### Biotechnology: AS

**Associate of Science | 61 credits minimum**

**Biotechnology Division
Jordan Campus** JHS 254C
**General Information** 801-957-4073
**Program Information** 801-957-2851
**Program Website**
**Academic and Career Advising**
**Academic Advisor** JHS 047, 801-957-6215

**Program Faculty**
Associate Professor - Charles Rettberg

**Program Description**
The SLCC Biotechnology AS Program prepares students for employment in Utah's growing biotech industry, while also preparing them for transfer to higher education. Most SLCC Biotech students get an industry job well before or soon after they earn their AS, and most biotech employers offer tuition reimbursement as a benefit. Utah Valley University (UVU) accepts the SLCC Biotech AS as transfer credit, and sends biotech faculty to SLCC's Jordan campus to teach evening sections of the required UVU BS courses.

This means that program graduates may be able to earn a UVU bachelor's degree with their employer's support, without having to commute to Orem.Biotechnology courses are offered for credit, in a competency-based education (CBE) format. Classes are not scheduled in the traditional way; instead, students work online and attend the open learning lab as their schedules permit. Students work at their own pace, and have the opportunity to accelerate completion. Students must achieve a B or better in all aspects of biotechnology courses in order to move on to the next course.

**Career Opportunities**
Biotechnology is a growing industry in Utah, and employers offer good pay, benefits, and opportunities for advancement. According to jobs.utah.gov (October 2017), the median salary for Life, Physical, and Social Science Technicians in the Salt Lake metro area is $55,720.

**Transfer/Articulation Information**
Utah Valley University (UVU) accepts the SLCC Biotech AS as transfer credit, and sends their faculty to SLCC's Jordan campus to teach evening sections of the required UVU BS courses. This means that program graduates may be able to earn a UVU bachelor's degree with their employer's support, without having to commute to Orem. Students are encouraged to meet with the UVU Biotechnology program advisor to plan their own educational path.

**Estimated Cost for Students**
Tuition and student fees: http://www.slcc.edu/student/financial/tuition-fees.aspx
Books: Biotechnology courses do not require textbooks. Costs for non-BTEC textbooks will vary depending on the courses chosen.
Supplies: $10
Course Fees: $20

**Estimated Time to Completion**
Time to completion is 4-5 semesters based on a full-time minimum of 15 credits per semester. Less than 15 credits per semester will increase time to completion.

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| **Program Student Learning Outcomes** | **Related College-Wide Student Learning Outcomes** |
|   | 1 - Substantive Knowledge2 - Communicate Effectively3 - Develop Quantitative Literacies4 - Think Critically5 - Civic Engagement and/or Working Professionally |
| Students will develop a general understanding of the biotechnology field, including applications of biotechnology and the role of regulations and quality in the biotechnology industry. | 1, 6 |
| Students will develop technical and analytical skills that are applicable in the field of biotechnology. | 1, 2, 3, 4, 6, 7 |
| Students will develop a solid foundation of knowledge on which to further their education in the sciences. | 1, 3, 4, 6, 7 |
| Students will develop critical thinking skills used in applying the scientific method to problems. | 1, 4, 6 |
| Students will develop essential communication skills necessary in working with complex information and concepts. | 1, 2, 6 |

General Education Requirements

Core Skills

Composition (EN) 2 courses

* ENGL 1010 - Intro to Writing (EN)

* ENGL 2010 - Intermediate Writing (EN) **or**
* ENGL 2100 - Technical Writing (EN)

Quantitative Literacy (QL) 1 course

* MATH 1050 - College Algebra (QL)

American Institutions (AI) 1 course

* ECON 1740 - Economic History of U.S. (AI)
* HIST 1700 - American Civilization (AI)
* POLS 1100 - US Government & Politics (AI)

**or**

* HIST 2700 - US History to 1877 (SS)  **and**
* HIST 2710 - US History Since 1877 (SS)

**NOTE:** When both HIST 2700 and HIST 2710 are used to meet the American Institutions requirement, individual courses will not meet the Social Science Distribution requirement.

Institutional Requirements

Communication (CM) 1 course

* Communication (CM)

International & Global (IG) 1 course

* International & Global (IG)

Lifelong Wellness (LW) 1 course

* Lifelong Wellness (LW)

Distribution Areas

1 course from each of the Distribution Areas, 5 total courses; 1 course must also be designated as DIVERSITY (DV)

* Fine Arts (FA)
* Humanities (HU)
* Life Sciences (LS)  - requirement met through pre-major coursework
* Physical Science (PS)  - requirement met through pre-major coursework
* Social Science (SS)

Required Courses (32 Credits)

* BTEC 1000 - Biotech: Engineering Life (IG)
* BTEC 1100 - Applied Molecular Biology
* BTEC 1200 - Aseptic Technique
* BTEC 1300 - Intro Regulations & Quality
* BTEC 2000 - Biotechnology Experience
* BTEC 2020 - Biomolecular Separation and Analysis
* BTEC 2030 - Cell Culture
* BTEC 2200 - Advanced Molecular Methods
* CHEM 1210 - General Chemistry I
* CHEM 1215 - General Chemistry Lab I
* CHEM 1220 - General Chemistry II
* CHEM 1225 - General Chemistry Lab II
* BIOL 1610 - College Biology I (LS)
* BIOL 1615 - College Biology I Lab

Program Electives (3 credits)

Students require 3 elective credits to complete the Biotechnology AS. The following list indicates the additional courses required at the lower division level to earn a Bachelor's of Science degree from UVU, and are thus recommended as electives.

* MATH 2040 - Statistics for Applied Science
* BIOL 2060 - Microbiology
* BIOL 2065 - Microbiology Lab
* CHEM 2310 - Organic Chemistry I
* CHEM 2315 - Organic Chemistry Lab I
* CHEM 2320 - Organic Chemistry II
* CHEM 2325 - Organic Chemistry Lab II
* PHYS 2010 - College Physics I
* PHYS 2015 - College Physics Lab I
* PHYS 2020 - College Physics II
* PHYS 2025 - College Physics Lab II

**Biotechnology AS: Full-time**

**Plan of Study 2019-2020**

The following is a plan of requirements to complete this Associate of Science degree in 2 years. Each student's experience will vary slightly, as this plan does not include transfer work, Advanced Placement (AP), or other institutions' concurrent enrollment credits. Math and English placement will be based on the student's appropriate placement scores. If developmental courses are required, they should be taken in the student's first semester.

NOTE: This plan assumes the student is prepared to take the courses listed. If prerequisites are required, additional semesters may be required to complete this degree.

Meet with the Academic Program Advisor and consult DegreeWorks for specific degree requirements.

First Year

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| --- | --- | --- |
| Fall Semester (15 credits) |   | Spring Semester (14 credits) |
| ☐ BTEC 1000 Biotech: Engineering Life (IG)  -  3 credits     |   | ☐ CHEM 1210 General Chemistry I  -  4 credits  |   |
| ☐ BTEC 1100 Applied Molecular Biology  -  4 credits  |   | ☐ CHEM 1215 General Chemistry Lab I  -  1 credits  |   |
| ☐ BTEC 1200 Aseptic Technique  -  1 credits  |   | ☐ American Institutions (AI) - 3 credits  |   |
| ☐ BTEC 1300 Intro Regulations & Quality  -  2 credits  |   | ☐ Fine Arts (FA) - 3 credits  |   |
| ☐ MATH 1050 College Algebra (QL)  -  4 credits  |   | ☐ ENGL 1010 Intro to Writing (EN)  -  3 credits  |   |
| ☐ Lifelong Wellness (LW) - 1 credit  |   |   |   |
| ► Progress Check: Log in and check your Degree Audit via MySLCC |   | ► Progress Check: Meet with Academic Program Advisor |   |

Second Year

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| --- | --- | --- |
| Fall Semester (16 credits) |   | Spring Semester (16 credits) |
| ☐ BIOL 1610 College Biology I (LS)  -  3 credits  |   | ☐ CHEM 1220 General Chemistry II  -  4 credits  |   |
| ☐ BIOL 1615 College Biology I Lab  -  1 credits  |   | ☐ CHEM 1225 General Chemistry Lab II  -  1 credits  |   |
| ☐ Humanities (HU) - 3 credits  |   | ☐ ENGL 2100 Technical Writing (EN)  -  3 credits or |   |
| ☐ BTEC 2000 Biotechnology Experience  -  3 credits  |   |     ENGL 2010 Intermediate Writing (EN)  -  3 credits  |   |
| ☐ BTEC 2020 Biomolecular Separation and Analysis  -  3 credits  |   | ☐ BTEC 2030 Cell Culture  -  2 credits   |   |
| ☐ Communication (CM) - 3 credits  |   | ☐ BTEC 2200 Advanced Molecular Methods  -  1 credits  |   |
|   |   | ☐ Social Science (SS)  |   |
|   |   | ☐ Elective  |   |
| ► Progress Check: Apply for Graduation |   |   |   |

**Advising Notes**

Students must choose a diversity course from one of the general education distribution areas. See an academic advisor if you have questions.