

# Robin Dueck Degen

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## Education

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### University of Saskatchewan

2021–2027

*B.Sc. Honours Mathematics, expected Spring 2027*

## Experience

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University of Saskatchewan

### Course Marker — MATH 361 / Group Theory

Sep 2026–Present

Grade bi-weekly proof-based assignments for ~30 students

### Undergraduate Research Experience

May 2026–Aug 2026

Studied twisting theory for Lie algebras and coalgebras under the supervision of Dr. Curtis Wendlandt.

Topics covered:

- Matrix Lie groups, the matrix exponential, and Lie algebras (Hall)
- Representation Theory of Lie Algebras (Hall; Erdmann–Wildon)
- Lie bialgebras: Manin triples, coboundary Lie bialgebras, classical Yang–Baxter equation (Chari–Pressley)
- Deformations of cocommutators; twists of Lie bialgebras (Chari–Pressley; Majid, §8.1)
- Background: modules, duals, tensor and exterior products, graded algebras (Dummit–Foote)

## Projects

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### Honours Thesis — Twisting Theory of Lie Algebras

Sep 2026–Present

*Supervisor: Dr. Curtis Wendlandt*

Covers the twisting theory of Lie algebras with some connections to basic (co)homology, and representation theory. Based on work I did during my first summer research.

Project page →

## Selected Coursework

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### Completed

- Group Theory — MATH 361
- Real Analysis I and II — MATH 371 and 373
- Complex Analysis — MATH 379
- Galois Theory — MATH 460
- Computational Logic and Program Reasoning — CMPT 263
- Intermediate Data Structures and Algorithms — CMPT 280

### In Progress

- Hopf Algebras — MATH 460
- Mathematical Modeling I — MATH 336
- Partial Differential Equations I — MATH 339

### Planned

- Harmonic Analysis with Applications to Quantum Theory — MATH 480
- Mechanics II — PHYS 323

## Skills

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### Coding Languages / Software

- Python: NumPy
- Git
- Latex