Biotechnology Lab Specialist

Associate in Applied Arts and Sciences (AAAS) or
Associate in Applied Science-Transfer (AAS-T)

Planning Guide 2017-2018

EPC 678 and 678T

Program Information:

Length of Program: 92.5-93.5 Credits
Completion Award: A.A.A.S. or A.A.S.-T. Degree
Enrollment: Fall
Approximate Quarterly Costs: $660/yr for lab fees
(in addition to tuition, books and parking)

Website: www.shoreline.edu/biotechnology/

Program Advisor:

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First Year Advisor

Joyce Fagel
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Program Description:

The Associate in Applied Arts and Sciences degree is designed to provide students with the knowledge and skills leading to an entry-level laboratory position involved in the production of genetically engineered drugs, gene therapy, microbiology, virology, forensic science, agriculture and environmental science. Students interested in advancement are encouraged to pursue a four-year baccalaureate degree using the Biology Associate in Science (AS-DTA) direct transfer degree planning guide.

Biotechnology Lab Specialist—What is it?

The Biotechnology Laboratory Specialist Program prepares students for work in laboratories involved in any aspect of biotechnology processes. The curriculum provides a foundation in a variety of math and science disciplines including algebra, statistics, chemistry, biology, microbiology and computer science. Students gain a working knowledge of molecular biology, recombinant DNA, immunology, protein purification and tissue culture -- both through classroom lectures and extensive "hands-on" laboratory learning experiences.

Program Outcomes:

Students who successfully complete this program -**by achieving a GPA of 2.0 or better for the entire program**-should be able to:

1. Assist research scientists in the laboratory;
2. Perform technical procedures such as cell counting, solution and media preparation, DNA extraction and characterization, electrophoresis, cloning, polymerase chain reaction, DNA sequence analysis, ELISA and other immunology techniques, maintenance of cell lines, transfection, and protein isolation and purification using various chromatographic techniques;
3. Conduct research experiments following operating and safety protocols and apply knowledge of theory and techniques to troubleshoot appropriately;
4. Analyze and display data using computer technology including the Internet and software designed for maintaining a database, preparing spreadsheets, conducting statistical analysis, bioinformatics and graphical display; and
5. Manage laboratory activities including record keeping, ordering supplies and preparing reports and presentations.

Career Opportunities—What can I do with an AAAS or AAS-T Degree from the Biotechnology Lab Specialist Program?

The career outlook in the field of biotechnology is very promising with over 100 biotechnology-related facilities in the Seattle metropolitan area. The proliferation of new technologies is expanding employment opportunities in research, production, development and manufacturing; examples include work as a Laboratory Assistant, Lab Specialist or Research Assistant.

Potential employers include: University or privately owned biotechnology research and production labs; and pharmaceutical or criminal labs; fisheries, oceanographic and other nature resource management organizations. To learn more, please visit career information and resources at http://www.shoreline.edu/counseling-center/career-counseling.aspx.

Biotechnology Lab Specialist Planning Guide—2017–2018 | A.A.A.S or A.A.S.-T.

Program Prerequisites: Current (within two years) knowledge of Intermediate Algebra 1 (Math 098) or higher and placement into ENGL& 101 is a prerequisite for MATH& 146. Math 099 or higher and placement into ENGL& 101 is a prerequisite for CHEM&121 and CHEM 171.

Application Required: An application is required to enter the four-quarter Core Biotech Sequence of Courses: BIOL 265/266, 270/274, 275, 277, 279, 249 and 280. Please see an advisor for an application form or visit: http://www.shoreline.edu/biotechnology/application.aspx

A.A.A.S. Degree – 92.5-93.5 Credits

GENERAL EDUCATION CORE REQUIREMENTS | 17 Credits			
Course	**QTR**	**GR**	**CR**
ENGL& 101 English Composition I *or* BTWRT 215 Business Communications			5
MCS 105 Intro to Multicultural Studies *or* CMST 203 Communication for Social Change			5
BUSTC 105 Computer Applications			5
BUS 105 Essentials of Human Relations			2

BIOTECHNOLOGY CORE REQUIREMENTS | 75.5-76.5 Credits			
Course	**QTR**	**GR**	**CR**
BIOL& 211 Majors Cellular Biology			5
BIOL 249 Tissue Culture/Staining			4
BIOL& 260 Microbiology			5
BIOL 265 Media and Solution Prep I			2
BIOL 266 Media and Solution Prep II			2
BIOL 270 Molecular Biology			3
BIOL 274 Molecular Biology Lab			3
BIOL 275 Recombinant DNA Tech			6
BIOL 277 Immunology			6
BIOL 279 Biotechnology Techniques			3
BIOL 280 Seminar in Biotechnology			1
BIOL 290 Internship			1-2
CHEM& 121 Intro to Chemistry			5
CHEM& 131 Intro to Organic/Biochem			5
CHEM 171 Gen Inorganic Chem I			4
CHEM 181 Gen Inorganic Chem I Lab			2.5
CHEM 172 Gen Inorganic Chem I			4
CHEM 182 Gen Inorganic Chem II Lab			2.5
CHEM 173 Gen Inorganic Chem III			4
CHEM 183 Gen Inorganic Chem III lab			2.5
MATH& 146 Intro to Statistics			5

ADDITIONAL INFORMATION

This program is Associate of Applied Science-Technology (AAS-T) degree eligible. The AAS-T degree indicator, which will appear on your transcript, will enable students to transfer this degree directly to some four-year institutions. Please check with your program advisor for more specific information.

Note: Every effort has been made to ensure the accuracy of the information in this publication. However, the information is subject to change without notice and final career decisions are the responsibility of the student.

CORE BIOTECH SEQUENCE		
	GR	**CR**
Fall Quarter 1st Year		
ENGL& 101 English Composition I *or*		5
BTWRT 215 Business Communications		5
CHEM& 121 Intro to Chemistry		5
MCS 105 Intro to Multicultural Studies *or*		5
CMST 203 Communication for Social Change		5
Winter Quarter 1st Year		
MATH& 146 Intro to Statistics		5
BIOL& 211 Majors Cellular Biology		5
BUSTC 105 Computer Applications		5
Spring Quarter 1st Year		
CHEM& 131 Intro to Organic/Biochem		5
BIOL& 260 Microbiology		5
BUS 105 Essentials of Human Relations		2
Fall Quarter 2nd Year		
CHEM 171 Gen Inorganic Chem I		4
CHEM 181 Gen Inorganic Chem Lab I		2.5
BIOL 270 Molecular Biology		3
BIOL 274 Molecular Biology Lab		3
BIOL 265 Media & Solution Prep I		2
Winter Quarter 2nd Year		
CHEM 172 Gen Inorganic Chemistry II		4
CHEM 182 Gen Inorganic Chem Lab II		2.5
BIOL 275 Recombinant DNA Techniques		6
BIOL 280 Seminar in Biotechnology		1
BIOL 266 Media & Solution Prep II		2
Spring Quarter 2nd Year		
CHEM 173 Gen Inorganic Chem III		4
CHEM 183 Gen Inorganic Chem Lab III		2.5
BIOL 249 Tissue Culture/Staining		4
BIOL 277 Immunology		6
Summer Quarter 2nd Year		
BIOL 279 Biotechnology Techniques		3
BIOL 290 Internship		1-2

APPROVAL TO GRADUATE

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Student Name & SID *Date*

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Faculty Advisory *Date*

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Division Dean *Date*

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Credential Approval *Date*