Default Question Block

You are being asked to be a volunteer in a research study. The purpose of this survey is to better understand your perceptions about data skills, so that your instructional team can determine how this class affects this measure.

This beginning course survey will take you approximately 20 minutes to complete. After the next PSS session, all students enrolled in the course will be sent a similar survey which should also take about 20 minutes to complete. To protect your confidentiality, no data from either survey will be examined by your instructional team. Your instructional team will only determine who has completed the surveys when calculating final grades (see next paragraph.) Prior to data being analyzed, all identifying information will be permanently deleted. Analysis of the anonymized data will be performed by other members of the BME department.

If you complete both the beginning and end of semester surveys, you will receive a small amount of extra credit points towards your final grade. This compensation is available whether or not you consent to participate in the study. As an alternative, you may submit a written reflection as directed by your instructor for the same amount of credit.

The risks involved are no greater than those involved in typical daily activities or your general participation in the class. We will comply with any applicable laws and regulations regarding confidentiality. To make sure that this research is being carried out in the proper way, the Georgia Institute of Technology IRB may

review study records. The Office of Human Research Protections may also look at study records. If you have any questions about the study, you may contact Dr. Laura Christian, the PI at telephone 404-894-2660 or laura.christian@gatech.edu. If you have any questions about your rights as a research subject, you may contact irb@gatech.edu.

Thank you for participating in this study.
Dr. Christian

Do you consent to participate in this study?

(Please note: if you decline consent, you will still be taken to the pre-course survey, but may choose not to complete it. As noted above, if you complete both the beginning and end-of-PSS surveys, you will have a small number of points added to your final grade, whether or not you consent to your data being used in the research study. Please do not consent to participate if you are physically in the European Union.)

- ○ Yes
- ○ No

What is your name as it appears on Canvas?

Please rate your confidence in your ability to apply the following data skills, with guidance, to biomedical engineering courses or work.

	No confidenc
Recognize and describe biases or assumptions within the data or analyses used in published research	○
Explain the underlying mathematics and mathematical processes of common machine learning algorithms (e.g., clustering, neural networks)	○

	No confidenc
Describe the basic concepts and usefulness of common data analysis algorithms (e.g., basic statistics, clustering, neural networks)	○
Write, troubleshoot, and run code in a software language that you are familiar with to perform data analysis tasks	○
Justify engineering design decisions by using results from statistical and machine learning analyses	○
Apply statistical analysis and machine learning tools to a data set	○
Explain the limitations of the results of an analysis you performed	○
Present conclusions and limitations from data analysis to others	○
Find, run, and troubleshoot code that you did not write, in a software language that you are familiar with, to perform data analysis tasks	○
Use a spreadsheet (e.g., Excel, Google Sheets) to perform data management and analysis	○

	No confidenc
Articulate the limits of what a data set can tell you	○
Identify an appropriate analysis to answer a specific question from a given data set	○
Identify specific questions that can be answered using a given data set	○
Differentiate between statistical and machine learning approaches to data analysis	○
Evaluate the credibility of published research that uses statistical analysis and machine learning tools	○

For the same data skills, we are also curious about your perception of their **general applicability to biomedical engineering work** and your **personal interest in jobs** that make use of these skills.

	Applic	
	None	A litt
Explain the underlying mathematics and mathematical processes of common machine learning algorithms (e.g., clustering, neural networks)	○	○
Present conclusions and limitations from data analysis to others	○	○
Explain the limitations of the results of an analysis you performed	○	○
Write, troubleshoot, and run code in a software language that you are familiar with to perform data analysis tasks	○	○
Recognize and describe biases or assumptions within the data or analyses used in published research	○	○
Use a spreadsheet (e.g., Excel, Google Sheets) to perform data management and analysis	○	○
Describe the basic concepts and usefulness of common data analysis algorithms (e.g., basic statistics, clustering, neural networks)	○	○
Find, run, and troubleshoot code that you did not write, in a software language that you are familiar with, to perform data analysis tasks	○	○
	None	A litt
Articulate the limits of what a data set can tell you	○	○
Identify an appropriate analysis to answer a specific question from a given data set	○	○
Apply statistical analysis and machine learning tools to a data set	○	○
Justify engineering design decisions by using results from statistical and machine learning analyses	○	○
Identify specific questions that can be answered using a given data set	○	○
Differentiate between statistical and machine learning approaches to data analysis	○	○
Explain how probabilities and data can be used to create mathematical models of real world phenomena	○	○

The last page of this survey asks a few demographic questions to help us understand our results.

Please select any BMED courses that you have previously completed or are currently enrolled in

	Previously Completed	Currently Enrolled
BMED 1000	☐	☐
BMED 2110	☐	☐
BMED 2250	☐	☐
BMED 2310	☐	☐
BMED 2400 (or equivalent)	☐	☐
BMED 3100	☐	☐
BMED 3110	☐	☐
BMED 3310	☐	☐
BMED 3410	☐	☐
BMED 3520	☐	☐
BMED 3600	☐	☐
BMED 3610	☐	☐
BMED 4000	☐	☐
BMED 4602/4723	☐	☐

What year did you graduate from high school?

- ○ 2023
- ○ 2022
- ○ 2021
- ○ 2020
- ○ 2019
- ○ 2018 or before

What descriptor(s) most closely represents your gender identity?

- [ ] Cis-
- [ ] Trans-
- [ ] Female
- [ ] Male
- [ ] Non-Binary
- [ ] Another identity not listed

With which racial and ethnic groups do you identify? (Mark all that apply)

- [ ] American Indian or Alaska Native
- [ ] Hispanic, Latino, or Spanish origin
- [ ] White
- [ ] Asian
- [ ] Middle Eastern or North African
- [ ] Black or African American
- [ ] Native Hawaiian or Other Pacific Islander
- [ ] _____ Another race or ethnicity not listed above

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