Math 342 - Term 1, Fall 2021
Algebra and Coding Theory

Instructor: Kalle Karu (karu@math.ubc.ca).

Lectures: TuTh 9:30-11, LSK 201, in person.

Textbook: *A First Course in Coding Theory* by R. Hill.

Web site: The Canvas course page has more detailed information.

Course description. Error-correcting codes via abstract and linear algebra. Emphasis on proofs and computation. Finite fields, Hamming distance and error-correction, upper and lower bounds on the size of a code, linear codes, groups and cosets, encoding and decoding schemes.

Homework. We will have a homework roughly every week. Homeworks are posted on Canvas and you have to upload your solutions also to Canvas.

Exams. We will have two midterm exams, on Thursdays, Oct. 14 and Nov. 18, during regular class hours. The final will be a $2\frac{1}{2}$-hour exam scheduled by the university.

Final Grade. Your final grade will be based on your performance on homework (15%), midterms (35%) and final exam (50%).

University policies. UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available on the UBC Senate website.