Developmental Studies Student Learning Report

Revised May 2021

Department of Mathematics & Physical Sciences

Developmental Science

For 2022-2023 Academic Year

PART 1

Developmental Studies Mission and Student Learning Outcomes

A. State the school, department, and development studies missions.

University Mission	School Mission	Department Mission	Developmental Studies Mission
Our mission is to ensure students develop the skills and knowledge required to achieve professional and personal goals in dynamic local and global communities.	Central to the mission of the School of Arts and Science is the preparation of students to achieve professional and personal goals in their respective disciplines and to enable their success in dynamic local and global communities. Seven departments comprise this School, the Departments of Biology, Communications, English and Humanities, Fine Arts, History and Political Science, mathematics and Physical Sciences, and Psychology and Sociology. These departments pledge to deliver existing and newly developed programs that meet student demands, and to be responsive to the evolving culture of academia in general and the sciences in particular. Our Strategy is to foster an academic setting of diverse curricula that inherently incorporates an	The mission of the Department of Biology at Rogers State University is to support students in their pursuit of knowledge in biology and life science. Our purposes include increasing the student's critical thinking and reasoning abilities, increasing the student's ability to interpret and understand his/her world, and helping them serve as a resource for the community.	Our mission in Developmental Education is to ensure that skill deficient students develop the math and science skills necessary to be successful in their college-level classes to promote their future personal and professional success in their local and global communities.

University Mission	School Mission	Department Mission	Developmental Studies Mission
	environment of service and collegiality.		

B. Align school purposes, department purposes, and developmental studies learning outcomes with the appropriate University commitments.

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
To provide quality associate, baccalaureate, and graduate degree opportunities and educational experiences which foster student excellence in oral and written communications, scientific reasoning and critical and creative thinking.	The School will offer developmental courses that will prepare students for college careers that will enhance their quality of life. This will be accomplished by honing and developing analytical and communication skills.	The Biology Department will provide a remedial course to provide knowledge of basic concepts and principles of physical and life sciences. This course will facilitate the student's preparation to succeed in future science course work by strengthening scientific analytical skills, creative problem solving, critical thinking and data gathering as well as process thinking.	1) Students will demonstrate mastery of scientific principles necessary for entry-level collegiate study
To promote an atmosphere of academic and intellectual freedom and respect for diverse expression in an environment of physical safety that is supportive of teaching and learning.			
To provide a general liberal arts education that supports specialized academic programs and prepares students for lifelong learning and service in a diverse society.			
To provide students with a diverse, innovative faculty dedicated to excellence in teaching, scholarly pursuits and continuous improvement of programs.			
To provide university-wide student services, activities and resources			

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
that complement academic programs.			
To support and strengthen student, faculty and administrative structures that promote shared governance of the institution.			
To promote and encourage student, faculty, staff and community interaction in a positive academic climate that creates opportunities for cultural, intellectual and personal enrichment for the University and the communities it serves.			
To assist both freshmen and transfer students through their first year at RSU in their professional and personal goals. Learners, who feel more connected at the university and supported by faculty and staff, are more successful and more satisfied with their overall college experience.			

PART 2

Revisit Proposed Changes Made in Previous Assessment Cycle

Revisit each instructional/assessment change proposed in Part 5 of the developmental studies SLR for the preceding year. Indicate whether the proposed change was implemented and comment accordingly. Any changes the department implemented for this academic year, but which were not specifically proposed in the preceding report, should also be reported and discussed here. Please note if no changes were either proposed or implemented or this academic year.

Proposed Change	Implemented? (Y/N)	Comments
1) NA **2)** **3)**	1) Y/N 2) Y/N	1) ...NA 2) ...

PART 3

Response to University Assessment Committee Peer Review

The University Assessment Committee provides written feedback on departmental assessment plans through a regular peer review process. This faculty-led oversight is integral to RSU's commitment to the continuous improvement of student learning and institutional effectiveness. UAC recommendations are not compulsory and departments may implement them at their discretion. Nevertheless, respond below to each UAC recommendations from last year's peer review report. Indicate whether the recommendation was implemented and comment accordingly. Please indicate either if the UAC had no recommendations or if the program was not subject to review in the previous cycle.

Peer Review Feedback	Implemented (Y/N)	Comments
NA	NA	NA

PART 4

Evidence of Student Learning

Evidence and analyze student progress for each of the developmental studies student learning outcomes (same as listed in Part I B above). See the *Appendix* for a detailed description of each component. Note: The table below is for the first student learning outcome. Copy the table and insert it below for each additional outcome. SLO numbers should be updated accordingly.

A. Student Learning Outcome					
SLO #1: 1. Students will demonstrate mastery of scientific principles necessary for entry-level collegiate study.					
B. Assessment Measure	**C. Performance Standard**	**D. Sampling Method**	**E. Sample Size (n)**	**F. Results**	**G. Standard Met (Y/N)**
1a. Post-test in Science Proficiency	1a. 65% of the students taking both the pretest and the posttest will score at least 65% on the posttest.	1a. Pre- and Post-test data was collected from on-ground and online sections in Summer 2022, Fall-2022 , and Spring 2023. Of 51 students enrolling, only 24 students completed	1a. BIOL0123 n=24	1a. 24/24 students (100.0%) scored 65% or higher on the post test. This is a significant increase from the previously measured year. Of the 51 students enrolled, several students did not complete the pretest (n=28). This group did not have the pretest administered. However, the average of their post-test scores (68.4%) was above the minimum expectation	1a. Y

A. Student Learning Outcome					
SLO #1: 1. Students will demonstrate mastery of scientific principles necessary for entry-level collegiate study.					
B. Assessment Measure	**C. Performance Standard**	**D. Sampling Method**	**E. Sample Size (n)**	**F. Results**	**G. Standard Met (Y/N)**
		both the pre and post test.		(65%) Most students demonstrated notable increase between pre and post test scores.	
1b. Pre/Post Test in Science Proficiency	1b. 70% of the students taking both the pretest and the posttest in Science Proficiency will improve at least 30%.	1b. Pre- and Post-test data was collected from on-ground and online sections in Summer 2022, Fall-2023 , and Spring 2023. Of 51 students enrolling, only 24 students completed both the pre and post test.	1b. BIOL 0123 n=24	1b. 7/24 students (29.1%) improved their test score by at least 30%.	1b. N
H. Conclusions					
...1a/1b. Student attendance suffered as a result of CoVid-19 impacts on education. 14/24 students did not complete the course. Of those that did complete BIOL 0123, they demonstrated significant improvement over the student performance of the previous year.					

PART 5

Proposed Instructional or Assessment Changes

Learning outcomes assessment can generate actionable evidence of student performance that can be used to improve student success and institutional effectiveness. Knowledge of student strengths and weakness gained through assessment can inform faculty efforts to improve course instruction and program curriculum. Below discuss potential changes the department is considering which are aimed at improving student learning or the assessment process. Indicate which student learning outcome(s) will be affected and provide a rationale for each proposed change. These proposals will be revisited in next assessment cycle.

Proposed Change	Applicable Learning Outcomes	Rationale and Impact
Implement guidelines for the instructors to facilitate data collection.	NA	Better data and/or more consistent collection of data will facilitate our review of student progress.

Proposed Change	Applicable Learning Outcomes	Rationale and Impact
The department head will review the content and instructional methods of the instructors.	This should improve SLO #1.	The Biology department was able to provide most sections of the course with the same instructor. This allowed us to maintain consistency from section to section. SLO #1 did show improvement.

PART 6
Summary of Assessment Measures

A. How many different assessment measures were used? Two measures per course

B. List the direct measures (see appendix): (1) Percentage of students passing the posttest at 65% or higher and (2) the percentage of students improving 30% from pretest to posttest in each of the three courses.

C. List the indirect measures (see appendix): Student's success in subsequent college-level coursework.

PART 7
Faculty Participation and Signatures

A. Provide the names and signatures of all full time and adjunct faculty who contributed to this report.

Faculty Name	Assessment Role	Signature
Rance Kingfisher	Collected Pre/Post-test data (Temporary Full-Time) Instructor	Not available
Dr. Jerry Bowen	Analyzed and Reviewed BIOL 0123 data Completed report	19 May 2023

D. Reviewed by:

Titles	Name	Signature	Date
Department Head	Dr. Jerry Bowen		19 May 2023
Dean	Dr. Keith Martin		

Appendix

Student Learning Outcome

Student learning outcomes are the observable or measurable results that are expected of a student following a learning experience. Learning outcomes may address knowledge, skills, attitudes, or values that provide evidence that learning has occurred. They can apply to a specific course, a program of study, or an institution. Outcomes should be worded in language that clearly implies a measurable behavior or quality of student work. Outcomes should also include Bloom's action verbs appropriate to the skill level of learning expected of students.

Examples:

Students will be able to apply principles of evidence-based medicine to determine clinical diagnoses and implement acceptable treatment modalities.

Students will be able to articulate cultural and socioeconomic differences and the significance of these differences for instructional planning.

Assessment Measure

An assessment measure is a tool or instrument used to gather evidence of student progress toward an established learning outcome. Every program learning outcome should have at least one appropriate assessment measure. Learning outcomes are frequently complex, however, and may require multiple measures to accurately assess student performance. Assessment plans should try to incorporate a combination of direct and indirect assessment measures. Direct provide concrete evidence of whether a student has command of a specific subject or content area, can perform a certain task, exhibits a particular skill, demonstrates a certain quality in their work, or holds a particular value. Because direct measures tap into actual student learning, it is often viewed as the preferred measure type. Indirect measures assess opinions or thoughts about the extent of a student's knowledge, skills, or attitudes. They reveal characteristics associated with learning, but they only imply that learning has occurred. Both types of measures can provide useful insight into student learning and experiences in a program. Each also has unique advantages and disadvantages in terms of the type of data and information it can provide. Examples of common direct and indirect measures are listed below.

Direct Measures

- Comprehensive exams
- Class assignments
- Juried review of performances and exhibitions
- Internship or clinical evaluations
- Portfolio evaluation
  Pre/post exams
- Third-party exams such as field tests, certification exams, or licensure exams
- Senior thesis or capstone projects

Indirect Measures

- Graduate exit interviews
- Focus group responses
- Job placement statistics
- Graduate school placement statistics
- Graduation and retention rates
- Student and alumni surveys that assess perceptions of the program
- Employer surveys that assess perceptions of graduates
- Honors and awards earned by students and alumni.

Performance Standard

A performance standard is a clearly-defined benchmark that establishes the minimally-acceptable level of performance expected of students for a particular measure.

Examples:

At least 70% of students will score 70% or higher on a comprehensive final exam.

At least 75% of students will earn score a "Proficient" or higher rating on the Communicate Effectively rubric.

Sampling Method

Sampling method describes the methodology used for selecting the students that were assessed for a given measure. In some cases, such as most course-embedded measures, it is possible to assess all active enrolled students. In other cases, however, it is not feasible to measure the population of all potential students. In these cases, it is important that a well-designed sampling scheme be used to ensure

the sample of students measured is an unbiased representation of the overall population. Where multiple instructors teach a particular course, care should be taken to assess students across all instructors, including adjuncts.

Examples:
All students enrolled in BIOL 4801 Biology Research Methods II
All majors graduating in the 2016-17 academic year.

Sample Size
Sample size is the number of students from which evidence of student learning was obtained for a given assessment measure.

Results
Results are an analytical summary of the findings arising from the assessment of student performance for a particular assessment measure. Typical presentation includes descriptive statistics (mean, median, range) and score frequency distributions.

Standard Met?
This is a simple yes/no response that indicates whether the observed level of student performance for a particular measure meets or exceeds the established standard. An N/A may be used where circumstances prevented the department from accurately assessing a measure.

Conclusion
The conclusion is a reflective summary and determination of the assessment results obtained for a specific learning outcome. Questions to consider in this section include the following:

- Does the assessment evidence indicate the learning outcome is being satisfactorily met?
- Where multiple measures are used for a single outcome, do the results present a consistent or contradictory pattern?
- What are the most valuable insights gained from the assessment results?
- What strengths and weaknesses in student learning do the results indicate?
- What implications are there for enhancing teaching and learning?
- How can the assessment process be improved?