

Introduction - invitation:

Greetings,

We would like to invite you to participate in our research study comparing the Swiss and Canadian engineering education systems, investigating how to improve materials science practical sessions in undergraduate mechanical engineering programs. This form includes information about the study, your participation in it, and how to contact the research team with any questions you may have. Before you decide to participate, it is important that you understand why this research is being conducted and the potential benefits and risks involved in participation. Please note that your participation is completely voluntary.

You were selected as a potential participant in this study because you are a student in the MSE234 course this semester. We would like to ask for your participation in a focus group interview on your experience in your MSE234 practical sessions and how they contribute to your learning in the course and to your preparation for your engineering career. The focus groups will take place in the Autumn 2025 semester and will be conducted in-person, the specific dates and times are **FOCUS GROUP DATES AND TIMES**.

With your permission, the focus groups will be audio-recorded to ensure an accurate record of the discussion. Only the researchers in this project will have access to these recordings. You will be referred to by a pseudonym in the data analysis and data publications.

Please take the time to read this information fully. All data collected in this project is subject to strict data protection rules. If you have any questions or require further information, please do not hesitate to contact the Principal Investigator, Dr. Siara Isaac (siara.isaac@epfl.ch) or the doctoral researcher, Mackinley Love (mackinley.love@ucalgary.ca).

INFORMATION SHEET FOR RESEARCH PARTICIPANTS

A copy of this information sheet should be given to you

Name of the project: Comparing and Contrasting the Swiss and Canadian Engineering Education Systems in Materials Science

This research project has been approved by the EPFL Human Research Ethics Committee (HREC No: HREC0000641 / 22.08.2024).

The research project is conducted by: Dr. Siara Isaac

Institution / Professional address: EPFL AVP-E CAPE

1. General information about the project

This project compares practical sessions in the materials science courses of the mechanical engineering curricula at the EPFL in Lausanne, Switzerland and at the University of Calgary in Alberta, Canada, seeking to identify how national regulation of engineering education in Canada and the lack thereof in Switzerland shapes engineering education in both countries. Practical sessions are a key component of many engineering programs, but there are many calls for improving how students are taught and prepared for their engineering careers. Engineering is a global profession, and the comparison of international institutions provides a great opportunity to develop improvements and benefit engineering practice.

As an international project, data on the EPFL MSE234 practical sessions will be compared to data generated by students and instructors in the ENME421 and ENME521 courses at the University of Calgary. This international project will collect data from September 2025 to April 2026 and analyze this data in the summer of 2026, culminating in a research journal article recommending improvements for practical sessions at both the EPFL and University of Calgary. It is anticipated that approximately 20-50 students and 2-5 practical session facilitators at each institution will participate.

This study is funded by the University of Calgary Taylor Institute for Teaching and Learning.

2. Objectives of the research project (Why this research project?)

The goal of this project is to investigate the effect of national regulation on practical sessions for materials science courses in university mechanical engineering education. Engineering education in Canada is strongly shaped by Engineers Canada, which accredits university programs and regulates the profession. Switzerland does not have such a regulator, but produces a similar quality of engineering graduate, inviting comparison between the two countries. Findings will be used to develop a framework of recommendations for improving materials science practical sessions in both countries.

3. Selection of potential participants (Who has been invited to participate in this study?)

Participation in the focus group interviews is open to all students enrolled in the MSE234 course at the EPFL in the Autumn 2025 semester. We are carrying out this project in accordance with the requirements of Swiss and Canadian law.

4. Procedure for participants (What do I have to do / what is expected of me if I decide to participate?)

The focus group will ask a series of questions about your experience in your MSE234 practical sessions and how these sessions contribute to your learning in the course, to your success in your degree program, and ultimately to your future engineering careers. The list of focus group questions will be provided to you in advance, and the session will take 30-60 minutes, with a 5-minute break. Due to the flexible nature of focus group interviews, it is possible that we will not get to every question, and it is also anticipated that follow-up questions not included in the question document will be asked on specific responses.

5. Benefits for participants (What are the possible benefits of my participation?)

Coffee, tea, and light snacks will be offered during the focus group session; otherwise, there are no direct benefits to your participation in this project. It is anticipated that the results of this project will lead to improvements in materials science practical sessions at both the EPFL in Switzerland and the University of Calgary in Canada. As such, future MSE234 students will benefit from an improved educational model and delivery of their practical sessions.

6. Risks (What are the possible risks and constraints of my participation?)

Your personal information will be gathered in order to support your decision to withdraw if you decide to do so (see Section 10 for more information on withdrawal), posing a risk of exposure of your participation in the study. To mitigate this risk, during transcription all personally identifying information will be removed from your response and replaced with generic identifiers to be used in data analysis and publication (see Section 9 for more information on protection of personal data). If your response at any point identifies other individuals, this information will be masked during transcription. You will also be provided a copy of the focus group interview transcript and will be free to request the removal of any and all of your responses that you may not be comfortable with.

An additional risk is that the time taken for the focus group interview will negatively impact your success in your academic studies. To mitigate this risk, the focus group interview will not exceed 60 minutes in duration. Your participation is also completely voluntary, and you are free to not participate for any reason.

Otherwise, it is not anticipated that you will encounter any risks that exceed those you encounter in your everyday life.

7. Participants' rights (What are my rights?)

Your participation is entirely voluntary. You are free to accept or refuse to participate in the project. If you choose not to participate, or if you choose to change your mind during the course of the project, you will not have to justify your decision. This will not put you at a disadvantage in any way. You can ask any questions about the study at any time. Please contact the person listed at the end of this information sheet.

8. Information about the results of the research (Will I be informed about the results of the research?)

You will not normally be informed of the results of research projects using your personal data, unless you specifically request this from the principal investigator at the following email: siara.isaac@epfl.ch.

9. Protection of personal data (How is my data protected?)

The focus group interviews will be audio recorded and later transcribed. The recordings will be stored in a dedicated folder on an EPFL secure file server. The data will only be accessible to the research team using an EPFL username and password. All data will be deleted after the completion of the project, within 12 months after data collection. When transcribing the recordings, pseudonyms will be used for your name and for the names of any other people you mention; these pseudonyms will also be used in all reports on the research. Any details of the interview that could be used to potentially identify you or others will be masked during the transcription process.

In the case of publication, pseudonyms will continue to be used. It will not be possible for a third party to identify you based on your responses.

10. Withdrawal from the project (What if I want to stop participating? What will be the consequences?)

Your participation is entirely voluntary, and you can withdraw from the study at any time if you wish until December 5th, 2025, when all data will be fully anonymized and withdrawal will become impossible. If you choose not to participate, or if you choose to participate and withdraw during the course of the study, you do not have to explain your decision. If you withdraw, we will delete all your personal data and we will not collect any further personal data about you.

11. Compensation for participants (Will I be reimbursed for my participation?)

If you participate in this project, you will not be remunerated for it.

12. Contact person(s)

If you have any doubts, concerns or emergencies during or after the study, you can contact one of the following people at any time:

Project manager: Dr. Siara Isaac, +41 21 693 52 89, siara.isaac@epfl.ch
RLC D1 740, Station 20, 1015 Lausanne, Switzerland

Doctoral researcher: Mackinley Love, +1 (403) 805-4709, mackinley.love@ucalgary.ca
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