

Academic Department Student Success Plan Update 2015-2018

Department: Mathematics and Computer Science

Department Chair: Liz Brown

Department Mission: The mission of the Department of Mathematics and Computer Science is to provide quality education in mathematics, computer science, mathematics education, information technology, and related fields and to expand knowledge in these fields. The Department strives to develop the thinking skills of students and to provide students with the foundational knowledge, skills, and relevant experiences to succeed in their chosen professions. This effort is sustained and informed by the faculty's pursuit of original research and scholarly activities. The faculty also has the mission of preparing quality teachers for the schools.

Department Freshmen (1st year) Retention¹ Goal(s):

(A) Improve success rates in freshman classes for majors so that students remain at ISU, even if they change programs. (action steps are 1 and 2 below)

(B) Help freshmen make connections to faculty and other students in the department. (action steps 1 and 3 below)

Action Steps (with dates & person(s) responsible):

(1) Have a "peer assistant" embedded in each of our freshman classes for majors. This includes CS 151, CS 201, CS 202, MATH 122, MATH 131, and MATH 132. The purpose of this initiative is to help our majors navigate their first year of college while learning the foundational concepts found in computer science, mathematics, and mathematics education. Hence, the peer assistant will help freshmen with both the content of the courses as well as how to be successful in the major and in college in general. We are awaiting continuing funding from the provost. Once we have that, instructors of the sections of these courses (R. Sternfeld, J. Kinne, J. Exoo, D. Bowman, J. Frost, R. Johnson, N. Hopkins, R. Oberste-Vorth) will identify a successful undergraduate student who will attend the section and hold "office hours" outside of class to meet with freshmen. Fall 2015 and Spring 2016 and ongoing.

(2) In addition, we are beginning plans to examine the courses in our freshman curriculum to address consistency across sections and alignment with our upper level courses. We are investigating a course transformation for CS 151 and MATH 131/132 to improve our DFW rates and to ensure that students are leaving those courses with the knowledge and skills to be successful in their next coursework. In mid fall 2015, the CS curriculum committee (chaired by Jeff Kinne) and the Math curriculum committee (chaired by Henjin Chi) will begin a study of CS 151 and MATH 131/132 for possible application to the Course Transformation Academy. If we determine that this is important, we will begin the transformation work in Spring 2016, to be piloted in Fall 2016.

¹ Departments w/o undergraduates can adapt the retention and persistence to completion sections to serve their graduate student success purposes or alternatively, integrate into the Other Goal(s), Action Steps, and Benchmarks of focal interest to department section at the end of the template.

(3) Revive the math honor society Pi Mu Epsilon and/or revive the Indiana State Sycamore Council of Teachers of Mathematics to ensure that we have department clubs/organizations for students in each of our majors. Jeff Kinne is the faculty advisor for the CS student club and we would like to see a similar organization for our other majors. Spring 2016 and ongoing, Jodi Frost, Derrick Bowman, Patti Dreher

<i>Retention Benchmarks²</i>	Fall 2012 Cohort:	Fall 2013 Cohort:	Fall 2014 Cohort:
(by latest department)	61.76%	64.52%	61.11%
	Fall 2015 target:	Fall 2016 target:	Fall 2017 target:
	65%	70%	75%

Other Freshmen Retention related benchmarks of focal interest to department³

Goal: As a department, we are also very interested in the success of students who are not in our programs, but who are taking courses as part of their programs.

Action Step: We are currently engaged in a Course Transformation for both MATH 102 and MATH 115. Our goal is to improve the DFW rates for our additional service classes. The department chair will discuss the needs of the programs using our service courses and bring those discussions to the curriculum committees for possible modifications to the courses. Liz Brown, Fall 2015—discuss with program directors and bring charges to Curriculum Committees; CS 151, 256, 260 CS Curriculum Committee (chaired by Jeff Kinne), Spring 2016; MATH 123, 129 Math Curriculum Committee (chaired by Henjin Chi), Spring 2016; MATH 241 Math Education Curriculum Committee (chaired by Winnie Ko), Spring 2016.

Department Persistence to Completion Goal(s):

Improve student completion rates, both for 4 year and six year graduation.

Action Steps (with dates & person(s) responsible):

(1) Require juniors and seniors to meet with their academic advisor to do a degree audit to ensure that they are on track for graduation.

² Department level current and historical retention and completion benchmark data to be integrated into the plan can be found through Blue Reports: <http://irt2.indstate.edu/cms/ir/blue-reports/>. Default is “latest department”; change to “original department” if that is the desired benchmark data.

³ A retention and completion rate is an essential benchmark, but it is not necessarily the only benchmark of interest to a department. Others of interest to the department can be integrated as well.

Starting Fall 2015 and ongoing: Ramachandra Abhyankar, Robert Sternfeld, Henjin Chi, Robert Johnson, Jodi Frost, Winnie Ko (undergraduate advisors in the CS, math, and math ed programs.

(2) Keep upper classmen involved in the department outside of their classes.

See action steps 1 and 3 for freshmen—these will also help our upperclassmen as well as the tutoring center goal below

(3) Ensure that the “right” faculty are teaching critical courses in the majors, ensure alignment between prerequisite and subsequent courses, closely review curriculum and program assessment data to determine necessary program modifications.

Starting Fall 2015 and ongoing: Liz Brown, Henjin Chi, Jeff Kinne, Winnie Ko.

<i>Completion Benchmarks</i>	Fall 2009 Cohort:	Fall 2010 Cohort:	Fall 2011 Cohort:
(by latest department)	26.47%	25.00%	21.43%
	Fall 2015 target:	Fall 2016 target:	Fall 2017 target:
	23%	28%	33%

Other Persistence to Completion related benchmarks of focal interest to department

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Other Goal(s), Action Steps, and Benchmarks of focal interest to department⁴:

Bring the Math Tutoring Center back to the Department in the basement of Root Hall.

Why:

- (1) Closer connections between faculty and tutors
- (2) Sending consistent messages to students in our courses
- (3) Proximity to the place where the majority of the department courses are taught
- (4) We will provide leadership and professional development to the tutors
- (5) Consistency among tutoring in remedial math and college-level math courses

This could be accomplished in a revenue-neutral way if the current resources in the MWC devoted to mathematics were shifted to the Department. We could have this fully functioning by the Fall of 2016. Liz Brown, Christine Taylor

⁴ Departments may have student success related goals, action steps, and benchmarks that do not fit neatly into the other categories. If so, feel free to place them here.

If this move is not supported, we need to create a closer working relationship between the Math part of the Math and Writing Center, particularly working on faculty confidence with the quality of tutoring, Department oversight of who is hired to tutor mathematics, department support of tutor training and professional development.