

## Summer Job Opportunity for MREN 403 Mechatronics & Robotics Engineering Course Development

On behalf of the Mechatronics & Robotics Engineering program, the Faculty of Engineering & Applied Science at Queen's University will be hiring one undergraduate or graduate student this summer to support the development and testing of capstone project(s) for the new course **MREN 403 Mechatronics and Robotics Design IV**, which will be offered for the first time in Fall 2024.

In this course, students culminate their learning of mechatronics and robotics, and engineering design, through a team-based capstone design project focused on solving a real-world, industry-level technical challenge, which includes a detailed design phase, as well as robust building and iterative design testing. The course is conducted over two terms. In addition to the design, build and testing of a mechatronic or robotic system, each team is required to demonstrate communication, teamwork, and management skills at a professional level by preparing a formal design proposal, which includes a project management plan, providing regular progress reports, and submitting a final design report, together with a formal presentation on the project and its results. Elements of professionalism and ethics are addressed.

Successful candidate will be:

- An undergraduate student who has successfully completed their 3<sup>rd</sup> year, or
- A graduate student, in the MME or ECE program or related engineering program, or
- A recent graduate from an MME, ECE, or related engineering program

Successful candidate will have:

- A solid understanding of the core concepts in engineering design and problem solving, including professional practice, as well as systems design methodology fundamentals;
- A firm grasp of the basics of control and systems engineering, electronic circuits, DC motors and servomotors, as well as sensors frequently used in robotics applications;
- Proficient in computer aided design and hands-on rapid prototyping and assembly OR in computer programming in the C/C++ and Python languages (ideally proficient in both);
- Familiarity with Arduino (and/or other) microcontrollers and Raspberry Pi computers;
- Can work well both independently and collaboratively with others;
- Demonstrated initiative and creativity in engineering (or other) work; and
- Has a keen interest in robotics and mechatronics engineering!

If you are interested, please submit a cover letter, unofficial transcript, and your resume by **Friday April 19 at 4:00 pm** to Jenny Cruz ([j.cruz@queensu.ca](mailto:j.cruz@queensu.ca)). For undergraduate students, the position will be for 16 weeks of full-time work (normally May to August 2024) at \$17/hour (plus 4% in lieu of vacation). For graduate students, the position will be for 16 weeks, part-time, with a maximum of 10 hours per week of work time. Graduate students must have permission of their supervisor to take on this position. The expectation is bulk of work will be done on-campus.

You must be eligible to work in Canada. For more information on the MRE program, please visit the website:

<https://engineering.queensu.ca/programs/undergraduate/mre/> . If you have any questions, please feel free to contact Prof. Robertson ([m.robertson@queensu.ca](mailto:m.robertson@queensu.ca)) who will be the supervisor. We appreciate all applications, but only those selected for an interview will be contacted.