

Florida International University: A Transformational Campus

Over the last five years, Florida International University has undergone a profound educational transformation that has yielded positive results and helped FIU address some of its most pressing academic issues. The goal was to make an impact and really provide our unique demographic of students with the quality support they needed to graduate on time, encourage them to pursue fields in STEM and give them the skills to get jobs and create new jobs.

Programs that have contributed to our success include:

FIU's Graduation Success Initiative

The Graduation Success Initiative (GSI) is an extensive, university-wide set of innovations dedicated to helping our students succeed academically. By reducing barriers, developing a major map and pushing students to identify a major early on we were able to raise 6-year graduation rates for First Time in College Students (FTICs) by 15 points in GSI's first four years.

Elements of GSI Include:

MyMajorMatch & MyMajor

- Career interest inventory available at admission
- Career Clusters linked to FIU majors—link to MyMajor
- Advisor can use individual sessions + SLS courses
- Lifetime student access—including inventories
- Interactive website of FIU majors
- Admission requirements, prerequisites, career outlook, median FL salaries, O*NET
- Major Maps—term by term course plan

Transition to exploratory majors

- “Undecided” was removed from admission application
- Students can now select one of the six exploratory (meta) majors
- Students who have been admitted can now complete MyMajorMatch assessment
- Exploratory students are required to take a Discover Your Major one credit course to help explore major options
 - Students complete interest and skills assessments.
 - Students research careers, participate in job shadowing, and conduct informational interviews.
 - 63% of students select a major by the end of the course.
 - 79% of students were committed to their major by the end of the course.

Predictive Analysis

Relying on national data is not sufficient for improving retention and graduation rates. We found that institutions must employ institution-specific findings to improve student outcomes. The focus of predictive analytics at FIU is to analyze our large institutional student record datasets for FIU-specific actionable findings that can lead to increased student retention and graduation rates. This work is carried out by the Retention and Graduation success team in the Office of Analysis and Information Management, which is staffed with a director and 5 researchers with backgrounds in behavioral science research, statistics, and computing. Rather than attempting to identify just a small group of at-risk students based on traditional risk factors such as gender and ethnicity, the Office of Retention and Graduation Success has the more ambitious goal of identifying factors that lead to student

retention and departure across the entire university experience. The Student Success Initiative in the Office of the Provost works with academic departments and colleges in determining the most effective implementation and intervention strategies.

Professional Advisors

Since 2012, FIU students now receive their academic advising from the professional academic advisors who are housed in each academic unit. All students have access to utilize academic advising services at FIU. All students also have access to an online advising tool (My_eAdvisor) that provides students with information on all degree requirements and a mechanism to send messages to and make appointments with their assigned academic advisor. FIU has moved to a caseload management system for its advisors and continuously monitors the student to advisor ratio for efficacy. As a result, almost 70 new academic advisors have been added since 2009.

FIU Mastery Math Lab & Course Redesign

FIU's Mastery Math Lab is an institutional initiative to improve success in College Algebra, the course that was the most failed course at the university with average pass rates of 33%. Through the establishment of the Lab and concurrent course redesign, in only 3 years College Algebra pass rates have doubled; the model has been adapted to online courses; and the mastery model of instruction is now an example for all lower division math and science courses as part of FIU's strategic plan. Essential to the redesign are the faculty learning communities which worked together to create positive learning environments and cohesive, consistent curricula. Success to date includes increasing pass rates in critical math courses by as much as 25%.

Learning Assistant Program

The LA Program provides undergraduates with the opportunity to experience the reward of teaching, develop skills to engage in the challenges of effective instruction, and simultaneously serve as dedicated and skilled facilitators in active classrooms. With the aid of LAs, the transformation of introductory science and mathematics courses involves creating environments in which students can interact with one another, engage in collaborative problem solving, and articulate and defend their ideas. At the same time, the undergraduate LAs engage in live teaching experiences (while being paid), and thus decide if teaching will be part of their future career. FIU hosts the nation's largest LA program, with 239 LAs serving in 155 course sections across 10 STEM departments, impacting over 10,075 enrollments in Fall 2015.

Modeling Instruction: Physics

Modeling is a student-centric, constructivist approach whereby students build their physics knowledge by developing models through guided activities in a studio format. Students learn to communicate their ideas, work within groups, solve problems, use powerful representational tools for doing science, and participate in a science community. All of these are crucial skills in most science careers. The vision for modeling students is that they become self-sustaining learners and scientists, adept at group work, armed with mature problem solving approaches, and skilled in the theoretical tools of physics, in order to enhance their success in future courses and careers.

Active Learning Classrooms

Active learning classrooms are designed to optimize the way modeling instruction classes are taught. Data shows there is a positive attitudinal shift in the way students perceive introductory physics course that use modeling instruction. It means students are learning more and have better attitudes toward the science that they are learning. The classrooms have mobile tables, chairs and whiteboards to facilitate small and large group participation as well as engage students in activities that promote problem-solving, analysis, experimentation and discussion and other effective instructional techniques for the classroom.