

# Virginia Western Community College Associate of Science in Science: Biotechnology

## James Madison University Bachelor of Science: Biotechnology

Based on degree requirements for the 2024-25 academic year

VWCC Associate of Science in Science: Biotechnology			
Fall Semester		Spring Semester	
First Year	Cr	First Year	Cr
SDV 101 (JMU UNST OOO Elective Credit)	2	BIO 250 (JMU ISAT 305 + BIO 226 Biology Elective)	3
ENG 111 (JMU WRTC OOO Elective Credit)	3	BIO 253 (JMU BIO 226 Biology Elective)	3
MTH 161 (JMU MATH 155)	3	ENG 112 (JMU WRTC 103)	3
BIO 101 (JMU BIO 140 +140L)	4	BIO 255 (JMU BIO 204 Biotechnology Elective*)	2
ITE 152 (JMU IT OOO Elective Credit)	3	BIO 150 (JMU BIO 245 + 245L)	4
	<b>15</b>		<b>15</b>
Second Year	Cr	Second Year	Cr
CHM 111 (JMU CHEM 131+ 131L)	4	CHM 112 (JMU CHEM 132+ 132L)	4
BIO 252/BIO 251 (JMU BIO 226 Biology Elective)	4	HIS 121 (JMU HIST OOO)	3
MTH 245 (JMU MATH 220)	3	PHI 220 (JMU PHIL 150)	3
Social Science ELE- Social Science Elective	3	ENG LIT ELE- Literature Elective	3
BIO 220 (JMU BIO 343 Biotechnology Elective*)	3	CSC 221 (JMU CS 149)	3
	<b>17</b>		<b>16</b>

James Madison University Bachelor of Science, Biotechnology			
Third Year	Cr	Third Year	Cr
BIO 150 + 150L: Foundations of Biology II	4	BIO 240 +240L: Genetics and Laboratory	4
CHEM 241 Organic Chemistry I	3	Biotechnology elective or MATH 232 or 234 if needed to complete Calculus requirement	3-4
MATH 231, 233, or 235: Calculus	3-4	CHEM 242 + 242L: Organic Chemistry II and Organic Chemistry Lab	5
BIOT 260: Biotechnology Seminar	1	ISAT 451: Biotechnology in Industry & Agriculture	3
Biotechnology elective	3-4		
	<b>14-16</b>		<b>15-16</b>
Fourth Year	Cr	Fourth Year	Cr
PHYS 140+140L or PHYS 240+240L: Physics I	4	PHYS 150+150L or PHYS 250+250L: Physics II	4
CHEM 361: Biochemistry I	3	BIO 480 + 480L: Advanced Molecular Biology	4
ISAT 456: Ethical, Legal and Social Implications of Biotechnology	3	CHEM 366L: Biochemistry Lab	2
Biotechnology elective(s)	4-6	Biotechnology or other elective(s)	4-6
	<b>14-16</b>		<b>14-16</b>

\* Students in the VWCC Biotechnology program will have completed five of the fifteen credits of Biotechnology Elective Courses required for the JMU Biotechnology degree, provided they complete coursework with a grade of "C" or higher.

**Total credit hours transferred from VWCC: 63**

**Minimum credit hours required at JMU: 60**

**Program total: 123 credit hours**

**JMU Admission Criteria:** This agreement does **not** guarantee admission to JMU. However, students earning the A.S. in Science: Biotechnology from VWCC are eligible for admission to JMU under the [JMU-VCCS Guaranteed Admission Agreement \(GAA\)](#). Students intending to apply to JMU through the GAA must submit a Letter of Intent and must meet all requirements, including a 3.0 GPA and a minimum of 24 credit hours completed after high school. Requirements and forms are available on the JMU [Guaranteed Admissions Agreement](#) webpage. Students who do not qualify for guaranteed admission should apply through the transfer admission process. Competitive applicants will have mostly As & Bs and have completed at least one class in each of our four core areas (English, mathematics, lab science, and social science). Students who meet those criteria are viewed as strong candidates for admission. [Apply online to JMU](#) by March 1 for Fall or October 15 for Spring.

**JMU General Education Requirements:** In accordance with the State Policy on Transfer, students who transfer to James Madison University from a Virginia Community College will have satisfied James Madison University's General Education requirements if they have earned an Associate of Arts or Associate of Science degree. Students earning the Associate of Science: Biotechnology at VWCC will receive a waiver of General Education requirements at JMU after submitting a transcript showing their associate degree has been conferred. Students who transfer with a small number of associate degree requirements not yet completed may request a consultation with a [JMU Next Transfer Advisor](#) to determine whether they can complete the associate degree by transferring coursework completed at JMU back to their community college. Students should be aware that some courses required for the associate degree may not be offered at JMU.

**JMU Graduation Requirements:** JMU requires that students earn a minimum of 120 credit hours to earn the Bachelor of Science degree in Biotechnology. Of these, at least 60 must be completed at a 4-year university, and at least 30 must be completed at JMU. For any course to transfer, it must be completed with a grade of "C" or higher. Students pursuing a Bachelor of Science degree must maintain at least a 2.0 GPA overall and in their major coursework at JMU. Additional information about graduation requirements is available in the JMU Undergraduate Catalog.

**Terms of Agreement:** The Agreement, which will be implemented beginning in Fall 2025, will be annually reviewed, and revised as appropriate, beginning in Fall 2026. Course requirements, names and numbering are subject to annual review to ensure compliance with any changes at either institution.

The undersigned have reviewed and agreed that James Madison University (JMU) and Virginia Western Community College (VWCC) should enter into this Articulation Agreement.

Agreed by the parties on the 19<sup>th</sup> day of May 2025.

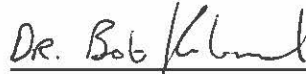
**Virginia Western Community College**



Dr. Elizabeth Wilmer

Vice President of Academic and Workforce Solutions

**James Madison University**



Dr. Bob Kolvoord

Interim Provost and Senior Vice President  
Academic Affairs