

# BIOTECHNOLOGY: CP

Certificate of Proficiency | 32 credit hours minimum

**Area of Interest: Science, Technology, Engineering, and Math (STEM)**

**Program Website** (<https://stlcc.edu/programs-academics/pathways/s-t-e-m/biotechnology/>)

**Academic Advising** (<https://stlcc.edu/admissions/advising/>)

## Program Description:

The Certificate of Proficiency in Biotechnology is a specialized training for students to assist with employment as biotechnicians. The certificate will assist with engagement in research and development, quality control, biomanufacturing, and bioprocessing. All students in this field of study are required to complete the core biotechnology/science courses. The completion of this program provides the knowledge and hands-on skills necessary to work in a life science research workplace.

**Location.** This program is offered in its entirety at Florissant Valley.

**Cost of Attendance.** For more information on cost of attendance visit **MoSCORES** (<https://scorecard.mo.gov/Search/>).

**Program Career and Salary Information.** Pursuant to Missouri HB 1606 (2018), information regarding the number of credit hours, program length, employment rate, wage data, and graduates employed in careers related to their program of study at St. Louis Community College can be found at the following URL: <https://scorecard.mo.gov/scorecard/> ([https://www.google.com/url?q=https://scorecard.mo.gov/scorecard/&sa=D&ust=1555536894857000&usg=AFQjCNG1xf3E\\_i2lO96zEytILO-s5xaJCQ](https://www.google.com/url?q=https://scorecard.mo.gov/scorecard/&sa=D&ust=1555536894857000&usg=AFQjCNG1xf3E_i2lO96zEytILO-s5xaJCQ)). Search using School / Program “St. Louis Community College” and choose the degree or credential type of interest.

The following limitations to the data apply: Information provided is based on the most recent cohorts available. Typically, most recent cohorts for wage and completion data are six years prior to the current academic year. Time to complete a program of study varies depending on the number of credit hours students earn per semester.

**Interested in this program?** Start the enrollment process by visiting the **Apply to STLCC** (<https://www.stlcc.edu/admissions/apply-to-stlcc/>) page.

## At the completion of the program, students are expected to:

1. describe experimental procedures and conclusions.
2. perform Good Documentation Practices from which data analysis, project decisions, and successive experimental designs are achieved.
3. apply recombinant DNA technology techniques focusing from DNA to protein, and inheritance of genetic information.
4. adhere to laboratory standards including use of Personal Protective Equipment, documentation and organization and cleanliness in the workspace.
5. collaborate within a team environment.
6. design experiments using basic molecular biology methodologies with proper controls and anticipated results defined.
7. perform experiments using basic molecular biology methodologies such as separation of macromolecules through electrophoretic techniques, polymerase chain reaction, cell culture, recombinant DNA techniques, and protein expression/purification.
8. assess the contributions of biotechnology to advances in the fields of agriculture and human health.

| Code                        | Title  | Credit Hours |
|-----------------------------|--|--------------|
| <b>Program Requirements</b> |  |              |
| CHM 105                     | General Chemistry I (MOTR CHEM 150L)                     | 5            |
| BTX 104                     | Basic Laboratory Methods for Biotechnology               | 3            |
| BIO 140                     | Principles of Biology I (MOTR BIOL 150L)                 | 5            |
| BTX 219                     | Biotechnology I  | 5            |
| BTX 220                     | Biotechnology II   | 5            |
| BTX 221                     | Workplace Learning: Biotechnology                        | 3-6          |
| BTX 226                     | Advanced Topics in Biotechnology (two sections required) | 3            |
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| <b>Total Credit Hours</b>   |  | <b>32-35</b> |

**PLEASE NOTE:** If you originally enrolled at STLCC prior to Fall 2025, you may need to view an **archived catalog** (<http://catalog.stlcc.edu/archived-catalogs/>) for your correct program requirements. Please speak with an advisor or the program coordinator for more information.

| Code              | Title                                    | Hours | Prerequisites   | Milestones/Notes |
|-------------------|--|-------|---|------------------|
| <b>First Year</b> |  |       |   |                  |
| <b>Fall</b>       |  |       |   |                  |
| CHM 105           | General Chemistry I (MOTR CHEM 150L)     | 5     | MTH 140 (or MTH 140S or at least one and a half years of high school algebra) and CHM 101 with a minimum grade of "C" or one year of high school chemistry, and Reading Proficiency |                  |
| BIO 140           | Principles of Biology I (MOTR BIOL 150L) | 5     | MTH 140 or MTH 140S or MTH 160S with a minimum grade of "C" or placement into MTH 160, and Reading Proficiency  |                  |

|                    |  |              |   |  |
|--------------------|--|--------------|---|--|
| BTX 104            | Basic Laboratory Methods for Biotechnology | 3            | Placement into MTH 140 or higher or completion of MTH 140S with a minimum grade of "C", and Reading Proficiency |  |
|                    | <b>Credit Hours</b>                        | <b>13</b>    |   |  |
| <b>Spring</b>      |  |              |   |  |
| BTX 219            | Biotechnology I                            | 5            | BTX 104 or BIO 104 with a minimum grade of "C", BIO 140 with a minimum grade of "C", and Reading Proficiency    |  |
| BTX 226            | Advanced Topics in Biotechnology           | 3            | Concurrent or prior enrollment in BTX 219 or BIO 219 with a minimum grade of "C" and Reading Proficiency        |  |
| BTX 226            | Advanced Topics in Biotechnology           | 3            | Concurrent or prior enrollment in BTX 219 or BIO 219 with a minimum grade of "C" and Reading Proficiency        |  |
|                    | <b>Credit Hours</b>                        | <b>11</b>    |   |  |
| <b>Second Year</b> |  |              |   |  |
| <b>Fall</b>        |  |              |   |  |
| BTX 220            | Biotechnology II                           | 5            | BTX 219 or BIO 219 with a minimum grade of "C" and Reading Proficiency  |  |
| BTX 221            | Workplace Learning: Biotechnology          | 3-6          | Concurrent or prior enrollment in BTX 220 or BIO 220 with a minimum grade of "C" and Reading Proficiency        |  |
|                    | <b>Credit Hours</b>                        | <b>8-11</b>  |   |  |
|                    | <b>Total Credit Hours</b>                  | <b>32-35</b> |   |  |

\*Click on the hyperlinked course number to view additional information about the course.

\*\*Students completing a course that has been assigned a MOTR number may transfer that course to any public institution in Missouri. Those who complete CORE 42 requirements will have that verification on their transcript.

\*\*\* It is your responsibility to verify that the courses listed above will transfer to the four-year institution of your choice. Maximize your transfer credits/classes by meeting with an academic advisor.

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**catalogs/)** for your correct program requirements. Please speak with an advisor or the program coordinator for more information.

| Code              | Title                                      | Hours    | Prerequisites   | Milestones/Notes |
|-------------------|--|----------|---|------------------|
| <b>First Year</b> |  |          |   |                  |
| <b>Fall</b>       |  |          |   |                  |
| BTX 104           | Basic Laboratory Methods for Biotechnology | 3        | Placement into MTH 140 or higher or completion of MTH 140S with a minimum grade of "C", and Reading Proficiency |                  |
| BIO 140           | Principles of Biology I (MOTR BIOL 150L)   | 5        | MTH 140 or MTH 140S or MTH 160S with a minimum grade of "C" or placement into MTH 160, and Reading Proficiency  |                  |
|                   | <b>Credit Hours</b>                        | <b>8</b> |   |                  |
| <b>Spring</b>     |  |          |   |                  |
| BTX 219           | Biotechnology I                            | 5        | BTX 104 or BIO 104 with a minimum grade of "C", BIO 140 with a minimum grade of "C", and Reading Proficiency    |                  |

|                    |                                      |              |   |  |
|--------------------|--------------------------------------|--------------|---|--|
| BTX 226            | Advanced Topics in Biotechnology     | 3            | Concurrent or prior enrollment in BTX 219 or BIO 219 with a minimum grade of "C" and Reading Proficiency  |  |
|                    | <b>Credit Hours</b>                  | <b>8</b>     |   |  |
| <b>Summer</b>      |                                      |              |   |  |
| CHM 105            | General Chemistry I (MOTR CHEM 150L) | 5            | MTH 140 (or MTH 140S or at least one and a half years of high school algebra) and CHM 101 with a minimum grade of "C" or one year of high school chemistry, and Reading Proficiency |  |
|                    | <b>Credit Hours</b>                  | <b>5</b>     |   |  |
| <b>Second Year</b> |                                      |              |   |  |
| <b>Fall</b>        |                                      |              |   |  |
| BTX 220            | Biotechnology II                     | 5            | BTX 219 or BIO 219 with a minimum grade of "C" and Reading Proficiency  |  |
| BTX 221            | Workplace Learning: Biotechnology    | 3-6          | Concurrent or prior enrollment in BTX 220 or BIO 220 with a minimum grade of "C" and Reading Proficiency  |  |
|                    | <b>Credit Hours</b>                  | <b>8-11</b>  |   |  |
| <b>Spring</b>      |                                      |              |   |  |
| BIO 226            | Advanced Topics in Biotechnology     | 3            | Concurrent or prior enrollment in BIO 219 with a minimum grade of "C" and Reading Proficiency   |  |
|                    | <b>Credit Hours</b>                  | <b>3</b>     |   |  |
|                    | <b>Total Credit Hours</b>            | <b>32-35</b> |   |  |

\*Click on the hyperlinked course number to view additional information about the course.

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