

Biotech_students_POST_Spring 2021

Start of Block: consent

Q1 Biotechnology Student Post-Course Survey

What is this survey about?

The purpose of this survey is to learn about your experiences with the SLCC Biotech program. This survey is part of an evaluation of a National Science Foundation (NSF) grant.

What will be done with my responses?

Your responses will be kept confidential. Your responses will be averaged with the results from other students and will be used to improve biotechnology education.

Do I have to complete this survey?

You can refuse to participate or withdraw from this evaluation at any time. If you do not want to take part in the study, just exit out of the survey now.

The survey will take about 10 minutes. The SLCC Biotech program will email you a \$5 Amazon gift code as a token of appreciation for your participation. (The SLCC Biotech program will not have access to your responses on the survey. They will only have access to the email address you provide, which will be kept separate from your responses.)

What if I have questions?

If you have questions, complaints or concerns about this study, you can contact Dr. Amy Auletto, Research and Evaluation Associate at the Utah Education Policy Center, at amy.auletto@utah.edu. If you feel you have been harmed as a result of participation, please call Dr. Auletto.

Institutional Review Board: Contact the Institutional Review Board (IRB) if you have questions regarding your rights as a research participant. Also, contact the IRB if you have questions, complaints or concerns which you do not feel you can discuss with the investigator. The University of Utah IRB may be reached by phone at (801) 581-3655 or by e-mail at irb@hsc.utah.edu. The Salt Lake Community College IRB may be reached at irb@slcc.edu.

Research Participant Advocate: You may also contact the Research Participant Advocate (RPA) by phone at (801) 581-3803 or by email at participant.advocate@hsc.utah.edu.

Consent

By clicking "Yes, I would like to participate" and responding to the questions in this online questionnaire, I confirm I have read the information in this consent form and have the opportunity to ask questions. I voluntarily agree to take part in this evaluation study.

Thank you for completing this survey!

- Yes, I would like to participate. (1)
- No, I would not like to participate. (2)

End of Block: consent

Start of Block: Default Question Block

Page Break

Q2 Which biotechnology courses did you recently complete? (Please check all courses that you are evaluating in this survey.)

- BTEC 1000: Biotechnology: Engineering Life (1)
- BTEC 1100: Applied Molecular Methods (2)
- BTEC 1200: Aseptic Technique (3)
- BTEC 1300: Introduction to Manufacturing (4)
- BTEC 2000: Biotechnology Experience (5)
- BTEC 2020: Biomolecular Separation and Analysis (6)
- BTEC 2030: Cell Culture (7)
- BTEC 2200: Advanced Molecular Methods (8)

Page Break

Display This Question:

If Which biotechnology courses did you recently complete? (Please check all courses that you are eva... = BTEC 1000: Biotechnology: Engineering Life

Q3 How much did the following influence your decision to choose to take BTEC 1000?

	Not at all (4)	A little (7)	A moderate amount (8)	A lot (9)	A great deal (10)
It fit my schedule. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It sounded more interesting than the other general education options. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am interested in Biotechnology. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wanted to try something different. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I plan to major in Biotechnology or a related field. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biotechnology is relevant to my current job. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was interested in taking a competency-based course. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Display This Question:

If Which biotechnology courses did you recently complete? (Please check all courses that you are eva... = BTEC 1000: Biotechnology: Engineering Life

Q4 After taking **BTEC 1000: Biotechnology: Engineering Life**, how prepared do you feel to do the following?

	Very unprepared (1)	Unprepared (2)	Neutral (3)	Prepared (4)	Very prepared (5)
Understand how biotechnology can benefit the global population (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understand how biotechnology could harm the global population. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Genetically alter a living organism (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purify a protein (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Analyze DNA for specific traits (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Display This Question:

If Which biotechnology courses did you recently complete? (Please check all courses that you are eva... = BTEC 1100: Applied Molecular Methods

Q5 After taking **BTEC 1100: Applied Molecular Methods**, how prepared do you feel to do the following?

	Very unprepared (1)	Unprepared (2)	Neutral (3)	Prepared (4)	Very prepared (5)
Complete measurements related to the field of biotechnology (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complete calculations related to the field of biotechnology (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complete basic microbiology processes (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conduct reactions to manipulate DNA (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Display This Question:

If Which biotechnology courses did you recently complete? (Please check all courses that you are eva... = BTEC 1200: Aseptic Technique

Q6 After taking **BTEC 1200: Aseptic Technique**, how prepared do you feel to do the following?

	Very unprepared (1)	Unprepared (2)	Neutral (3)	Prepared (4)	Very prepared (5)
Demonstrate aseptic technique (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Display This Question:

If Which biotechnology courses did you recently complete? (Please check all courses that you are eva... = BTEC 1300: Introduction to Manufacturing

Q7 After taking **BTEC 1300: Introduction to Biomanufacturing**, how prepared do you feel to do the following?

	Very unprepared (1)	Unprepared (2)	Neutral (3)	Prepared (4)	Very prepared (5)
Understand how federal regulations affect the manufacturing process. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Demonstrate good documentation practices using a document management system. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understand good manufacturing practices and how they relate to federal regulations and documentation. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apply quality principles to the manufacturing process. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Display This Question:

If Which biotechnology courses did you recently complete? (Please check all courses that you are eva... = BTEC 2000: Biotechnology Experience

Q8 After taking **BTEC 2000: Biotechnology Experience**, how prepared do you feel to do the following?

	Very unprepared (1)	Unprepared (2)	Neutral (3)	Prepared (4)	Very prepared (5)
Work in a manufacturing lab (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work in a research lab (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Display This Question:

If Which biotechnology courses did you recently complete? (Please check all courses that you are eva... = BTEC 2020: Biomolecular Separation and Analysis

Q9 After taking **BTEC 2020: Biomolecular Separation and Analysis**, how prepared do you feel to do the following?

	Very unprepared (1)	Unprepared (2)	Neutral (3)	Prepared (4)	Very prepared (5)
Understand the four levels of protein structure. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Express a protein of interest. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Separate molecules using chromatography. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Separate proteins using SDS-PAGE. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determine the turnover rate of any enzyme in particular conditions. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Display This Question:

If Which biotechnology courses did you recently complete? (Please check all courses that you are eva... = BTEC 2030: Cell Culture

Q10 After taking **BTEC 2030: Cell Culture**, how prepared do you feel to do the following?

	Very unprepared (1)	Unprepared (2)	Neutral (3)	Prepared (4)	Very prepared (5)
Maintain a cell line. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Display This Question:

If Which biotechnology courses did you recently complete? (Please check all courses that you are eva... = BTEC 2200: Advanced Molecular Methods

Q11 How well did **BTEC 2200: Advanced Molecular Methods** prepare you to...

	Very unprepared (1)	Unprepared (2)	Neutral (3)	Prepared (4)	Very prepared (5)
Understand quantitative PCR? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understand mutagenesis? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q12 Approximately how often did you meet with a biotechnology instructor this academic year? This could include formal meetings, virtual meetings, or informal discussions that occurred in the lab.

- Once a semester (1)
- More than once a semester but less than once a month (2)
- Between 1 and 3 times a month (3)
- Once a week (4)
- Multiple times a week (5)

Q13 Please indicate how much you **agree** or **disagree** with the following statements:

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
I was able to meet with my biotechnology instructor(s) as often as I would like to. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I reached out to my biotechnology instructor(s) , he/she responded promptly. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meeting with biotechnology instructor(s) has been helpful. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14 Biotech courses are using a **Competency-Based Education (CBE) model** which allows students to begin classes mid-semester, and complete lab work during extended hours. Courses are based on mastery of competencies used in the biotech laboratory settings.

The **traditional model**, in contrast, is based on completing a set number of course hours along with various assignments and assessments.

Please indicate how much you agree or disagree with the following statements about the CBE model.

	Strongly Disagree (1)	Disagree (2)	Neither disagree nor agree (3)	Agree (4)	Strongly Agree (5)
Taking classes this way works well for me. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel confident about my ability to pass biotech courses that use the CBE model. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This semester, I gained skills useful to the laboratory setting. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The courses I took this semester have increased my ability to function as an employee in a biotech laboratory. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The lab's hours fit my schedule well. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The instructors provided a supportive learning environment. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Active student participation was encouraged.
(7)

The instructors enabled me to accomplish the learning objectives for my courses.
(8)

Page Break

Q15 Please indicate how much you **agree** or **disagree** with the following statements about Competency Based Education (CBE).

	Strongly Disagree (1)	Disagree (2)	Neither disagree nor agree (3)	Agree (4)	Strongly Agree (5)
The CBE model is educationally valuable. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More courses at SLCC should adopt the CBE approach. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The extended-hour open lab contributed to my academic success. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The CBE model will allow me to finish my education faster. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The CBE model will save me money. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Q16 Do you prefer one classroom model (traditional vs. CBE) better than another? If so, which one do you like better and why?

- Greatly prefer traditional (1)
- Somewhat prefer traditional (2)
- Like them both the same (3)
- Somewhat prefer CBE (4)
- Greatly prefer CBE (5)

Q17 Please explain.

Q18 What is the best part of the CBE model?

Q19 What improvements could be made to the CBE model?

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Q20 Please describe the race or ethnicity that best describes you.

- African American/Black (1)
- American Indian or Alaska Native (4)
- Asian (5)
- Hispanic or Latino/a (6)
- Native Hawaiian/Pacific Islander (7)
- White (8)
- More than one race (9)
- Other (10)

Page Break

Q21 Sex

- Male (1)
 - Female (2)
 - Other or prefer not to answer (3)
-

Q22 Age

- Under 20 (4)
 - 20-24 (5)
 - 25-29 (6)
 - 30-34 (7)
 - 35-39 (8)
 - 40 or older (9)
-

Page Break

Q23 What is the highest level of education any one of your **parents/guardians** have attained?

- Unknown (1)
 - Did not graduate from high school (2)
 - High school diploma (including GED or equivalent) (3)
 - Some college credit, no degree or certification (4)
 - Certificate of Proficiency/Vocational certificate (5)
 - Associate's degree (for example: AAS, AA, AS) (6)
 - Bachelor's degree (for example: BA, BS) (7)
 - Graduate degree (for example: MA, MS, MBA, MD, DDS, JD, PhD) (8)
-

Q24 What is the highest level of education **you** have completed?

- Unknown (1)
 - Did not graduate from high school (2)
 - High school diploma (including GED or equivalent) (3)
 - Some college credit, no degree or certification (4)
 - Certificate of Proficiency/Vocational certificate (5)
 - Associate's degree (for example: AAS, AA, AS) (6)
 - Bachelor's degree (for example: BA, BS) (7)
 - Graduate degree (for example: MA, MS, MBA, MD, DDS, JD, PhD) (8)
-

Page Break

Q25 Where have you taken classes? Select all that apply.

- Utah high school (1)
- Brigham Young University (15)
- Dixie State University (16)
- Salt Lake Community College (17)
- Snow College (18)
- Southern Utah University (19)
- University of Utah (20)
- Utah College of Applied Technology (21)
- Utah State University - Eastern (22)
- Utah State University (23)
- Utah Valley University (24)
- Weber State University (25)
- Westminster College (26)
- Other - Text (27) _____

Page Break

End of Block: Default Question Block

Start of Block: biotech

Q26 To what extent do you agree or disagree that the following issues have affected your education?

	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)
Financial difficulties (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health or personal problems (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work schedule (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work responsibilities (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family responsibilities (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coursework too difficult (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Courses not challenging enough (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Classes not available when I needed them (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel out of place (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I lack motivation to study and complete assignments (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking only a few courses at a time is slow and discouraging (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty with transportation (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q38 Rate your current level of agreement with the following statements about the COVID-19 pandemic.

	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)
I have felt uncomfortable going into class/lab in person. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been able to adequately do my coursework despite the challenges. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have experienced extenuating circumstances (e.g. childcare, caring for an elderly parent, immune-compromised situation) that made my academic life hard. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have felt supported by SLCC. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have felt supported by SLCC's biotechnology program. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have had the necessary materials/equipment to learn safely. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q27 What has facilitated your pursuit of education in the SLCC Biotech program?

Q28

Thank you for completing the survey! As a token of our appreciation for your feedback, we are offering a \$5 Amazon gift card. To receive this electronic gift card, you will be redirected to a secure website hosted by Salt Lake Community College where you will be asked to provide your email address. The personal information provided on this website will:

ONLY be used for the purposes of providing you with the electronic gift card NOT be shared with any person or party who is not directly involved with providing you with your gift card NOT be connected to your survey responses in any way

If you would like to receive the electronic gift card, please select Yes below.

If you would like to forego the gift card and submit your survey, please select No below.

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- No, I would prefer not to provide my email address. (1)
- Yes, I would like to provide my email address and receive a gift card. (2)

End of Block: biotech
