Math 329: Introduction to Abstract Algebra

Winter Term 1, 2025-26

INSTRUCTOR:	Nahid Walji	**CONTACT:**	nwalji@math.ubc.ca
CLASS SCHEDULE:	Tuesday/Thursday, 2-3:30pm, Buchanan B210	**CREDITS:**	3
OFFICE HOURS:	See course webpage		

LAND ACKNOWLEDGEMENT:

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the *xʷməθkʷəy̓əm* (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next on this site. We work with gratitude on it.

COURSE DESCRIPTION:

Ideas and methods of group theory. This includes: groups, subgroups, centre, generators, cyclic groups, cosets, quotient groups, index, conjugation, normal subgroups, simple groups, projection, homomorphisms, isomorphism theorems, dihedral groups, and permutation groups.

PREREQUISITES:

Either (a) one of MATH 152, MATH 221, and one of MATH 220, MATH 226, CPSC 121, or (b) MATH 223.

TEXTBOOK:

None required.

For additional reading, we recommend:

- *Abstract Algebra,* by David S. Dummit and Richard M. Foote
- *Abstract Algebra: An Introduction,* by Thomas Hungerford
- *An Introduction to the Theory of Groups,* by Rotman

GRADING:

- Homework 15%
- Participation (includes stretch-homework) 5%
- Midterm 25%
- Final 55%

ASSESSMENTS OF LEARNING:

Students are assessed through their submitted work and participation. A student must finish a significant amount of term work in order to pass the course. Work will be graded on clarity as well as on mathematical correctness.

Under no circumstances will there be a possibility for a student to provide additional work in order to adjust their grade.

HOMEWORK:

- Homework will typically be assigned once a week.
- It will be due on Fridays by 11:59pm, and posted the week before.
- Late homework is not accepted.
- The lowest two homework scores are dropped.
- If you miss a large number of homework assignments for valid reasons, then part of the weight of the homework will be transferred to the exam.

You are allowed to use LLMs (such as ChatGPT) for help when you are working on your homeworks, provided they are declared, but you must write up solutions in your own words. Please keep in mind that LLMs are not guaranteed to be factually accurate, and that the use of AI tools is not permitted during the midterm or final.

Collaboration on the homework sets is encouraged, but please note that you cannot write the solutions together. Copying solutions from another student, from the web, or from any other source, and turning them in as your own is a violation of the Academic Code.

STRETCH HOMEWORK:

- Run by Adam Martens.
- These will be given on the same schedule as the regular homework.
- They will be marked for participation only.
- Further details will be provided on the course webpage.

PRESENTATION OF HOMEWORK:

- Homework must be typeset and submitted as a PDF through Canvas.
- We recommend that you use LaTeX to prepare your homework
- You are encouraged to use Overleaf (which can be used for free).
- Handwritten or messy homework will not be accepted.

MIDTERM:

- This will take place on **Tuesday October 14th**, in class.
- There is no “make up” midterm. If you miss the midterm due to valid reasons, the weight of the midterm is passed onto the final.

FINAL EXAM:

- It will cover all topics from class, unless specified otherwise.
- See our Canvas site for further details, closer to the December exam period.

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.

GENERAL SYLLABUS INFORMATION:

The Mathematics Department has standard syllabus information. This includes standardised policies for:

- Academic concessions (ie missed homework + midterm)
- Academic integrity (ie cheating)
- Registration issues (your instructors have no control over anything to do with registration)
- Misc. student resources

You can find that information here.