

Developmental Studies Student Learning Report

Revised August 2017

Department of Mathematics & Physical Sciences

Developmental Math and Science

For 2018-2019 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 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. Our strategy is to foster an academic setting of diverse curricula that inherently incorporates an environment of service and collegiality.	The mission of the Department of Mathematics and Physical Sciences at Rogers State University is to support students in their pursuit of knowledge in mathematics and physical science.	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.

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 offers innovative degrees, which focus upon developing skills in oral and written communication, critical thinking, creativity, empirical and evidenced-based inquiry, experimental investigation and theoretical explanation of natural phenomena, and innovative technology.	<p>1. To increase the student's critical thinking and reasoning abilities.</p> <p>2. To increase the student's understanding and appreciation of the physical world, and the ability to apply this understanding in his/her personal and professional life.</p> <p>3. To increase the student's awareness of the benefits of incorporation of technology into Science and Math studies.</p> <p>4. To increase the student's ability to interpret and understand his/her world mathematically.</p>	1. Students will demonstrate mastery of mathematics skills 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.	The School educates its majors to think independently and have the knowledge, skills and vision to work in all types of situations and careers and communicate with all types of people.		

To provide a general liberal arts education that supports specialized academic programs and prepares students for lifelong learning and service in a diverse society.	The School offers general education courses of high quality and purpose that provide a foundation for life-long learning.	5. To prepare a student to matriculate into a four-year degree program in math or science-related fields or graduate.	
To provide students with a diverse, innovative faculty dedicated to excellence in teaching, scholarly pursuits and continuous improvement of programs.	The School fosters a community of scholars among the faculty and students of the institution.		
To provide university-wide student services, activities and resources 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.	The School will offer and promote artistic, scientific, cultural, and public affairs events on the campus and in the region.	6. To serve as a resource for the community, utilizing the expertise of the faculty.	

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
A corequisite model for college gateway courses College Algebra, MATH 1513 and Math. for Critical Thinking, MATH 1503 that reduces the number of traditional developmental sections has been introduced. This new model uses concurrent Math Foundations classes to ensure that skill-deficient students develop the math and science skills necessary to be successful in their college-level classes. Assessment data will be collected from Fall 2017 and reported in the next report for these Foundations classes.	Y	Change is expected to increase the student success in college gateway courses, College Algebra and Math. For Critical Thinking.

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
No changes were recommended; was not peer-reviewed.		

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: Students will demonstrate mastery of mathematics skills 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. Posttest in Elementary Algebra Plus with four course objective areas of Order of Operations, Algebraic Expressions, Algebraic Equations, and Applications.	1a. 65% of the students taking both the pretest and the posttest will score at least 60% on the posttest.	1a. Students who took the posttest in day, evening, and online sections taught by both fulltime and adjunct faculty on all three campuses in fall and spring semesters.	1a.177 Students (Online-45 On campus-132)	1a. Posttest results: <table><tr><th>% score</th><th>#</th><th>%</th></tr><tr><td>< 20</td><td>1</td><td>1</td></tr><tr><td>21-30</td><td>0</td><td>0</td></tr><tr><td>31-40</td><td>4</td><td>2</td></tr><tr><td>41-50</td><td>7</td><td>4</td></tr><tr><td>51-59</td><td>7</td><td>4</td></tr><tr><td>60-69</td><td>36</td><td>20</td></tr><tr><td>70-79</td><td>38</td><td>21</td></tr><tr><td>80-89</td><td>51</td><td>29</td></tr><tr><td>90-100</td><td>33</td><td>19</td></tr></table>	% score	#	%	< 20	1	1	21-30	0	0	31-40	4	2	41-50	7	4	51-59	7	4	60-69	36	20	70-79	38	21	80-89	51	29	90-100	33	19	1a. Y
% score	#	%																																	
< 20	1	1																																	
21-30	0	0																																	
31-40	4	2																																	
41-50	7	4																																	
51-59	7	4																																	
60-69	36	20																																	
70-79	38	21																																	
80-89	51	29																																	
90-100	33	19																																	

1b. College Math Foundations taken in tandem with Math for Critical Thinking contains course objectives designed to develop critical thinking through mathematical concepts and learn about current real-world mathematical applications.	1d. Students will score 70% or better on average on 10 quizzes.	1d. Students who took 10 quizzes in day or evening sections taught by fulltime and adjunct faculty on all three campuses in fall and spring semesters.	1d. 50 Students	1d. Pass/Fail results: 40 passed – 80%	1d. Y																														
1c. Pre/Post Test Elementary Algebra Plus with four course objective areas of Order of Operations, Algebraic Expressions, Algebraic Equations, and Applications.	1c. 70% of the students taking both the pretest and the posttest in Elementary Algebra Plus will improve at least 30%.	1c. Students who took the posttest in day, evening, and online sections taught by both fulltime and adjunct faculty on all three campuses in fall and spring semesters.	1c. 177 Students (Online-45 On campus-132)	1c. Pretest results: <table> <tr> <th>% score</th> <th>#</th> <th>%</th> </tr> <tr> <td>< 20</td> <td>25</td> <td>14</td> </tr> <tr> <td>21-30</td> <td>44</td> <td>25</td> </tr> <tr> <td>31-40</td> <td>56</td> <td>32</td> </tr> <tr> <td>41-50</td> <td>29</td> <td>16</td> </tr> <tr> <td>51-59</td> <td>6</td> <td>3</td> </tr> <tr> <td>60-69</td> <td>4</td> <td>2</td> </tr> <tr> <td>70-79</td> <td>5</td> <td>3</td> </tr> <tr> <td>80-89</td> <td>5</td> <td>3</td> </tr> <tr> <td>90-100</td> <td>3</td> <td>2</td> </tr> </table>	% score	#	%	< 20	25	14	21-30	44	25	31-40	56	32	41-50	29	16	51-59	6	3	60-69	4	2	70-79	5	3	80-89	5	3	90-100	3	2	1c. Y
% score	#	%																																	
< 20	25	14																																	
21-30	44	25																																	
31-40	56	32																																	
41-50	29	16																																	
51-59	6	3																																	
60-69	4	2																																	
70-79	5	3																																	
80-89	5	3																																	
90-100	3	2																																	
1d. College Algebra Foundations taken in tandem with College Algebra contains four course objective areas of Simplify Algebraic Expressions and Evaluate Numerical Expressions, Solve Linear and Quadratic Equations/Inequalities,	1d. Students will score 70% or better on average on 10 quizzes.	1d. Students who took 10 quizzes in day/evening sections taught by fulltime and adjunct faculty on all three campuses, and one online section taught by fulltime faculty, in fall and spring.	1d. 260 Students	1d. Pass/Fail results: 182 passed – 70%	1d. Y																														

Graph Linear and Quadratic Equations/Inequalities, and Solve Systems of Linear Equations/Inequalities.					
1e. Based on results in the Entry-Level Assessment Through Fall 2013. Report compiled by Office of Accountability and Academics.	1e. Students completing Elementary Algebra and enrolling in Intermediate Algebra will make a grade of C or higher at the same percentage rate or higher than those students who waive/clear remediation.	1e. Student success (A, B, C) tracked from Elementary Algebra through Intermediate Algebra for Fall 2013 students.	1e. Requiring remediation: n=73 Waived or cleared remediation: n=237	1e. 62% of the students completing Elementary Algebra made a C or higher in Intermediate Algebra in the Fall of 2013 compared to 57% of the students who made a grade of C or better in Intermediate Algebra that waived or cleared remediation requirement.	1e. Y
1f. Based on results in the Entry-Level Assessment through Fall 2013. Report compiled by Office of Accountability	1f. Students completing Int. Alg. And enrolling in College algebra (Math 1513) or Math for Critical Thinking (MATH 1503) in the next semester will make a grade of C or higher at the same percentage rate or higher than those students who waive/clear remediation.	1f. Student success (A, B, C) tracked from Intermediate Algebra through both College Algebra and Math for Critical Thinking for Fall 2013 students.	1f. Requiring remediation: MATH 1513: n=96 MATH 1503: n=7 Waived or cleared remediation: MATH 1513: n=475 MATH 1503: n=23	1f. 61% of the students completing Intermediate Algebra made a C or higher in College Algebra in fall 2013 compared to 64% of those students who made a grade of C or better that waived or cleared remediation requirement. 43% of the students completing Intermediate Algebra made a C or higher in Math for Critical Thinking in fall 2013 compared to 22% of those students who made a grade of C or better that waived or cleared remediation requirement.	1f. N

--	--	--	--	--	--

H. Conclusions

1a. Overall, 89% of the students taking both the pretest and the posttest in Elementary Algebra Plus with four course objective areas of Order of Operations, Algebraic Expressions, Algebraic Equations, and Applications made 60% or above. Campus and online sections both met the standards.

1b. Overall, 80% of the students completing College Math Foundations scored 70% or better, on average, on 10 quizzes. Campus sections met the standards. No online course at this time.

1c. Overall, 86% of the students taking both the pretest and the posttest in Elementary Algebra Plus with four course objective areas of Order of Operations, Algebraic Expressions, Algebraic Equations, and Applications improved more than 30%. Campus sections met the standards. Online sections did not meet the standards.

1d. Overall, 70% of the students completing College Algebra Foundations scored 70% or better, on average, on 10 quizzes. Campus sections met the standards. Online sections did not meet the standards.

1e. A 11-year trend continues where students remediating through Elementary Algebra improve their math skill deficiencies to such an extent that they out perform on a competitive level, students not requiring the first course in the remediation sequence.

1f. These data continue a 11-year trend for Students in College Algebra after completing Intermediate Algebra. They are consistently performing below (about 3% compared to those who waive or clear remediation.

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
Remove the pre/posttest requirement and collect data for specific chapters and/or sections that correspond with the individual SLOs. 70% of students who finish the semester will score 70% or better on selected chapters and/or sections, and will score 70% or better on chapter exams as a whole. The requirement for students to receive a 70% overall score to pass the course still stands. Students Assessment data will be collected from Fall 2019 – Spring 2020 and reported in the next report for these proposed changes.	The SLO with the corresponding chapter/section is as follows:		The change is expected to enhance our ability to gauge student learning on specific SLOs based on homework scores and overall test scores as opposed to pre/posttest scores only. This will give us a deeper understanding of where students may struggle overall and provide us an opportunity to improve upon our curriculum and instruction.
	SLO	Chapter/Section	
	1. Integers	Ch. 1	
	2. Variables and Equations	Ch. 2	
	3. Application Problems	Ch. 2	
	4. Fractions	Ch. 1	
	5. Decimals	Ch. 1	
	6. Ratio and Proportions	Section 7.7	
	7. Percent	Ch. 2	
	8. Equations and Inequalities	Ch. 2	
	9. Exponents and Polynomials	Ch. 1, Ch. 5	
	10. Factoring	Ch. 6	
	11. Roots and Radicals	Sections 8.1, 8.2, 8.3	

PART 6

Summary of Assessment Measures

- A. How many different assessment measures were used? Three measures per course.
- B. List the direct measures (see appendix): (1) Percentage of students passing the posttest at 60% 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): Students 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
Andrea Smith	Collected and analyzed data, prepared the report	<i>Andrea Smith by Mubarek email</i>
Roya Namavar	Collected data	<i>Roya Namavar by Mubarek email</i>
Larry Elzo	Collected data	<i>Larry Elzo by Mubarek email</i>

B. Reviewed by:

Titles	Name	Signature	Date
Department Head	Dr. Jamie M. Graham	<i>Jamie M. Graham</i>	<i>6/8/19</i>
Dean	Dr. Keith Martin	<i>Keith Martin</i>	<i>6/10/19</i>