

Remedial Math	
<i>COLLEGE NAME:</i>	Shawnee Community College
<i>FISCAL YEAR IN REVIEW:</i>	2018-2022
REVIEW SUMMARY	
<p>PROGRAM OBJECTIVES What are the objectives or goals of the program/discipline?</p>	To provide instruction to students deemed not college-ready by preparing them for successful completion of a gateway mathematics course.
To what extent are these objectives or goals being achieved?	After reviewing the Developmental Education Reform Act (DERA) report submitted to ICCB on May 1, 2022, where only 3 of 37 students (8.1%) passed the gateway math course, the Math Department determined that changes in the math curriculum were needed.
How does this program contribute to other fields and the mission of the college?	Students who have not tested into a requisite gateway math course (100 level or above) must start in, and successfully complete with a C or better, a developmental math course.
<p>PRIOR REVIEW UPDATE Describe any quality improvements or modifications made since the last review period.</p>	The Math department utilized funding from the Developmental Educational Innovation Grant for Corequisite Development to contract with consultant Kathy Almy of Almy Education, to redesign the developmental math program and implement multiple measures placement. MAT 039 (Development Math) and MAT 042 (Geometry) were both withdrawn during this review period. MAT 043 will be made inactive since course content has been integrated into the following corequisite courses: MAT 110 General Education Mathematics (offered concurrently with MAT 090 General Education Mathematics Corequisite Lab), MAT 120 College Algebra with Review, and MAT 208 General Elementary Statistics with Review. MAT 120 was offered in Spring 2023. MAT 110 (corequisite), MAT 120, and MAT 208 will be offered in Fall 2023. ALEKS-PPL is being used to supplement instruction in MAT 041 Introduction to Algebra, to meet the needs of students who are not college-ready based on all of the College's placement measures.
REVIEW ANALYSIS	
Complete the following fields and provide concise information where applicable. Please do not insert data sets but summarize the data to completely answer the questions. Review will be sent back if any of the below fields are left empty or inadequate information is provided.	
INDICATOR 1: NEED	RESPONSE

<p>1.1 Detail how the offerings are sufficient and aligned to meet the needs of students across all programs served and supportive academic programs (e.g. tutoring, co-requisite, summer bridge, AE-ICAPS, foundational mathematics).</p>	<p>The math department works with other department to ensure courses are scheduled at times conducive to other program needs. For example, MAT 121 Technical Mathematics, is offered when students who are enrolled in CTE programs requiring that course are available. Also, MAT 122 Mathematics for Healthcare Professionals, is offered at times when nursing students are available.</p>
<p>INDICATOR 2: COST EFFECTIVENESS</p>	<p>RESPONSE</p>
<p>2.1 What are the costs associated with this program?</p>	<p>Faculty salaries and benefits, instructional supplies, and professional development are the main costs associated with this program. The College also offers professional tutoring through the Testing Center; however, this is not part of the math department’s budgeted expenditures.</p>
<p>2.2 How is the college paying for this program and its costs (e.g. grants, etc.)?</p>	<p>Institutional funding is used to pay faculty salaries and tutoring services. Over the course of the past two years, faculty stipends for new course development and math program redesign were able to be funded by a combination of the ICCB Developmental Education Innovation and ASPIRE grants; otherwise, new course development stipends are institutionally funded. The College was fortunate to be able to purchase ALEKS-PPL user licenses through the ICCB Developmental Education Innovation Grant for Corequisite Development to offset expenditures.</p>
<p>2.3 If most of the costs are offset by grant funding, is there a sustainability plan in place in the absence of an outside funding source? If so, please elaborate.</p>	<p>Most of the costs are institutionally funded unless there are available grants that offset program costs. All costs associated with this program are sustainable using institutional funding.</p>
<p>2.4 Based upon this review, what steps are being taken to offer curricula more cost-effectively?</p>	<p>The math department has reduced the number of remedial courses, making it possible for a student who enters the College to enroll in a transfer-level (gateway) math course by the end of year one; significantly decreasing time to graduation. The math department has also developed corequisite courses and implemented multiple measures placement.</p>
<p>2.5 Are there needs for additional resources? If so, what are they?</p>	<p>Additional math tutors in the College’s Tutoring Center, and perhaps at Extension Centers, might prove beneficial to student success. Also, if ALEKS-PPL is used in lieu of AccuPlacer, as the College’s placement testing program, the College would have additional costs they would incur due to the significant differences in price.</p>

INDICATOR 3: QUALITY	RESPONSE
3.1 How is the college working with high schools to reduce remedial needs?	The College has partnered with several high schools on the implementation of transitional math. Additionally, the College has implemented multiple measures placement.
3.2 What is the college doing to develop and implement co-requisite or pathway models to ensure students placing into development education finish the sequence within one academic year?	The math department has developed three corequisite math courses (MAT 110, MAT 120, and MAT 208) to ensure students are enrolled in a transfer-level (gateway) math course within one academic year. Multiple measures placement has also been implemented.
3.3 Provide a description of the remedial/developmental sequence. Colleges may attach a graphic representation.	(See attached Math Flowchart)
3.4 Are there any alternative delivery methods of this program? (online, flexible-scheduling, team-teaching, accelerated, etc.)?	The College offers math courses in three modalities: Traditional face-to-face, online, and interactive television (ITV). Data has shown that students do not prefer the ITV modality and have lower success rates; therefore, the math department is in the process of limiting the number of math sections offered via ITV.
3.5 What innovation has been implemented or brought to this program?	MAT 043 Intermediate Algebra concepts will be taught as part of an integrated review into the following courses: College Algebra (MAT 120) and General Elementary Statistics (MAT 208). MAT 110 General Education Mathematics will be offered concurrently with newly developed corequisite lab course, MAT 090 General Education Mathematics Corequisite Lab. All courses will save students both time and money and allow them to complete a gateway math course in year one. Also, MAT 120 uses an access card with MyMathLab homework and e-book, saving students textbook costs.
3.6 To what extent is the program integrated with other instructional programs and services?	The developmental math program aims to prepare students for gateway math courses and is minimally integrated with other programs; however, it is significantly tied to overall student completion, as was evident in the DERA report.
3.7 Have partnerships been formed since the last review that may increase the quality of the program and its courses? If so, with whom?	The College is part of a cohort of 10 community colleges partnering with the non-profit group, Women Employed, as part of the ASPIRE project. The math department has worked with consultant, Kathy Almy of Almy Education, on math redesign, the implementation of transitional math in district high schools, multiple measures placement, and corequisite course development.

<p>3.8 How well are completers of remedial/developmental courses doing in related college-level courses?</p>	<p>Historically, and according to the DERA report, most developmental math students have not been successful in the completion of a gateway math course, which has adversely impacted completion. The information the College and math department learned from the DERA report was the driving force behind the math curriculum redesign and implementation of multiple measures placement.</p>
<p>3.9 What professional development or training is offered to instructors and/or staff to ensure quality programming?</p>	<p>Kathy Almy (Almy Education) has provided guidance and resources (from other institutions that have already implemented math corequisites successfully) throughout the redesign process. Math faculty also attend the IMACC annual conference to ensure they are current with best practices in the discipline.</p>

LIST ANY BARRIERS ENCOUNTERED WHILE IMPLEMENTING THE PROGRAM.

1. The amount of meeting time and number of months it took to implement multiple measures and development of corequisites.
2. Very few district high schools are offering Transitional Math.
3. Availability of tutoring assistance for students in the Tutoring Center.

DATA ANALYSIS FOR REMEDIAL MATH

Please complete for each course reviewed as part of the Remedial Math, Cross-Disciplinary Review. Provide the most recent 5 year longitudinal data available.

<p><i>COURSE TITLE</i></p>	<p>MAT 039 Developmental Math (<i>This course was withdrawn on 11/7/2022.</i>)</p>				
<p><i>COURSE DESCRIPTION</i></p>	<p>This is a review of basic arithmetic concepts and operations: addition, subtraction, multiplication, and division of whole numbers, fractions, decimals, percentages and metrics. Students are placed into this course by their placement scores. In order to advance to the next mathematics course (MAT 041), students must complete this course with a grade of "A", or a comparable score on the exit exam for this course.</p>				
	<p><i>2018</i></p>	<p><i>2019</i></p>	<p><i>2020</i></p>	<p><i>2021</i></p>	<p><i>2022</i></p>
<p><i>NUMBER OF STUDENTS ENROLLED</i></p>	<p>9</p>	<p>11</p>	<p>0</p>	<p>0</p>	<p>0</p>
<p><i>CREDIT HOURS PRODUCED</i></p>	<p>27</p>	<p>33</p>	<p>0</p>	<p>0</p>	<p>0</p>
<p><i>SUCCESS RATE (% C OR BETTER) AT THE END OF THE COURSE, EXCLUDING WITHDRAWALS AND AUDIT STUDENTS</i></p>	<p>77.78%</p>	<p>54.55%</p>	<p>0</p>	<p>0</p>	<p>0</p>

DATA ANALYSIS FOR REMEDIAL MATH

Please complete for each course reviewed as part of the Remedial Math, Cross-Disciplinary Review. Provide the most recent 5 year longitudinal data available.

<i>COURSE TITLE</i>	MAT 041 Introduction to Algebra				
<i>COURSE DESCRIPTION</i>	This course is an introduction to the algebraic fundamentals. The material covered in this course includes operations on signed numbers, linear equations and inequalities, exponents, polynomials, and rational expressions. It is designed for students who have had no algebra or who desire a review of this material. Successful completion of this course should prepare a student for Intermediate Algebra-MAT 043.				
	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>
<i>NUMBER OF STUDENTS ENROLLED</i>	154	135	154	89	106
<i>CREDIT HOURS PRODUCED</i>	462	405	462	267	318
<i>SUCCESS RATE (% C OR BETTER) AT THE END OF THE COURSE, EXCLUDING WITHDRAWALS AND AUDIT STUDENTS</i>	72.08	70.35	70.13	68.54	67.92

DATA ANALYSIS FOR REMEDIAL MATH

Please complete for each course reviewed as part of the Remedial Math, Cross-Disciplinary Review. Provide the most recent 5 year longitudinal data available.

<i>COURSE TITLE</i>	MAT 042 Introduction to Geometry (<i>This course was withdrawn on 1/3/2000.</i>)				
<i>COURSE DESCRIPTION</i>	This course covers the fundamental concepts of geometry for students who lack credit for one year of high school geometry or who need a review of the subject matter. It is similar to a one-year course in high school geometry. Deductive and inductive reasoning and direct and indirect proofs are an integral part of this course as well as concepts of undefined terms, axioms, and theorems. Other topics include triangles, congruence, lines, angles, circles, parallelism, perpendicularity, polygons, and construction techniques.				
	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>
<i>NUMBER OF STUDENTS ENROLLED</i>	0	0	0		
<i>CREDIT HOURS PRODUCED</i>	0	0	0		

<i>SUCCESS RATE (% C OR BETTER) AT THE END OF THE COURSE, EXCLUDING WITHDRAWALS AND AUDIT STUDENTS</i>	NA	NA	NA		
DATA ANALYSIS FOR REMEDIAL MATH					
Please complete for each course reviewed as part of the Remedial Math, Cross-Disciplinary Review. Provide the most recent 5 year longitudinal data available.					
<i>COURSE TITLE</i>	MAT 043 Intermediate Algebra				
<i>COURSE DESCRIPTION</i>	This course is an intermediate-level course in Algebra. It includes properties and operations of the real number systems, equations and inequalities, polynomials, rational expressions, powers, roots, radicals, functions, and graphing.				
	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>
<i>NUMBER OF STUDENTS ENROLLED</i>	176	165	212	127	99
<i>CREDIT HOURS PRODUCED</i>	880	825	1060	635	495
<i>SUCCESS RATE (% C OR BETTER) AT THE END OF THE COURSE, EXCLUDING WITHDRAWALS AND AUDIT STUDENTS</i>	80.11	72.73	77.36	77.17	77.78
REVIEW RESULTS					
<i>RATIONALE</i> Provide a brief summary of the review findings and a rationale for any future modifications.	The math department recognizes that many developmental math students do not successfully enroll in or complete their gateway math course. As such, have revamped the remedial math program to expedite a student's time to completion of a gateway math course. The math department is excited to implement corequisites courses and analyze the success rates.				
<i>INTENDED ACTION STEPS</i> Please detail action steps to be completed in the future based on this review with a timeline and/or anticipated dates.	MAT 110, MAT 120, and MAT 208 corequisites will be offered in Fall 2023. ALEKS-PPL will be utilized with MAT 041 to provide additional remediation to the College's lowest performing students. As part of the second phase of the ASPIRE project, the math department is planning to develop a summer bridge program using ALEKS-PPL, with the goal of corequisite math placement for any student who is not college-ready in math, by the time they enter the College.				