website: Basic information will be posted on Learn.

Office Hours: Wednesdays 12:30–2:30 in MC 5433

Homework: All assignments will be posted on Crowdmark.

Textbook: *An Invitation to Algebraic Geometry* by Smith, Kahanpää, Kekäläinen, and Traves. The textbook is not required.

Marking Scheme:
- Homework: 15% on Crowdmark due Fridays 8am
- Midterm on February 10 in class, 25%
- Final date TBA, 60%

The lowest homework score will be dropped.

Please Note: Missed exams will receive a score of 0 unless suitable documentation is provided. There will not be a make-up midterm. The weight of a missed midterm (with documentation) will be transferred to the final exam.

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility.

Grievances: A student who believes that a decision affecting some aspect of their university life has been unfair or unreasonable may have grounds for initiating a grievance. Students who decide to file a grievance should refer to University of Waterloo Policy 70 (Student Petitions and Grievances). When in doubt please be certain to contact the department?s administrative assistant who will provide further assistance.

Discipline: A student is expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for their actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about rules for group work/collaboration should seek guidance from the course professor, academic advisor, or the Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under the University of Waterloo Policy 71 (Student Discipline). For typical penalties check the Guidelines for the Assessment of Penalties.

Appeals: A decision made or penalty imposed under Policy 70, Student Petitions and Grievances (other than a petition) or Policy 71, Student Discipline may be appealed if there is a ground. A student who believes they has a ground for an appeal should refer to Policy 72 (Student Appeals).

Note for students with disabilities: The AccessAbility Services (AS) Office, located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AS Office at the beginning of each academic term.