

Mathematics/Quantitative Reasoning Redesign: A Further Look at Placement

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Outline of Presentation

- **Review of EO 1110 and Implementation Memo**
- **Placement Indicators**
- **Informed Self-Placement**
- **Placement into Calculus**

Quick Review of EO 1110

- In their first year, students shall enroll in GE Math/QR courses appropriate to their major and skill level.
- Multiple measures of academic proficiency shall be used to assess skills and recommend placement.
- Students who need academic support shall enroll in college-level courses that strengthen skills development.

Quick Review of EO 1110

Early Start

- Early Start shall be required for students needing skills development as determined by systemwide placement standards.
- Early Start programs shall offer primarily baccalaureate GE courses.

Quick Review of EO 1110 Implementation Memo

Category I	Fulfilled GE B4 Requirement
Category II	Placement in GE B4* Course
Category III	Placement in GE B4* Supported Course (<i>Early Start recommended</i>)
Category IV	Placement in Early Start and GE B4* Supported Course

Course Placement Indicators

- AP Calculus, AP Statistics
 - IB Mathematics
 - CLEP
 - Transferable Coursework
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- SAT Math
 - ACT Math
 - Smarter Balanced Test / EAP
 - *High School Coursework / GPA*

Categorization of Majors

STEM **Majors that require a full sequence of differential and integral calculus**

Not STEM **Everything else!**

How These Work Together

Example using New SAT Scores		
	STEM	Not STEM
Category I	Not used	Not used
Category II	570+ OR 520-560 AND 12 th grade math course	570+ OR 520-560 AND 12 th grade math course
Category III	Did not meet req't	Did not meet req't
Category IV	Did not meet req't	Did not meet req't

How These Work Together

Example using High School Work		
	STEM	Not STEM
Category I	Not used	Not used
Category II	Math GPA ≥ 3.5 AND (12 th grade math OR 5+ yrs of math/QR) OR GPA ≥ 3.7	Math GPA ≥ 3.0 AND (12 th grade math OR 5+ yrs of math/QR) OR GPA ≥ 3.7 OR GPA ≥ 3.5 AND 4+ yrs of math/QR
Category III	Math GPA ≥ 3.3	Math GPA ≥ 3.3 OR GPA ≥ 3.0
Category IV	Did not meet req'ts	Did not meet req'ts

Opportunity to Practice Informed Self-Placement

Category I	Fulfilled GE B4 Requirement
Category II	Placement in GE B4 Course
Category III	Placement in GE B4 Supported Course (<i>Early Start recommended</i>)
Category IV	Placement in Early Start and GE B4 Supported Course

Informed Self-Assessment What Else Should They Know?

Reading Skills

Study Skills, Time Management

Confidence in Abilities and Interests

Past Experiences in Math

Persistence and Motivation

Post-secondary Awareness

Support Network

Are They Ready for Calculus?

You still have prerequisites. How to enforce them?

- **Indicators**
- **Category Assignments**
- **High school coursework**
- **Additional assessment**
- **Non-cognitive Aspects**

A Pump, Not a Filter

Assessments can help to advance students.

“If you have a 24, you may be ready for calculus”

Assessments can hold students back.

“If you have a 23, you must take pre-calculus”

Assessment Exams

Efficiency vs. Effectiveness

	Efficient	Effective
Style	Adaptive may take less time and offer an “answer”	Diagnostic offers more detailed information
Score	Single score is easier to record and use	Multiple scores reduce chance of poor placement
Length	Shorter is easier to schedule	Longer may be more accurate
Cost	Cheaper is more affordable to campus	More expensive may mean more sophisticated
Alignment	Use same requirement for all majors	Different requirements decrease need for supported instruction

Students Should Consider . . .

<i>A Strong Calculus Student...</i>	<i>A Student Who Might (or Might Not) Be Ready for Calculus...</i>	<i>A Student Who Might want to start in PreCalculus</i>
Has at least 10 hours per week to study outside of class	Has time, but less than 10 hours per week, to study outside of class	Has little time available outside class to study
Enjoys solving challenging problems	With time, can solve problems that are different from examples	Most comfortable solving problems similar to examples
Self-motivated, self-disciplined, seeks help from instructor	When needed, goes to Tutoring Center and uses solutions manual	Studies mostly alone, visits Tutoring Center before tests
Pursuing a degree that will use calculus in career	Pursuing a degree that requires calculus for upper division courses	Pursuing a degree that requires calculus

Based on chart from Johnson County Community College, Kansas

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Questions?

