



CONSENT FORM FOR RESEARCH PARTICIPATION

Students in CHBE 220 are being invited to participate in an optional research study with the following details:

Study Title: Using concept maps to assess engineering design knowledge.

Principal Investigator:

Jonathan Verrett, Instructor, Department of Chemical Engineering, jonathan.verrett@ubc.ca, 604-827-5685

Student Researcher:

Matheus Cassol, Undergraduate Student, Department of Chemical Engineering, m.cassol@alumni.ubc.ca, 604-822-3238

Purpose:

Design is one of the Graduate Attributes by the Canadian Engineering Accreditation Board (CEAB), and therefore, it is important to have a practical and verified assessment method. The goal of this study is to create a method that bridges the gap in literature between qualitative and quantitative methods of assessing engineering design knowledge.

Study Procedures:

As part of a regular classroom assignment you will work through design problems twice, once at the beginning and once at the end of the semester. You will do this using the software CmapTools, which will record the order of your actions within the software with the intent of capturing your thought process. If you wish to participate in the study, your Cmap and the log file of your actions will be analyzed using grouping algorithms and statistical models. This data will be used to find patterns among students, which can lead to more relatable and precise teaching. The average time for participation in this study is 20 minutes for each design problem.

Confidentiality:

The information that you give in the study will be handled strictly confidentially. This information will be stored on password protected and encrypted computers. Your information will be encrypted and no one other than Jonathan Verrett and Matheus Cassol will have access to it until it is published. Your name will not be used in any report.



Future use of Open Access Data

Depending on where data from this study is published, the data set may be made publicly available for other researchers to analyze. This data will be publicly available, but will be de-identified. Only the Cmap you produce and any subsequent analysis of only the Cmap would be in this data set. Once the data is made public you will no longer be able to withdraw your data from the data set.

Study Benefits:

We hypothesize that students can further develop their design skills by being exposed to design exercises like the ones in this study. Seeing a visual representation of the data collected in this study might give you insight into how you approach a design problem, showing areas where most of your time is spent on. This will also allow you to see different approach methods, which you can use to build upon becoming a better designer. On another hand, the data will pinpoint common mistakes and general areas of growth, which can be used by the instructor to provide more precise feedback.

Who can you contact if you have complaints or concerns about the study:

If you have any complaints or concerns about your rights as a research participant and/or your experiences while participating in the study, contact the Research Participant Complaint Line in UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail to RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Consent:

Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time without affecting your class standing in any manner. If you choose to withdraw, your information (Cmap and log file) will not be included in the study. You may withdraw your participation at any time before the data is published by contacting the co-investigator Matheus Cassol. Your withdrawal will remain confidential and neither the instructor nor the TA's will be informed of it until course grades are posted.

By signing below, you consent that the information you provide can be used in the research study.

Name (print): _____

Signature: _____

Date: _____