BIOTECHNOLOGY
LABORATORY SCIENCES

Associate in Science Degree (CIP # 1341010100)

Valencia’s Biotechnology Laboratory Sciences program will prepare you for one of the hottest emerging career fields today. Biotechnology is using the latest developments in genetics and molecular biology to create useful products for medicine, food, agriculture and alternative energy sources. Biotechnology technicians assist in conducting the laboratory tests, experiments and research that lead to these innovations.

Through Valencia’s program, you’ll learn the fundamentals of biotechnology while gaining hands-on experience through lab work and internship experience. The program emphasizes broad biology and chemistry concepts, basic microbiology, algebraic and statistical analysis, biohazard and safety procedures and core biotechnical laboratory techniques. College-level math is required.

Students are strongly encouraged to consult a career program advisor in the department office for assistance in determining the best education plan for their career goals.

Although scheduling may not always provide for the following progression of courses, students should use the foundation, intermediate and advanced course sequence as a guide in program planning.

All degree-seeking students must satisfy entry testing requirements and satisfactorily complete all mandatory courses in reading, student success, mathematics, English, and English for Academic Purposes in which the student is placed.

Alternative Ways to Earn Credit toward this Degree

Graduates of specific programs at Orange Technical College and Osceola Technical College, as well as other institutions may be eligible to receive college credit for courses in this program. You may also be eligible to receive credit toward this degree if you have earned one of the approved Gold Standard industry certifications or Career Pathways credit. To learn more about Valencia’s award of credit options, visit valenciacollege.edu/asdegrees/credit_octc.cfm (http://valenciacollege.edu/asdegrees/credit_octc.cfm). Eligible students should contact the Career Program Advisor in their academic department for more information about the requirements for the award of credit.

College Credit Technical Certificates

The Biotechnology Laboratory Sciences A.S. degree also offers the following college credit certificate programs. These certificates can put you on the fast-track to reaching your career goals. They are designed to equip you with a specialized skill set for entry-level employment or to upgrade your skills for job advancement. Most can be completed in one year or less, and all of the courses in the certificates are embedded in the A.S. degree. You can earn the certificates as you progress through your A.S. Degree or as a separate, stand-alone credential. Click on the Certificate tab at the top of the page for more information about the certificates that are offered.

- Biotechnology Laboratory Specialist (30 credits) (CIP # 0341010101)
- Biotechnology Specialist (19 credits) (CIP # 0626120101)

Start Right

Degree-seeking students enrolling at Valencia for the first time will have a limited range of courses from which to choose for their first 18 college-level credits. Within the first 18 college credit hours, you will be required to take ENC1101 (3 credits), and if applicable, SLS 1122 (3 credits) and a mathematics course appropriate to your selected meta-major (3 credits). The remaining courses will be chosen from the General Education Core Courses in humanities (3 credits), science (3 credits), or social science (3 credits), and/or the introductory courses within the A.S. degree programs. For specific courses see the Foundation Courses on the “Program Requirements” tab. For course sequencing recommendations, see your Career Program Advisor or create an education plan by logging into Atlas, clicking on the LifeMap tab and clicking My Education Plan.

Salary & Earnings Information

For salary and wage information, visit: www.floridawages.com (http://www.floridawages.com).

Potential Careers

- Biotechnology Technician
- DNA Finger printer
- Cell Culture Technician
- Quality Control Technician
- Research Assistant
- Bio-Manufacturing Assistant
- Laboratory Technician

Contacts

Future Students
To apply to the program or learn more, contact Enrollment Services at enrollment@valenciacollege.edu or 407-582-1507 or visit valenciacollege.edu/biotechnology (http://valenciacollege.edu/biotechnology).

Current Students
Contact the Career Program Advisor below for more information.

Sarah Ashby, Career Program Advisor, Lake Nona Campus: 407-582-7532 sashby4@valenciacollege.edu (mgonzalez10@valenciacollege.edu)

Internship and Workforce Services

If you need assistance with job resources or in locating an internship, please visit: valenciacollege.edu/internship (http://valenciacollege.edu/internship).

Program Outcomes

- Students will demonstrate knowledge of the field of biotechnology.
- Students will demonstrate a working knowledge of chemistry and cell biology, as required for biotechnology.
- Students will be able to perform techniques relevant to biotechnology.
- Students will understand the biochemical properties of DNA, RNA and describe the PCR steps
- Students will demonstrate an understanding of the importance of following lab safety and proper lab documentation.

Foundation Courses

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<td>FRESHMAN COMPOSITION I (GR)</td>
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Biotechnology Laboratory Sciences

Technical Certificate

This certificate is designed to equip students with the foundational knowledge and skills that will prepare them for entry-level jobs in the Biotechnology field. Areas of focus include broad biology and chemistry concepts, documentation procedures, and biohazard and safety procedures. Gainful Employment Information (http://valenciacollege.edu/asdegrees/GainfulEmployment.cfm)

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### Total Credit Hours

Total Credit Hours: 61

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<tr>
<td>SLS 1122</td>
<td>NEW STUDENT EXPERIENCE</td>
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</tr>
<tr>
<td>SPC 1608</td>
<td>FUNDAMENTALS OF SPEECH</td>
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| Intermediate Courses
| ENC 1102      | FRESHMAN COMPOSITION II (GR)                  | 3            |
| CHM 1046C     | GENERAL CHEMISTRY WITH QUALITATIVE ANALYSIS II| 4            |
| MCB 2010C     | MICROBIOLOGY                                  | 4            |
| Select either | Humanities or Social Science (GR)              | 3            |
| PHI 2010      | PHILOSOPHY                                    | 3            |
| MAC 1105      | COLLEGE ALGEBRA (GR)                          | 3            |
| BSC 1421C     | INTRODUCTION TO BIOTECHNOLOGY                 | 4            |
|               | **~                                           |              |
| Advanced Courses
| BSC 2426C     | BIOTECHNOLOGY METHODS I                      | 4            |
| BSC 2427C     | BIOTECHNOLOGY METHODS II                     | 4            |
| BSC 2423C     | PROTEIN BIOTECHNOLOGY AND CELL CULTURE        | 4            |
| STA 2023      | STATISTICAL METHODS (GR)                     | 3            |
| PSY 2012      | GENERAL PSYCHOLOGY                            | 3            |
| BSC 2941      | INTERNSHIP EXPLORATION IN BIOLOGY             | 2            |

**This course must be completed with a grade of C or better.**

* This course has a prerequisite; check description in Valencia catalog.

~ This is a general education course.

### Notes:

Expand your career opportunities with a Bachelor’s Degree in Business and Organizational Leadership (BASBOL) from Valencia. This degree builds on your skills, and prepares you for a supervisory or management role within your respective field. For more information, go to: Bachelor’s Degree in Business & Organizational Leadership (http://catalog.valenciacollege.edu/degrees/bachelorofscience/bas).

Students who wish to continue their education should consult with a Career Program Advisor to determine the best education plan for their career goals.

Students wishing to transfer credits from this program to another institution must accept responsibility for securing approval from the transfer institution for acceptance of this degree.

Biotechnology Laboratory Specialist

Technical Certificate

This certificate is designed to equip students with the foundational knowledge and skills that will prepare them for entry-level jobs and career advancement in the Biotechnology field. Areas of focus include biology and chemistry concepts, statistical analysis, laboratory techniques and concepts, laboratory documentation procedures, and biohazard and safety procedures. Gainful Employment Information (http://valenciacollege.edu/asdegrees/GainfulEmployment.cfm)

### Program Outcomes

- Demonstrate communication skills.
- Demonstrate safety skills.
- Demonstrate basic laboratory skills.
- Demonstrate regulatory compliance.
- Demonstrate appropriate decision making and problem solving techniques.
- Demonstrate quality assurance/control.
- Maintain facility and equipment.

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