Academic Admissions Standards Committee (AASC)

Spring Report (May 2025)

Membership

Co-Chair(s):

- Rudy Molina (Vice Provost, Student Academic Success and Enrollment Management)
- Traci Zimmerman (Dean, CAL)

Members:

- Audrey Burnett (Associate Dean, University Studies)
- Katherine Ott Walter (Faculty Senate representative)
- Melinda Wood (AVP, Access and Enrollment Management; Director of Admissions)
- Wren Stevens (Associate Dean, CVPA)/Karin Tollefson-Hall (alternate)
- Jeff Tang (Associate Dean, CISE)
- Molly Brown (Associate Dean, COB)/Sam Collier (alternate)
- Doug Hochstetler (Associate Dean, CHBS)
- Ravi Shankar (AUH, Mathematics and Statistics)
- Katie Dredger (AUH, Middle, Secondary, and Mathematics Education)

Charge:

- The JMU Academic Admissions Standards Committee will recommend initiatives to align admissions and execution of instruction with the strategic goals of the Academic Affairs division.
- Our core principle: Admission standards to academic programs, like the execution of instruction, should be determined by the Division of Academic Affairs.

Objectives:

The success of this committee's effort will be measured by the formulation of inclusive admissions criteria with periodic updates, the creation of an effective, transparent admissions decision process, and the analysis and documentation of the following objectives:

- Standards: Investigate individual program admissions, progression, and graduation standards
- Trends: Identify and recommend academic areas with the greatest potential for growth
- Resources: Identify the needs and considerations for resources such as space, funding, personnel, materials, technology requirements, and others to meet evolving enrollment demands
- Capacity: Examine university infrastructure and create a clear metric that ensures adequate capacity for academic programs

Summary of Activity:

The AASC focused efforts on working with the Communications and Marketing team, with admissions, and with the Mathematics and Statistics department to finalize the design of and communication about existing math requirements (across majors) and math placement.

It should be noted that the following changes were made for the Fall 2024 class, based on suggestions from AASC (with special thanks to Ravi Shankar and Brian Walton):

1. **One Book**
    - The One Book, accessible to first-year students and by default, parents, was updated with a hyperlink to a detailed ALEKS document located on the Orientation and Transition website. This is available without an authentication. The 2nd tab provides the requested information.
    - One Book steps, required onboarding steps to register for an Orientation date, also has the above hyperlink embedded in the steps (new for spring 2025 and fall 2025) so students have a reminder of the seriousness of the ALEKS Assessment before taking it.
2. **Canvas**
    - The ALEKS video in the First Year Advising Canvas course available during orientation has an updated video emphasizing the importance of the ALEKS Assessment. Students have 2-3 assessment questions related to the ALEKS. However, the Canvas course is not a requirement.
3. **Orientation sessions**
    - The Director of University Advising speaks extensively about the importance of authentic engagement with ALEKS during each Orientation presentations throughout the summer months. In addition, academic advisors speak with incoming first-year students about the importance of the ALEKS score for math enrollment during summer Orientation and Weeks of Welcome.

We held one, full AASC committee meeting (via Zoom) on December 11, 2024 to address two (ongoing) projects:

- ALEKS analysis/report (Appendix I)
  What is the relationship between ALEKS scores and student performance in Mathematic courses?
- Website Prototype (Appendix II)
  Design an interactive website that shows academic majors by calculus and statistics as an effort to help students better understand what they will need to be better prepared and more successful at JMU.

With these efforts completed, we have asked the provost to consider whether and how this committee will continue next year.

Planning for Mathematical Success in Major Requirements

Introduction

Different majors require the completion of various mathematical courses besides the Natural World general education requirement of quantitative reasoning. These course requirements typically involve courses in statistics or calculus or both. Your ability to successfully complete the requirements in your major is significantly improved by starting your sequence of mathematical courses at a level appropriate to your preparation.

Past, Present, Future

Think of your preparation as having three components: your **past**, which consists of your incoming preparation; the **present**, which is your performance on the adaptive ALEKS assessment at JMU; the **future**, which is the courses you will take towards satisfying your major requirements.

The Past: Your Preparation

Your incoming preparation is a combination of which mathematics courses you have seen prior to JMU (high school or college credit) and how well you understand and remember the content, especially reasoning about numbers; interpreting relations between variables with graphs, tables, and formulas; and algebraic rules and algorithms.

The Present: ALEKS Assessment

JMU implements a mathematics placement mechanism that is based on a personalized assessment of students' incoming degree of understanding. The placement uses a professionally designed series of questions that help identify which mathematical concepts a student understands. The goal of the assessment is to accurately place students in the course where they will be most likely to complete their major's mathematical requirements. It is in your interest to complete the assessment so that results honestly reflect your degree of understanding. If you don't try your best, you are likely to be placed in a course that has too much review and wastes your time and money paying for credits that you didn't really need. If you answer questions that you don't really understand, perhaps using outside help or resources, then you are likely to be placed in a course for which you aren't prepared and have a significant possibility of wasting time and money by not successfully completing the course and needing to start over in a later semester.

Bottomline: If you don't represent your skills accurately on this assessment (whose score has no bearing on any grade or GPA) you will **lose time to completion** and likely **spend a great deal of extra money** re-taking courses. This fact is supported by many semesters of evidence.

The Future: Your JMU Journey

Calculus Placement:

Calculus is the mathematical study of how changes in one variable affect changes in other variables using the ideas of derivatives and integrals. Advanced mathematical courses required by many science, engineering, and technology majors, that use calculus build from a rigorous coverage of calculus. At JMU, the rigorous calculus foundation is begun by either taking Calculus 1 (Math 235) or completing the two-semester sequence Calculus with Functions (Math 231+232), which was designed to introduce and review pre-calculus skills and concepts as students learn the calculus foundation. Both options allow students to continue further their studies in calculus and advanced mathematics. Majors that require students be exposed to the ideas and basic calculations of calculus but without the thorough foundation allow their calculus requirements to be satisfied by Introductory Calculus (Math 205) or a major-specific replacement (ISAT 150+151). Each of these pathways are terminal math courses and do not prepare for more advanced mathematics courses.

JMU's calculus placement identifies which calculus course a student is prepared to take. Calculus 1 (Math 235) requires the highest level of placement proficiency. Calculus with Functions (Math 231) and Introductory Calculus (Math 205) require an intermediate placement proficiency because they each spend more time reinforcing the pre-calculus skills necessary for success. There is a band of placement that allows a student to enroll in Math 231 or Math 105 while concurrently taking a supporting 1-credit course Math 199, which is designed to give a mathematical booster for students whose understanding is on the border of expected success without this additional support. Students whose placement suggests they are not quite ready to start a calculus course immediately would enroll in College Algebra (Math 155) and then register for either Math 231 or Math 205 in a semester following successful completion of algebra.

Entry to STEM Calculus[1]

ALEKS Score	Entry Course	2nd Semester	3rd Semester
55 or below	MATH 155	MATH 231	MATH 232
56-65	MATH 231+199	MATH 232	
≥ 66	MATH 231	MATH 232	
≥ 81	MATH 235		

[1] Allows students to continue to Calculus 2 (MATH 236) and additional advanced mathematics courses.

Entry to Introductory Calculus[2]

ALEKS Score	Entry Course	2nd Semester
55 or below	MATH 155	MATH 205
56-65	MATH 205+199	
≥ 66	MATH 205	

[2] Students potentially interested in additional advanced mathematics courses are encouraged to consider using the STEM Calculus track.

Entry to ISAT Topics in Applied Calculus[3]

ALEKS Score	Entry Course	2nd Semester
55 or below	MATH 155	ISAT 151
56-66	ISAT 151+150	
≥ 81	ISAT 151	

[3] ISAT majors only

Statistics Placement:

Statistics is the study of summarizing and analyzing and using data to make decisions data in the presence of uncertainty and randomness. Disciplines that involve performing or interpreting experimental results generally require statistical coursework. At JMU, applied statistics training is generally taken with Elementary Statistics (MATH 220). An alternative that incorporates the use of computer scripts for data analysis and that is designed for students intending to study advanced mathematics or data science is Introduction to Applied Statistics Using R (MATH 229). Both courses provide the statistical background to take subsequent applied statistics courses. There are some majors that require calculus that require their students to complete Introduction to Probability and Statistics (MATH 318), and this course can be an alternative prerequisite for those advanced applied statistics courses.
The introductory statistics courses also require a degree of proficiency in mathematical notation and algebraic proficiency that is part of the JMU placement process. Students whose placement suggests they are not quite ready to start directly in one of the statistics courses would enroll in Quantitative Literacy and Reasoning (Math 105).

Entry to Statistics

ALEKS Score	Entry Course	2nd Semester
45 or below	MATH 105	MATH 220
≥ 46	MATH 220	
≥ 61	MATH 229	

Education Majors and Mathematics:

Elementary education majors are required to complete Math for Elementary & Middle School Teachers I and II (MATH 110 and MATH 210). Middle education majors are encouraged to complete MATH 110 by the end of the first year. Middle education majors seeking a Mathematics endorsement are required to complete both MATH 110 and MATH 210. These courses form a sequence that is designed for future elementary and middle school teachers to develop mathematical knowledge of concepts that arise in elementary and middle school education by examining the concepts more deeply. Problem-solving, reasoning, representations, connections and communication form the foundation through which learning will take place. There are no placement restrictions to take MATH 110.

Other Majors and Mathematics:

The Natural World cluster of the general education program includes a requirement that students complete a course in quantitative reasoning. The following entry courses described above with their associated placement requirements can be used by any student to meet this requirement: ISAT 151, MATH 105, MATH 110, MATH 205, MATH 220, MATH 229, MATH 231, MATH 235. In addition, a course named The Nature of Mathematics (MATH 103) will satisfy this requirement and has no placement restrictions.

Majors and MATH Requirements
ALEKS Math Assessment

SPRING 2025

Purple text indicates if a math course is required for the first semester at JMU. Contact your advisor if you have math credit.

The chart below shows math requirements by major. Any of the courses listed in **bold font fulfill the Calculus or Statistics requirement** for the major. Math courses not in bold indicate a lower level preparatory course. Enrollment in your first math course is based on your ALEKS assessment score. The MyMadison system will not permit you to enroll in a course higher than the recommendation for your assessment score. In some cases, score parameters may overlap allowing students to enroll in either course. Additional courses may be required by the major.

Major	Calculus Course	ALEKS Score	Statistics Course	ALEKS Score
Biology & Biotechnology Math is required for the 1st-semester based on your assessment score.	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **≥ 66** **56 – 65** 55 or below	**MATH 229** **MATH 220** MATH 105	**≥61** **≥46** 45 or below
Business BBA (excluding QFIN and ECON) Math is required for the 1st-semester based on your assessment score.	**MATH 235** **MATH 205** **MATH 205 + 199** MATH 155	**≥ 81** **≥ 66** **56 – 65** 55 or below	COB 191	≥ 46 OR any credit for one of the following: MATH 155,MATH 156, MATH 205, MATH 231,MATH 235 or ISAT 151
Chemistry & Biophysical Chemistry Math is required for the 1st-semester based on your assessment score.	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **66-80** **56 - 65** 55 or below		
Communication Science and Disorders			**MATH 220** MATH 105	**≥ 46** 45 or below
Communication Studies – BS			**MATH 220** MATH 105	**≥ 46** 45 or below
Computer Science If you placed into MATH 155, it is required the 1st semester	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **≥ 66** **56 - 65** 55 or below	**MATH 220** MATH 105	**≥ 46** 45 or below
Dietetics If you placed into MATH 105, it is required the 1st semester			**MATH 220** MATH 105	**≥ 46** 45 or below
Earth Science Math is required for the 1st-semester based on your assessment score.	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **≥ 66** **56 - 65** 55 or below		
Economics – BA or BS Math is required for the 1st-semester based	**MATH 235** **MATH 231**	**≥ 81** **≥ 66**		

on your assessment score.	**MATH 231 + 199** **MATH 205** **MATH 205 + 199** MATH 155	**56-65** **≥ 66** **56 – 65** 55 or below		
Education Majors:				
Elementary Ed	**MATH 110 - All scores – Recommended by the end of the first year**			
Inclusive Early Childhood Ed	**Any Cluster Three Math –** See score information in the *All Other Majors* section below			
Special Education	**Any Cluster Three Math –** See score information in the *All Other Majors* section below			
Teaching English to Speakers of Other Languages (TESOL)	**Any Cluster Three Math –** See score information in the *All Other Majors* section below			
MIED English	**MATH 110 Recommended by end of first year**			
MIED Mathematics	**MATH 110 - All scores – Required first semester**			
MIED Science	**MATH 110 Recommended by end of first year**			
MIED Social Studies	**MATH 110 Recommended by end of first year**			
SEED – Biology/Chemistry/Earth Science/Mathematics/Physics See the math requirement for the specific major for 1st semester math requirements	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **≥ 66** **56 – 65** **55 or below**	**MATH 229** **MATH 220** MATH 105	**≥ 61** **≥ 46** 45 or below
SEED – English/History	**Any Cluster Three Math –** See score information in the *All Other Majors* section below			
Engineering Math is required for the 1st-semester based on your assessment score.	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **66 - 80** **56 - 65** 55 or below		
Geology Math is required for the 1st-semester based on your assessment score.	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **≥ 66** **56 - 65** 55 or below	**MATH 220** MATH 105	**≥ 46** 45 or below
Health Sciences If you placed into MATH 105, it is required the 1st semester			**MATH 220** MATH 105	**≥ 46** 45 or below
Information Technology If you placed into MATH 155, it is required the 1st semester	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **≥ 66** **56 - 65** 55 or below	**MATH 220** MATH 105	**≥ 46** 45 or below
IdLS MATH 107 is required the 1st semester	**MATH 107 – All scores**			
ISAT MATH 155 or ISAT 151 is required the 1st semester	**ISAT 151** **ISAT 151 & ISAT 150** MATH 155	**≥ 81** **56 - 66** 55 or below		

International Affairs If you placed into MATH 105, it is required the 1st semester			**MATH 220** MATH 105	**≥ 46** 45 or below
Justice Studies			**MATH 220** MATH 105	**≥ 46** 45 or below
Kinesiology If you placed into MATH 155 or MATH 105, it is required the 1st semester. One math course is recommended for the 1st semester	**MATH 205** **MATH 205 + 199** MATH 155	**≥ 66** **56 – 65** 55 or below	**MATH 220** MATH 105	**≥ 46** 45 or below
Mathematics Math is required your 1st semester	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **≥ 66** **56 - 65** 55 or below		
Nursing			**MATH 220** MATH 105	**≥ 46** 45 or below
Physics Math is required your 1st semester	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **≥ 66** **56 - 65** 55 or below		
Political Science If you placed into MATH 105, it is required the 1st semester			**MATH 220** MATH 105	**≥ 46** 45 or below
Psychology Math is required your 1st semester. MATH 220 is recommended.	**MATH 235** **MATH 231** **MATH 231 + 199** **MATH 205** **MATH 205 + MATH 199** MATH 155	**≥ 81** **≥ 66** **56 - 65** **≥ 66** **56 - 65** 55 or below	**MATH 220** MATH 105	**≥ 46** 45 or below
Public Administration If you placed into MATH 105, it is required the 1st semester			**MATH 220** MATH 105	**≥ 46** 45 or below
Quantitative Finance Math is required your 1st semester	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **≥ 66** **56 - 65** 55 or below		
Social Work			**MATH 220** MATH 105	**≥ 46** 45 or below
Statistics Math is required your 1st semester	**MATH 235** **MATH 231** **MATH 231 + 199** MATH 155	**≥ 81** **≥ 66** **56 - 65** 55 or below	**MATH 229**	**≥61**
Undeclared	Most majors have a required math subject. Consult with your advisor about majors you are considering before enrolling in a math class.			
All other majors – classes in bold fulfill General Education Cluster 3 Quantitative Reasoning requirement	**MATH 235** **MATH 231** **MATH 231 + 199** **MATH 205** **MATH 205 + MATH 199** MATH 155	**≥ 81** **≥ 66** **56 - 65** **≥ 66** **56 - 65** 55 or below	**MATH 220** **MATH 105** **MATH 103**	**≥ 46** 45 or below No specific score required