Improving the Teaching and Learning of Science and Mathematics

Kennesaw State University

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KSU's Complete College Georgia Goals

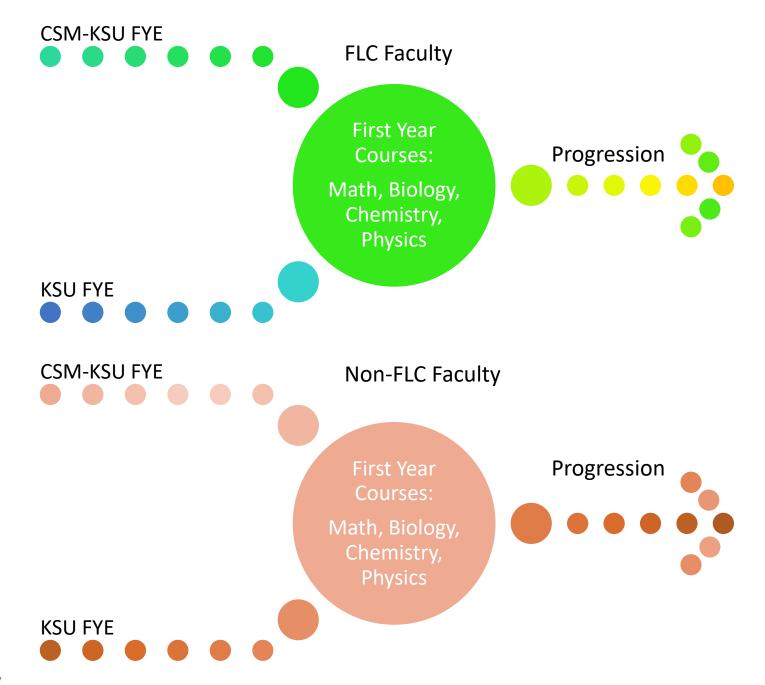
- Goal 1: Increase the college readiness of students enrolling at KSU through external partnerships with TCSG institutions and K-12 schools.
- Goal 2: Enhance academic and non-academic support services for targeted subgroups of students.
- Goal 3: Promote excellence and innovation in education to aid student progression to graduation.

CSM - Meeting the Complete College Georgia Goals	CSM Student Success Initiative Actions
Create a common first-year experience for students majoring in CSM disciplines that focuses on developing quantitative reasoning skills	Creation of a CSM implementation of KSU 1101 and of CSM first-year learning communities
Develop a robust advising structure that helps students find a pathway for success that fits their individual needs.	Data driven advising and placement of students Create alternate pathways within the high DFW courses
Implement pedagogical changes known to increase student success in gateway courses Create a culture of interdisciplinarity in all of our	Foster collaboration and instructional innovation among CSM faculty
Create a culture of interdisciplinarity in all of our courses	
Restructure courses and laboratory experiences around student engagement with the material and discovery	Scaffold research/discovery experiences throughout a student's program of study

First Year Experience

Learning objectives:

- 1. Study skills
- 2. Academic/Cognitive skills
- 3. Critical thinking skills
- Focus on developing and using quantitative skills as related to these learning objectives.
- Focus on developing STEM habits of mind.
- Focus on developing a community of peers, advisors and faculty.



Faculty Learning Communities

- 1. Learn about research-based instructional innovations that engage all students
- Support (re)design of first-year science and mathematics courses
- 3. Provide resources and support structures for faculty

Learning Assistant (LA) Program

- 1. LAs assist students in developing strategies that will help strengthen their knowledge, develop transferable learning skills, and achieve academic success. LAs may support students during class, recitation, or in labs.
- 2. Now supporting over 15 separate 1st-year courses
- 3. Has allowed expanded use of evidence-based, engaged pedagogies
- 4. Transformed classrooms have involved over 700 students, most from STEM disciplines.

Undergraduate Research

1. CSM KSU1101 - Participation in a community research project that serves as an introduction to scientific research

2. CSM Disciplines –

- Scaffolding research skills in the curriculum from Inquiry labs to Course-embedded Undergraduate Research Experiences
- make use of Directed Methods courses and Directed Study