

Legislative Report

Senior Year Plus and STEM



January 15, 2017

State Board of Education

State of Iowa
Department of Education
Grimes State Office Building
400 E. 14th Street
Des Moines, IA 50319-0146

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LEGISLATIVE REQUIREMENT - IOWA CODE 261E.3 J

All eligible postsecondary institutions providing programming under this chapter shall include the unique student identifier assigned to students while in the kindergarten through grade twelve system as a part of the institution's student data management system. Eligible postsecondary institutions providing programming under this chapter shall cooperate with the department on data requests related to the programming. All eligible postsecondary institutions providing programming under this chapter shall collect data and report to the department on the proportion of females and minorities enrolled in science, technology, engineering, and mathematics-oriented educational opportunities provided in accordance with this chapter. The department shall submit the programming data and the department's findings and recommendations in a report to the general assembly annually by January 15.

ADVANCED PLACEMENT ENROLLMENT IN STEM

ADVANCED PLACEMENT COURSE ENROLLMENT BY RACE/ETHNICITY

Race/Ethnicity	2013-14				2014-15				2015-16			
	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent
Asian	807	5.5%	314	7.4%	870	5.6%	341	7.4%	939	5.7%	404	8.1%
Black	625	4.2%	127	3.0%	707	4.5%	134	2.9%	722	4.4%	159	3.2%
Hispanic	990	6.7%	239	5.7%	1,212	7.7%	245	5.3%	1,348	8.2%	270	5.4%
Multi-racial	431	2.9%	104	2.5%	475	3.0%	111	2.4%	573	3.5%	162	3.3%
Native American	39	0.3%	12	0.3%	42	0.3%	12	0.3%	33	0.2%	10	0.2%
Pacific Islander	8	0.1%	2	0.1%	18	0.1%	3	0.1%	19	0.1%	4	0.1%
White	11,911	80.4%	3,422	81.1%	12,329	78.8%	3,774	81.7%	12,871	78.0%	3,979	79.8%
Total	14,811	100.1%	4,220	100.1%	15,653	100.0%	4,620	100.1%	16,505	100.1%	4,988	100.1%

Source: Iowa Department of Education, Student Reporting in Iowa collection

* May not equal 100% due to rounding

ADVANCED PLACEMENT COURSE ENROLLMENT BY GENDER

Gender	2013-14				2014-15				2015-16			
	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent
Female	8,001	54.0%	1,948	46.2%	8,559	54.7%	2,089	45.2%	9,003	54.6%	2,248	45.1%
Male	6,810	46.0%	2,272	53.8%	7,094	45.3%	2,531	54.8%	7,502	45.5%	2,740	54.9%
Total	14,811	100.1%	4,220	100.0%	15,653	100.0%	4,620	100.0%	16,505	100.1%	4,988	100.0%

Source: Iowa Department of Education, Student Reporting in Iowa collection

* May not equal 100% due to rounding

CONCURRENT ENROLLMENT IN STEM

CONCURRENT COURSE ENROLLMENT BY RACE/ETHNICITY

Race/Ethnicity	2013-14				2014-15				2015-16			
	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent
Asian	1,076	2.7%	556	3.6%	1,118	2.7%	571	3.7%	1,219	2.8%	564	3.7%
Black	999	2.5%	412	2.7%	1,089	2.7%	497	3.2%	1,224	2.8%	455	3.0%
Hispanic	2,862	7.2%	1,152	7.5%	2,985	7.3%	1,265	8.2%	3,154	7.3%	1,329	8.7%
Multi-racial	788	2.0%	325	2.1%	837	2.1%	344	2.2%	981	2.3%	351	2.3%
Native American	120	0.3%	38	0.3%	128	0.3%	48	0.3%	116	0.3%	47	0.3%
Pacific Islander	31	0.1%	8	0.1%	45	0.1%	15	0.1%	39	0.1%	14	0.1%
White	34,155	85.3%	12,909	83.8%	34,722	84.9%	12,741	82.3%	36,324	84.4%	12,543	82.0%
Total	40,031	100.1%	15,400	100.1%	40,924	100.1%	15,481	100.0%	43,057	100.0%	15,303	100.1%

Source: Iowa Department of Education, Student Reporting in Iowa collection

* May not equal 100% due to rounding

CONCURRENT COURSE ENROLLMENT BY GENDER

Gender	2013-14				2014-15				2015-16			
	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent
Female	19,426	48.5%	6,702	43.5%	19,831	48.5%	6,558	42.4%	21,155	49.1%	6,593	43.1%
Male	20,605	51.5%	8,698	56.5%	21,093	51.5%	8,923	57.6%	21,902	50.9%	8,710	56.9%
Total	40,031	100%	15,400	100%	40,924	100.0%	15,481	100.0%	43,057	100.0%	15,303	100.0%

Source: Iowa Department of Education, Student Reporting in Iowa collection

* May not equal 100% due to rounding

POSTSECONDARY ENROLLMENT OPTIONS ENROLLMENT IN STEM

POSTSECONDARY COURSE ENROLLMENT BY RACE/ETHNICITY

Race/Ethnicity	2013-14				2014-15				2015-16			
	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent
Asian	100	2.1%	44	3.7%	105	2.2%	46	4.2%	113	2.3%	62	5.2%
Black	40	0.9%	4	0.3%	27	0.6%	4	0.4%	29	0.6%	4	0.3%
Hispanic	150	3.2%	39	3.3%	132	2.8%	38	3.4%	148	3.0%	19	1.6%
Multi-racial	62	1.3%	18	1.5%	67	1.4%	16	1.4%	72	1.4%	23	1.9%
Native American	12	0.3%	3	0.3%	12	0.3%	2	0.2%	10	0.2%	-	0.0%
Pacific Islander	4	0.1%	1	0.1%	4	0.1%	2	0.2%	4	0.1%	1	0.1%
White	4,299	92.1%	1,072	90.8%	4,380	92.7%	1,001	90.3%	4,639	92.5%	1,090	90.9%
Total	4,667	100%	1,181	100%	4,727	100.1%	1,109	100.1%	5,015	100.1%	1,199	100.0%

Source: Iowa Department of Education, Student Reporting in Iowa collection

* May not equal 100% due to rounding

POSTSECONDARY COURSE ENROLLMENT

Gender	2013-14				2014-15				2015-16			
	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent	Number of Courses	Percent*	Number of STEM	Percent
Female	2,813	60.3%	645	54.6%	2,893	61.2%	575	51.9%	3,114	62.1%	652	54.4%
Male	1,854	39.7%	536	45.4%	1,834	38.8%	534	48.2%	1,901	37.9%	547	45.6%
Total	4,667	100%	1,181	100%	4,727	100.0%	1,109	100.1%	5,015	100.0%	1199	100.0%

Source: Iowa Department of Education, Student Reporting in Iowa collection

* May not equal 100% due to rounding

FINDINGS AND RECOMMENDATIONS

Findings

Data contained in this report shows an increase in the overall enrollment trends for both Senior Year Plus and STEM courses across the 2013-14 and 2015-16 school years. In 2015-16, Iowa students took 16,505 advanced placement (AP) courses, 43,057 Concurrent Enrollment, and 5,015 postsecondary enrollment option (PSEO) courses. This compares to 14,811 AP courses, 40,031 Concurrent, and 4,667 PSEO courses during the 2013-14 school year.

Over this same period, results are mixed when examining the number of courses which fall in the STEM area. The number of STEM courses in AP saw an increase, while there were slight declines in Concurrent and PSEO courses. The percent of STEM courses in each of these areas were also mixed. In 2013-14, STEM courses accounted for 28.5 percent of AP, 38 percent of Concurrent, and 25.3 percent of PSEO courses. In 2015-16, STEM courses accounted for 30.2 percent of AP, 35.5 of Concurrent, and 24 percent of PSEO.

Recommendations

In July of 2011, Governor Branstad signed Executive Order 74 creating the Iowa Governor's STEM Advisory Council. The STEM Council focuses on enhancing the Iowa's PK-12 talent pipeline which will result in increased interest in a STEM career. The data in this report provide important data to help inform this goal.

During the 2017 Condition of the State address, Governor Branstad proposed an important computer science initiative which would help enhance overall interest and programming in STEM. This initiative calls for statewide computer science standards and the creation of an incentive fund for teacher training. The goal of this initiative is to increase the computer science offerings statewide including having elementary schools offer introductory courses in this area, and expanded course offerings in middle school, and enhanced programming in all high schools.