Ron Joyce

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Highlight of Qualifications

- Enrolled in level 3 of McMaster University's Chemical Engineering Co-op Program, **eligible for 4-, 8-, 12- and 16-month co-op** placements starting May 2027
- High level of wet-lab and research experience both in industry and coursework
- Demonstrated experience in modelling software (MATLAB/Simulink) in extracurricular activities and projects
- Proven teamwork and communication skills shown in laboratory settings and group projects

Education

Bachelor of Engineering Co-op (BEng) | *Chemical Engineering* *2024 – 2029*

McMaster University

Relevant courses:

- Introduction to Reactor Design: CSTR, batch, and plug flow reactors, configurations
- Chemical Process Design & Simulation: Heat exchangers, separators, pressure handing
- Unit Operations: Physical and chemical sensors, sampling and analysis, PDF, P&ID
- Statistical Methods: Linear and non-linear regression, multi-response estimation

Work Experience

DNA Research Assistant | *Department of Biology - McMaster University* *May - Aug 2026*

- Conducted DNA extraction and PCR amplification on over 150 Arabidopsis thaliana samples to study gene expression under drought stress
- Utilized sterile technique and microbial culturing to isolate and identify 12 novel rhizobacteria strains with potential plant growth-promoting properties
- Analyzed chlorophyll fluorescence data using Python and Excel, improving accuracy of photosynthetic efficiency measurements

Barista | *Starbucks - North York, ON* *May – Aug 2025*

- Managed high volumes of customer orders during peak hours, demonstrating time management, attention to detail, and communication skills
- Worked closely with coworkers to maintain flow and efficiency, highlighting teamwork ability in fast-paced settings
- Resolved customer complaints and difficult situations, showing professionalism and problem-solving skills in real-time situations

Projects

PID Control System | *Process Control Course Project* *Mar – Apr 2028*

- Led a team of 3 students in designing and implementing a PID (Proportional-Integral-Derivative) control system for a simulated chemical reactor, showing leadership skills
- Developed control algorithms using MATLAB and Simulink to optimize the reactor's temperature and pressure, ensuring stable and efficient operation
- Conducted system identification and tuning of PID parameters to achieve desired performance, reducing process variability by 20%

Heat Exchanger | *Process Design & Simulation Course Project* *Mar – Apr 2027*

- Designed a shell-and-tube heat exchanger for use in the petrochemical industry
- Conducted experimental trials to evaluate heat transfer efficiency and pressure drop, using MATLAB for data analysis and simulation
- Collaborated with team members to troubleshoot issues and ensure project deadlines were met, demonstrating organizational skills and consistency in time management

Extracurricular Activities

Propulsion Team Member | *McMaster University Chem-E-Car Team* *Sept 2025 – Apr 2026*

- Assisted in the design of a chemical reaction for a hydrogen fuel cell to power a small car
- Tested and documented reactions between aluminum and water, adhering to safe practices
- Developed a simple process to assemble the chemical reaction, ensuring quick and safe use
- Collaborated with interdisciplinary teams to achieve 2nd place at international competition, demonstrating adaptability and teamwork skills

Certifications

Standard First Aid with CPR-C - *YMCA of Greater Toronto* *Jun 2026*

BSL-1 Biosafety Training Module (Online) - *McMaster University* *Apr 2026*

WHMIS Training Certificate (Online) - *Canadian Safety Training Centre* *Sept 2025*

Skills

Python	C/C++	MATLAB
Simulink	Excel	Microsoft Office
Google Workspace	Autodesk Inventor	G-class Driver's License