



Biology Education

Annual Assessment 2017-2018

ANNUAL ASSESSMENT 17-18**3****BIOLOGY EDUCATION****3**

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Biology Education

Program Profile

Program Mission Statement

Please insert your program mission statement here

The Education Division of William Woods University believes that all students deserve to have effective, caring educators who are knowledgeable in content, management, interpersonal skills, and the teaching/learning process. To prepare these educators, our division believes both theory and applications should be the basis for our curriculum, and each educator should be assessed throughout the program, using a defined set of performance standards. Since we believe learning is a lifelong process, we encourage our program completers to continue with professional development throughout their careers.

Program Data

Delivery Method

Traditional On Campus (selected)
Online
Hybrid

Students Majors 2016-17

3

Student Majors 2017-18

1

Concentrations 2016-17

If your program contains concentrations, please list the concentrations and the number of students identified within each concentration.

none

Concentrations 2017-18

If your program contains concentrations, please list the concentrations and the number of students identified with each concentration.

none

Student Demographics

Program goals for student retention, persistence and degree completion are? What do the persistence numbers mean to the faculty in the program? Are your persistence numbers what you expected? If not, how could the numbers be improved? What is the optimal enrollment for the program?

Beginning in Fall of 2013, changes were being made to state accreditation measures that involved the changing of academic standards and curriculum adjustments. With these changes also came changes to the state certification testing and cycles. During this time, education as a profession has been down across the nation. Here at William Woods, we have seen a moderate decrease in our overall numbers. Attention has now been given to students that are not meeting early benchmarks for success and being counseled into other programs earlier. We are also seeing a slight increase in transfer students from a variety of places, including MACC, University of Missouri, and a few other institutions. This has been very common in Teacher Education Programs across the state, with some even seeing 10% decreases. One of the goals that we have as a department revolves around working with students in multiple areas, including test preparation, comradery, and more emphasis on hands on learning. We have begun plans to implement test preparation sessions for students on a monthly basis, creation of a common space for education students to be together for meetings and work on assignments together, a creation of a mentor/mentee program for seniors to work with younger students to help them navigate the program easier, and the creation of more outside tutoring and classroom experience work in order to get hands on experience. We will graduate 1 next semester. This program has traditionally been a very low enrolled program and discussions need to be had to increase its enrollment. The addition of a full time or part time faculty member who specializes in secondary methods and education would be optimal if this program is to grow.

Is the Program Externally Accredited

Yes (selected)
No

External Accreditation

Name the Accrediting Agency or entity including the last review/approval. Is there an accrediting body for the field of study? If yes, what is the name of the group. Is the program seeking accreditation? If no, why?

This program was just officially reaccredited by the Department of Elementary and Secondary Education on August 1st. We will be seeking Council for Accreditation of Educator Preparation (CAEP) in the fall of 2018. This will be the first time our undergraduate programs have attempted National Accreditation.

Program Assessment

Standard/Outcome

Identifier	Description
WWU2016.1	Major Field Competence: Students will demonstrate excellence in an academic or professional discipline, and engage in the process of academic discovery.
WWU2016.2	Ethics: Students will exhibit values and behaviors that address self- respect and respect for others that will enable success and participation in the larger society.
WWU2016.3	Self-Liberation: Students will develop an honest understanding and appreciation of themselves and others resulting in an ability to make individual decisions.
WWU2016.4	Lifelong Education: Students will possess an intellectual curiosity and desire for continual learning both within and beyond formal education in preparation for participation in a global society.

Additional Standards/Outcomes

Identifier	Description
EDU-BIO.1	Understand the practices of scientific inquiry and engineering design.
EDU-BIO.2	Understand crosscutting concepts in the sciences and engineering.
EDU-BIO.3	Understand the relationship between science, technology, and human activity in a global context.
EDU-BIO.4	Understand the chemistry of living systems.
EDU-BIO.5	Understand the cell structure, function, and bioenergetics.
EDU-BIO.6	Understand molecular genetics.
EDU-BIO.7	Understand patterns and processes of inheritance.
EDU-BIO.8	Understand the mechanisms of biological evolution.
EDU-BIO.9	Understand the scientific explanations and evidence for the history of life on Earth.
EDU-BIO.10	Understand the structures and functions of organisms and their life cycles.
EDU-BIO.11	Understand how organisms obtain, store, and use energy and matter to maintain homeostasis.
EDU-BIO.12	Understand populations and communities.
EDU-BIO.13	Understand ecosystems and biomes.
EDU-BIO.14	Understand the effects of human activities on the biosphere.

MO-SPE-TC.1C5	Diverse Social and Cultural Perspectives: The candidate demonstrates understanding of diverse cultural perspectives and recognizes the potential for bias in his/her representation of the discipline.
MO-SPE-TC.2	Student, Learning Growth and Development: The teacher understands how students learn, develop, and differ in their approaches to learning. The teacher provides learning opportunities that are adapted to diverse learners and support the intellectual, social, and personal development of all students.
MO-SPE-TC.2C1	Cognitive, Social, Emotional and Physical Development: The teacher candidate knows and identifies child/adolescent development stages and can apply them to students.
MO-SPE-TC.2C2	Student Goals: The teacher candidate demonstrates the ability to set short- and long-term goals, organize, implement, and self-reflect.
MO-SPE-TC.2C3	Theory of Learning: The teacher candidate applies knowledge of the theory of learning.
MO-SPE-TC.2C4	Differentiated Lesson Design: The teacher candidate recognizes diversity and the impact it has on education.
MO-SPE-TC.2C5	Prior Experiences, Learning Styles, Multiple Intelligences, Strengths and Needs: The teacher candidate is aware that students' prior experiences, learning styles, multiple intelligences, strengths and needs impact learning.
MO-SPE-TC.2C6	Language, Culture, Family and Knowledge of Community Values: The teacher candidate shows an understanding that instruction should be connected to students' prior experiences and family, culture, and community.
MO-SPE-TC.3	Curriculum Implementation: The teacher recognizes the importance of long-range planning and curriculum development. The teacher develops, implements, and evaluates curriculum based upon standards and student needs.
MO-SPE-TC.3C1	Implementation of Curriculum Standards: The teacher candidate knows and understands the components and organization of an effective curriculum, is able to create aligned learning experiences. The candidate can locate national and state standards and align to learning outcomes.
MO-SPE-TC.3C2	Lessons for Diverse Learners: The teacher candidate knows and understands learning styles and learning theory and selects appropriate strategies for addressing individual student needs.
MO-SPE-TC.3C3	Instructional Goals and Differentiated Instructional Strategies: The teacher candidate knows and understands the concept of differentiated instruction and short- and long-term instructional goal planning to meet student needs.

MO-SPE-TC.4	Critical Thinking: The teacher uses a variety of instructional strategies to encourage students??? development and critical thinking, problem solving, and performance skills including instructional resources.
MO-SPE-TC.4C1	Instructional Strategies Leading to Student Engagement in Problem-Solving and Critical Thinking: The teacher candidate demonstrates knowledge and its application of researched based models of critical thinking and problem solving and identifies and distinguishes between various types of instructional strategies and appropriate resources.
MO-SPE-TC.4C2	Appropriate Use of Instructional Resources to Enhance Student Learning: The teacher candidate demonstrates knowledge and its application of current instructional resources and how they benefit the teaching and learning process.
MO-SPE-TC.4C3	Cooperative, Small Group and Independent Learning: The candidate demonstrates knowledge and its application of multiple strategies for effective student engagement.
MO-SPE-TC.5	#5- Positive Classroom Environment: The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages active engagement in learning, positive social interaction and self-motivation.
MO-SPE-TC.5C1	Classroom Management, Motivation, and Engagement: The teacher candidate recognizes the importance of the relationship between classroom management, motivation, and engagement strategies and techniques.
MO-SPE-TC.5C2	Management of Time, Space, Transitions, and Activities: The teacher candidate recognizes the necessity of managing time, space, transitions, and activities.
MO-SPE-TC.5C3	Classroom, School, and Community Culture: The teacher candidate recognizes and identifies the influence of classroom, school and community culture on student relationships and the impact on the classroom environment and learning.
MO-SPE-TC.6	Effective Communication: The teacher models effective verbal, nonverbal, and media communication techniques with students, colleagues and parents to foster active inquiry, collaboration, and supportive interaction in the classroom.
MO-SPE-TC.6C1	Verbal and Nonverbal Communication: The teacher candidate develops the ability to use effective verbal, nonverbal and communication techniques.
MO-SPE-TC.6C2	Sensitivity to Culture, Gender, Intellectual and Physical Differences: The teacher candidate develops sensitivity to differences in culture, gender, intellectual and physical ability in classroom communication and in responses to students??? communications.
MO-SPE-TC.6C3	Learner Expression in Speaking, Writing, and Other Media: The teacher candidate develops the ability to facilitate learner expression in speaking, writing, listening, and other media.
MO-SPE-TC.6C4	Technology and Media Communication Tools: The candidate develops skills in using a variety of media communication tools.
MO-SPE-TC.7	Student Assessment and Data Analysis: The teacher understands and uses formative and summative assessment strategies to assess the learner???s progress, uses assessment data to plan ongoing instruction, monitors the performance of each student and devises instruction to enable students to grow and develop.
MO-SPE-TC.7C1	Effective Use of Assessments: The teacher candidate describes, develops, analyzes and implements formal and informal assessments.
MO-SPE-TC.7C2	Assessment Data to Improve Learning: The teacher candidate demonstrates an understanding of how assessment data can be accessed and appropriately used to improve learning activities.
MO-SPE-TC.7C3	Student- Led Assessment Strategies: The teacher candidate describes and analyzes a variety of self and peer assessment strategies, can explain the purpose of such strategies, understands the need to prepare students for the demands of particular assessment formats, can set their own learning goals and is able to teach students to set learning goals.
MO-SPE-TC.7C4	Effect of Instruction on Individual / Class Learning: The teacher candidate develops a knowledge base of assessment strategies and tools, including how to collect information by observing classroom interactions, higher order questioning, and analysis, and the effect of class instruction on individual and whole class learning.
MO-SPE-TC.7C5	Communication of Student Progress and Maintaining Records: The teacher candidate explains ethical and legal implications of confidentiality of student records and can describe and analyze strategies to communicate student progress to students, families, colleagues and administrators.
MO-SPE-	Collaborative Data Analysis: The teacher candidate demonstrates an understanding of the department/grade

TC.7C6	level/school data analyses process.
MO-SPE-TC.8	Professionalism: The teacher is a reflective practitioner who continually assesses the effects of choices and actions on others. The teacher actively seeks out opportunities to grow professionally in order to improve learning for all students.
MO-SPE-TC.8C1	Self- Assessment and Improvement: The teacher candidate reflects on teaching practices to refine his/her instructional process.
MO-SPE-TC.8C2	Professional Learning: The teacher candidate identifies and reflects on the array of professional learning opportunities including those offered by educator preparation programs, school districts, professional associations, and/or other opportunities.
MO-SPE-TC.8C3	Professional Rights, Responsibilities, and Ethical Practices: The teacher candidate is aware of the influence of district policies and school procedures on classroom structure.
MO-SPE-TC.9	Professional Collaboration: The teacher has effective working relationships with students, parents, school colleagues and community members.
MO-SPE-TC.9C1	Induction and Collegial Activities: The teacher candidate observes and reflects upon the importance of collegial activities designed to build a shared mission, vision, values and goals, participates in collaborative curriculum and staff development meetings at their school site, and demonstrates the ability to collaborate with his/her cooperating teacher and supervisor/or instructor to establish relationships in the school, district and community.
MO-SPE-TC.9C2	Collaborating to Meet Student Needs: The teacher candidate understands school-based systems designed to address the individual needs of students and works with his/her cooperating teacher and/or supervisor to engage with the larger professional community and with others across the system to identify and provide needed services to support individual learners.
MO-SPE-TC.9C3	Cooperative Partnerships in Support of Student Learning: The teacher candidate reflects on the importance of developing relationships with students, families and communities in support of student learning and seeks opportunities to develop cooperative partnerships in support of student learning and well-being.

General Education Alignment to Program

How do the General Education criteria align with the Program Objectives? What courses within your program build upon skills learned in general education courses (please list the program course and the general education criteria). The General Education clusters are: Critical Analysis, Creative Expression, Quantitative Inquiry, and Society & the Individual. See attached for more detailed breakdown.

Students must satisfactorily pass the Missouri General Education Assessment (MoGEA) before applying for admission to Education Program at WWU. This is a DESE requirement that assesses proficiency in skills learned in general education classes specifically in these areas:

MoGEA SubTest	General Education Course Covering Content
Writing	ENG 101 and 102
Mathematics	MAT 114 and 231 (elementary, middle, SPED only)
Social Science/Science	LGS 105, HIS 101 or 102, HIS 103 or 104, SCI 130/131 or BIO 105/106, GEO 201 or 202, Critical Thinking course
Reading Comprehension	Any coursework in meaning, C and A, diversity, and value adds to this content area. All courses require students to read for understanding as well as interpret real world text into meaningful learning opportunities.

Curriculum Map

A - Assessed
R - Reinforced
I - Introduced
M - Master

Biology Content Knowledge Education(Imported)

	BIO 114	BIO 115	BIO 124	BIO 125	BIO 209	BIO 231	BIO 232	SCI 205	SCI 230
EDU-BIO.4 Understand the chemistry of living systems.									
EDU-BIO.5 Understand the cell structure, function, and bioenergetics.									
EDU-BIO.6 Understand molecular genetics.									
EDU-BIO.7 Understand patterns and processes of inheritance.									
EDU-BIO.8 Understand the mechanisms of biological evolution.									
EDU-BIO.9 Understand the scientific explanations and evidence for the history of life on Earth.									

	PHY 201	PHY 202	CHM 114	CHM 115	CHM 124	CHM 125
EDU-BIO.4 Understand the chemistry of living systems.						
EDU-BIO.5 Understand the cell structure, function, and bioenergetics.						
EDU-BIO.6 Understand molecular genetics.						
EDU-BIO.7 Understand patterns and processes of inheritance.						
EDU-BIO.8 Understand the mechanisms of biological evolution.						
EDU-BIO.9 Understand the scientific explanations and evidence for the history of life on Earth.						

Pre/Post Assessment

	EDU 492
MO-SPE-TC.1C1 Content knowledge and Academic Language: The teacher candidate demonstrates knowledge of the discipline applicable to the certification area(s) sought as defined by the Subject Competencies for Beginning Teachers in Missouri. The candidate knows the academic language of his/her discipline.	A
MO-SPE-TC.2 Student, Learning Growth and Development: The teacher understands how students learn, develop, and differ in their approaches to learning. The teacher provides learning opportunities that are adapted to diverse learners and support the intellectual, social, and personal development of all students.	A
MO-SPE-TC.3 Curriculum Implementation: The teacher recognizes the importance of long-range planning and curriculum development. The teacher develops, implements, and evaluates curriculum based upon standards and student needs.	A
MO-SPE-TC.4 Critical Thinking: The teacher uses a variety of instructional strategies to encourage students??? development and critical thinking, problem solving, and performance skills including instructional resources.	A
MO-SPE-TC.5 #5- Positive Classroom Environment: The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages active engagement in learning, positive social interaction and self-motivation.	A
MO-SPE-TC.6 Effective Communication: The teacher models effective verbal, nonverbal, and media communication techniques with students, colleagues and parents to foster active inquiry, collaboration, and supportive interaction in the classroom.	A
MO-SPE-TC.7 Student Assessment and Data Analysis: The teacher understands and uses formative and summative assessment strategies to assess the learner???s progress, uses assessment data to plan ongoing instruction, monitors the performance of each student and devises instruction to enable students to grow and develop.	A
MO-SPE-TC.8 Professionalism: The teacher is a reflective practitioner who continually assesses the effects of choices and actions on others. The teacher actively seeks out opportunities to grow professionally in order to improve learning for all students.	A
MO-SPE-TC.9 Professional Collaboration: The teacher has effective working relationships with students, parents, school colleagues and community members.	A

Assessment Findings**Assessment Findings for the Assessment Measure level for Biology Content Knowledge Education(Imported)****Assessment Findings for the Assessment Measure level for Pre/Post Assessment****Analysis of the Assessment Process**

Describe your assessment process; clearly articulate how the program is using course work and or assessment day activities for program assessment. Note any changes that occurred to that process since the previous year. Discuss what activities were successful at assessment and which ones were not as helpful and why. Please include who met to discuss the changes (unless you are a program of one person) and when you met. – Include a discussion on the process for collection and analysis of program data.

Starting January 1, 2017, elementary teacher candidates are required to complete an assessment in which they are given a scenario and must create a lesson plan prior to being admitted to the Teacher Education Program. This is a change from a collection of individual assignments the semester before. There are not cut scores for this assessment, but the data is used to assess the program and to identify strengths and weaknesses. They are again assessed in the same

format upon application into the Student Teaching Program. Results are again analyzed for strengths and weaknesses and the student's growth is measured in particular content areas. These strengths and weaknesses were discussed in department meetings and faculty decided to tweak the assessment to include more detailed instructions, common language, and include more explicit instruction in differentiation, assessment, and critical thinking. In addition, teacher candidates take practice tests during assessment days to provide information for the department as well as for the students themselves to plan study sessions before taking the MoGEA and/or MoCA assessments. Faculty met and discussed results from assessment days and determined that we should continue Wise Owls (tutorials) and that we should split EDU 318 Integrated Curriculum II into 2 separate courses which focus on Social Science and Science separately.

Teacher candidates are also assessed by DESE (certification organization) through the MEGA Assessments. These include: MEP; MoGEA; MoCA; MEES; and through self-assessment in the PCPs. These are addressed in the overall Education Report which includes all education majors and includes the nine Mo Teaching Standards.

Improvement Narrative List

Assessment Findings for the Assessment Measure level
No improvement narratives have been added.

Program Activities

Student Performance Review

Describe the department assessment day activities if not already described previously. Please articulate the nature of the assessments are conducted, explain the process for assessment that happens on these two days. Include the schedule of assessment day for your program. What does the data and outcomes tell you? What changes will you make as a result of the data? What areas are successful for the program?

*Please see narrative in core education (elementary) program assessment.

Student Performance Review Schedule

Upload the program schedule for students during Performance Reviews.

Senior Showcase

Describe program Senior Showcase activities if not detailed previously in the report? What benefit does the program gain from the activities? What if any assessment of students happens during this event? What changes if any will occur due to what is learned by faculty on Senior Showcase?

*Please see narrative in core education (elementary) program assessment.

Assessment Rubrics

Upload rubrics used for Senior Showcase or Student Performance Reviews for student assessment.

Service Learning

Does the Program include projects/ course content that uses the philosophy of service learning?

Yes (selected)

No

Service Learning Component

If so, how is service learning infused in the coursework within your department? Is service or community engagement in

the program mission? Describe the Service Learning Activities that your students and department engaged in this past year. How did the activities improve student learning? How did the activities benefit the community?

*Please see narrative in core education (elementary) program assessment.

LEAD Events

Highlight lead events sponsored by program faculty that are connected to program or general education objectives for the past academic year. Include a total number of lead events program faculty sponsored.

*Please see narrative in core education (elementary) program assessment.

Student Accomplishments

Highlight special examples of student successes in the field (academic: mentor-mentee, conference presentations, competitive internship, journal acceptance; extra-curricular: horse show championship, art exhibit). This is for any accomplishments that a student achieved outside of course work or the normal expectations of student success.

*Please see narrative in core education (elementary) program assessment.

Faculty Accomplishments

Highlight special examples of faculty success in the profession/field/content area. This is for any accomplishment of a faculty activity/research/professional nature.

	3.00 Assessment Reflects Best Practices	2.00 Assessment Meets the Expectations of the University	1.00 Assessment Needs Development	0.00 Assessment is Inadequate	N/A
Learning Objectives weight: 1.000	✓ • Detailed, measurable program learning objectives • Objectives are shared with students and faculty	✓ • Measurable program learning objectives. • Learning objectives are available to students.	✓ • Program learning objectives are identified and are generally measurable	✓ • Program learning objectives are not clear or measurable	✓ N/A
Comment:	The assessment objectives are specific to the Education program. They are pulled in from the Department of Education, but it is not clear that they are implemented in the science courses listed in the curriculum.				
Assessment Measures weight: 1.000	✓ • Multiple measures are used to assess a student-learning objectives. • Rubrics or guides are used for the measures. • All measurements are clearly described. • External evaluation of student learning included.	✓ • Assessment measures relate to program learning objectives. • Various measures are used to assess student learning. • Measures chosen provide useful information about student learning.	✓ • Assessment focuses on class content only. • Minimal description of how the assessment relates to the objective. • Minimal assessment measures established.	✓ • Assessment measures not connected to assessment objectives. • Assessment measures are not clear. • No assessment measures are established.	✓ N/A
Comment:	The assessment map is only completed for the Education courses; there is nothing in the report for Biology specific content. But even the education components, for EDU 492 that are marked for assessment of all objectives, lacks the description of the assignment, the benchmarks and the details on the assignment that is being used.				
Assessment Results weight: 1.000	✓ • All objectives are assessed annually, or a rotation schedule is provided. • Data are collected and analyzed to show learning over time. • Standards for performance and gaps in student learning are clearly identified.	✓ • Most objectives assessed annually. • Data collected and analyzed showing an annual snapshot of student learning. • Data are used to highlight gaps in student learning. • Some data from non-course based content.	✓ • Data collected for at least one program objective. • Data collection is incomplete. • Gaps in student learning not identified. • Lacking external data to support course data.	✓ • Learning objectives are not routinely assessed. • Routine data is not collected. • No discussion on gaps in student learning. • No use of external data to support student learning. • Assessment data not yet collected.	✓ N/A
Comment:					
Faculty Analysis and Conclusions weight: 1.000	✓ • Data is shared that incorporates multiple faculty from the program. • Discussions on data results incorporate multiple faculty. • Opportunities for adjunct faculty to participate. • Includes input from external sources when possible.	✓ • Multiple program faculty receive assessment results. • Assessment results are discussed • Specific conclusions about student learning are made based on the available assessment results.	✓ • Minimal faculty input about results is sought • Data not used to determine success or not to the objective. • Minimal conclusions made.	✓ • Faculty input is not sought. • Conclusions about student learning are not identified. • N/A Program recently started or too few graduates to suggest any changes.	✓ N/A
Comment:	The content area and the education program need to determine how these reports are going to be completed. The current systems not working and the reports are not effective. if the curriculum needs to focus on the content assessments and only report that data then the report could be a secondary education report with the different content areas. The				
Actions to Improve Learning and Assessment weight: 1.000	✓ • All assessment methods, timetable for assessing, and evaluating the effectiveness modifications are included. • Changes to assessment are inclusive of multiple faculty. • Description of changes is detailed and linked to assessment results.	✓ • More than one change to assessment is proposed, timetable for assessment, and evaluating the change is provided. • Changes to assessment measures is highlighted. • Changes are realistic, with a good probability of improving learning or assessment.	✓ • At least one change to improve learning or assessment is identified. • The proposed action(s) relates to faculty conclusions about areas for improvement. • Adjustments to the assessment are proposed but not clearly connected to data	✓ • Lacking actions to improve student learning. • Actions discussed lack supportive data. • Lacking discussion of the effectiveness of the assessment plan	✓ N/A
Comment:					