Table of Contents

Appendix A. Summary of Developmental	Participation by MAU1
University of Alaska Anchorage	1
University of Alaska Fairbanks	2
University of Alaska Southeast	4
Appendix B. Developmental Student Succ	cess6
University of Alaska Anchorage	6
University of Alaska Fairbanks	7
University of Alaska Southeast	
Appendix C. Developmental Student Rete	ention and Graduation9
University of Alaska Anchorage	9
University of Alaska Fairbanks	11
University of Alaska Southeast	
Appendix D. Cost of Delivering Develop	nental Education15
University of Alaska Anchorage	
University of Alaska Fairbanks	
University of Alaska Southeast	

Appendix A. Summary of Developmental Participation by MAU

University of Alaska Anchorage

Recent first-time freshmen at UAA enrolled in four-year degree programs have been relatively steady in preparatory course enrollment for those who require both math and English. Those who are enrolled in math only and English only have increased since FY08. For recent first-time freshmen in two-year programs, those enrolled in both math and English developmental coursework have declined while those in math only and English only have increased.





University of Alaska Fairbanks

UAF does not have significant four-year degree seeking freshmen enrollment in preparatory English courses. Since fall 2008, the highest proportion of four-year degree seeking, recent first-time freshmen enrollment in English only preparatory courses was 1.8%. In comparison, in fall 2012, 25.1% of four-year degree seeking, recent first-time freshmen were enrolled in preparatory math classes. Due to the extremely low numbers for preparatory English enrollment, very few freshmen were enrolled in both math and English preparatory courses.





UAF Recent First-Time Freshmen, Two-Year Preparatory, Math & English



UAF Recent First-Time Freshmen, Two-Year Preparatory, English Only 23 6.9% 18 Tota 20 16 15 3 Level 2 10 5 Level 1 Level 3 Fall 2010 Fall 2011

UAF Other Students, Two-Year Preparatory, Math & English



UAF Other Students, Two-Year Preparatory, English Only



UAF Recent First-Time Freshmen, Two-Year Preparatory, Math Only





University of Alaska Southeast

UAS has shown a strong decrease in the number of four-year degree seeking first-time freshmen enrolled in math and English preparatory courses, going from 26.5% to 18.0% since fall 2008. English only preparatory students have shown an even larger drop from 18.6% to 4.5%. In comparison, math only students have increased over five years. Unlike the four-year degree seeking freshmen, a higher proportion of recent first-time freshmen seeking a two-year degree are enrolled in preparatory math and English, increasing from 19.7% to 30.6% since fall 2008.



Reference 34



Appendix B. Developmental Student Success¹

University of Alaska Anchorage

Table 1. Four-Year Degree Seeking First-Time Freshmen Course Completion by Preparatory Level

Level	2008	2009	2010	2011	2012
ENGL 1	74.6%	86.9%	71.9%	81.8%	75.3%
ENGL 2	77.1%	72.9%	79.6%	78.0%	75.4%
ENGL 3	73.4%	78.1%	70.3%	72.7%	77.7%
MATH 1	45.8%	60.8%	52.8%	51.9%	48.8%
MATH 2	61.4%	53.5%	57.9%	56.1%	57.9%
MATH 3	55.6%	51.3%	67.3%	59.1%	64.5%
Non Preparatory	73.1%	70.1%	72.1%	72.5%	71.3%

Since fall 2008, the course completion rate for four-year degree seeking, first-time freshmen in non-preparatory courses has undergone a small decrease. Most of the levels have been relatively steady in completion rates expect for math level three which increased significantly.

Level	2008	2009	2010	2011	2012
ENGL 1	64.7%	65.0%	40.0%	66.7%	64.5%
ENGL 2	59.6%	63.4%	75.4%	64.5%	57.3%
ENGL 3	67.7%	72.3%	68.6%	66.7%	63.4%
MATH 1	47.2%	61.5%	55.1%	55.3%	62.5%
MATH 2	48.8%	56.8%	63.8%	52.4%	62.2%
MATH 3	48.4%	52.0%	61.9%	75.0%	45.5%
Non Preparatory	62.0%	65.2%	67.0%	63.9%	63.3%

Table 2. Two-Year Degree Seeking Recent First-Time Freshmen Course Completion by Preparatory Level

The non-preparatory course completion rate for two-year degree seeking, first-time freshmen is significantly less than that of four-year degree seekers. With the exception of math level one, preparatory two-year degree seeking students have lower completion rates than non-preparatory four-year degree seeking students.

¹ Two-year degrees in Appendix B and C do not include AASs, certificates, or OECs.

2008	2009	2010	2011	2012
60.0%	100.0%	66.7%	83.3%	100.0%
90.9%	63.6%	87.0%	90.0%	83.3%
	0.0%	55.6%	0.0%	
73.7%	85.2%	66.7%	81.8%	92.9%
66.7%	67.2%	65.1%	64.1%	66.0%
76.2%	60.7%	70.0%	67.5%	78.8%
77.0%	78.8%	78.9%	75.8%	75.6%
	2008 60.0% 90.9% 73.7% 66.7% 76.2% 77.0%	2008 2009 60.0% 100.0% 90.9% 63.6% 0.0% 73.7% 85.2% 66.7% 67.2% 76.2% 60.7% 77.0% 78.8%	2008 2009 2010 60.0% 100.0% 66.7% 90.9% 63.6% 87.0% 0.0% 55.6% 73.7% 85.2% 66.7% 66.7% 67.2% 65.1% 76.2% 60.7% 70.0% 77.0% 78.8% 78.9%	2008 2009 2010 2011 60.0% 100.0% 66.7% 83.3% 90.9% 63.6% 87.0% 90.0% 0.0% 55.6% 0.0% 73.7% 85.2% 66.7% 81.8% 66.7% 67.2% 65.1% 64.1% 76.2% 60.7% 70.0% 67.5% 77.0% 78.8% 78.9% 75.8%

University of Alaska Fairbanks

 Table 5. Four-Year Degree Seeking First-Time Freshmen Course Completion by

 Preparatory Level²

The completion rates for four-year degree seeking, first-time freshmen enrolled in nonpreparatory classes has decreased slightly between fall 2008 and 2012. Course completions for English and math level one courses increased significantly over the past five years.

Level	2008	2009	2010	2011	2012
ENGL 1	59.5%	70.8%	52.6%	82.6%	60.0%
ENGL 2	61.9%	67.8%	65.4%	68.3%	67.8%
ENGL 3	0.0%	70.0%	66.7%	33.3%	
MATH 1	53.2%	53.3%	61.2%	50.6%	54.2%
MATH 2	40.3%	45.6%	32.9%	35.3%	34.3%
MATH 3	44.4%	38.9%	47.2%	31.3%	36.6%
Non Preparatory	54.5%	55.0%	53.3%	53.8%	48.5%

Table 6. Two-Year Degree Seeking First-Time Freshmen Course Completion by Preparatory Level

The course completion rate for first-time freshmen enrolled in a two-year program is significantly less than those students enrolled in a four-year program for each course level. Several of the levels have shown a drop in course completion over the past five years.

²Blanks in Appendix B and C tables indicate that there were no students in that cohort, while 0 indicates that there were students in the cohort.

University of Alaska Southeast

Table 9. Four-Year Degree Seeking Recent First-Time Freshmen Course Completion by Preparatory Level

Level	2008	2009	2010	2011	2012
ENGL 2	70.0%	33.3%	65.5%	64.0%	100.0%
ENGL 3	65.9%	61.8%	70.3%	62.5%	85.0%
MATH 1	53.3%	47.1%	68.4%	44.0%	83.3%
MATH 2	56.1%	51.6%	56.8%	46.9%	60.0%
Non Preparatory	61.5%	73.3%	74.6%	69.8%	80.4%

Course completion for non-preparatory courses has undergone a large increase from fall 2008 to 2012, going from 61.5% to 80.4%. The completion rate for each preparatory level has also increased over the past five years.

Table 9. Two-Year Degree Seeking Recent First-Time Freshmen Course Completion by Preparatory Level

Level	2008	2009	2010	2011	2012
ENGL 2	33.3%	60.0%	52.9%	100.0%	55.6%
ENGL 3	53.8%	71.4%	53.3%	75.0%	70.0%
MATH 1	71.4%	77.8%	55.0%	77.8%	45.5%
MATH 2	83.3%	56.3%	62.5%	53.8%	58.3%
Non Preparatory	62.5%	73.1%	69.7%	56.0%	70.5%

Course completion rates for recent first-time freshmen enrolled in a two-year program are significantly less than those for students enrolled in a four-year program. There is a significant amount of fluctuation in the completion rates on a year to year basis for each level.

Appendix C. Developmental Student Retention and Graduation

University of Alaska Anchorage

Degree	Status	2007	2008	2009	2010	2011
Two-Year	Preparatory	53.3%	53.6%	54.1%	53.7%	51.1%
	Non-Preparatory	42.7%	50.0%	49.6%	44.7%	54.1%
Four-Year	Preparatory	67.4%	68.8%	63.8%	63.3%	64.8%
	Non-Preparatory	71.5%	74.6%	72.6%	73.8%	73.7%
Grand Total		66.0%	67.9%	64.5%	64.8%	65.2%

Table 1. First-Time Freshmen Retention³

Non-preparatory first-time freshmen are the group most likely to be retained with an overall retention rate of 73.7% for four-year degree seekers entering in fall 2011. While the retention rates for non-preparatory first-time freshmen have increased over the past five years, the rates for preparatory first-time freshmen have dropped.

Preparatory Type	Level	FY08	FY09	FY10	FY11	FY12
English and Math	1	*		*	*	*
	2	12% (26)	3% (32)	5% (39)	8% (40)	0% (31)
	3	15% (92)	15% (93)	10% (118)	11% (106)	12% (91)
English Only	1	*	0% (6)	*	*	20% (5)
	2	12% (17)	22% (9)	13% (16)	15% (13)	29% (14)
	3	20% (59)	35% (63)	27% (62)	16% (61)	22% (63)
Math Only	1	22% (18)	0% (20)	16% (25)	0% (17)	9% (35)
	2	19% (48)	18% (50)	15% (55)	17% (46)	14% (59)
	3	24% (86)	22% (82)	29% (89)	24% (99)	27% (113)
Non Preparatory		31% (427)	32% (449)	31% (495)	34% (474)	32% (552)
indiantas call suppressed due t	o N∠5					

Table 2. Six Year Four-Year Degree Seeking Graduation Rate

* indicates cell suppressed due to N<5.

Students without a preparatory level are much more likely to complete a four-year degree in six years than those enrolled in preparatory courses. Being enrolled in math and English courses significantly decreases the chances of completing a degree. Only 12.1% of level three math and English students graduated in the most recent cohort compared with 22.2% of English only level three students and 26.5% of math only level three students. It is important to note that initial student cohorts with less then five students were removed from the table above. For 'English only' and 'math only' categories, students enrolled in level 1 preparatory courses, were the ones who did not graduate. Furthermore, while 20 students who needed help in 'Math only' did not graduate in FY09, only 6 students in 'English only' category did not succeed. That fact reaffirms the notion that students less prepared in math have a lower chance to succeed at the university.

³Contains part-time students.

Preparatory Type	Level	FY08	FY09	FY10	FY11	FY12
English and Math	1	*	*	*	*	0% (5)
	2	8% (12)	0% (18)	11% (28)	0% (14)	5% (20)
	3	0% (19)	0% (20)	3% (36)	2% (48)	4% (46)
English Only	1	*	*	*	*	
	2	*	13% (8)	0% (8)	0% (6)	14% (7)
	3	0% (10)	9% (11)	8% (12)	12% (25)	10% (29)
Math Only	1	0% (7)	8% (12)	13% (8)	10% (10)	5% (19)
	2	15% (13)	0% (10)	11% (18)	12% (26)	10% (20)
Non-Preparatory		11% (55)	7% (56)	9% (44)	8% (53)	15% (78)
ndicates cell sunnressed due to	0 N/5					

Table 3. Three Year Two-Year Degree Seeking Graduation Rate

* indicates cell suppressed due to N<5.

Very few freshmen who enter as two-year degree seeking students complete the degree within three years. For the most recent cohort, the group with the highest graduation rate was those without a preparatory level, and that group had a graduation rate of only 15.4%. When analyzing the figures for students who did not graduate, it appears that these students are showing in all three preparatory levels for 'English and math' and 'English only' categories.

	Degree	Туре	FY08	FY09	FY10	FY11	FY12
	Two-Year	Preparatory	1.3 (27)	3.3 (27)	2.2 (52)	2.0 (46)	2.3 (69)
		Non-Preparatory	1.3 (20)	2.0 (16)	1.2 (16)	18 (1.0)	1.3 (31)
		Math and English	1.5 (14)	3.7 (14)	2.3 (20)	2.0 (21)	2.3 (33)
		English Only	*	2.3 (9)	2.3 (13)	1.7 (7)	2.3 (17)
		Math Only	2.7 (10)	*	1.3 (19)	2.7 (18)	2.3 (19)
		Math 1	*	*	*	*	*
		Math 2	2.0 (9)	*	1.5 (16)	3.2 (14)	2.0 (17)
		Math 3				*	
	Four-Year	Preparatory	4.3 (227)	4.7 (253)	4.7 (234)	4.7 (267)	5.0 (263)
		Non-Preparatory	4.3 (167)	4.3 (173)	4.0 (172)	4.3 (180)	4.3 (206)
		Math and English	4.3 (79)	5.0 (98)	5.0 (79)	5.0 (90)	5.3 (91)
		English Only	4.3 (45)	4.3 (37)	4.3 (37)	5.3 (31)	5.0 (28)
		Math Only	4.3 (103)	5.0 (118)	4.3 (118)	4.3 (146)	5.0 (144)
		Math 1	*		*	*	*
		Math 2	*	3.7 (8)	4.7 (10)	6.0 (9)	4.7 (7)
		Math 3	4.3 (98)	5.0 (110)	4.3 (106)	4.3 (135)	5.0 (136)
* indi	cates cell suppressed	due to N<5.					

Table 4. Median Time to Degree⁴

⁴ Table only includes first-time freshmen and does not includee BIs.

Students not requiring development education complete degrees more quickly than those who need preparatory courses. The median time to degree for four-year preparatory students has increased significantly since FY08, while the median for four-year, non-preparatory students has remained stable.

University of Alaska Fairbanks

Degree	Status	2007	2008	2009	2010	2011
Two-Year	Preparatory	47.1%	52.6%	54.8%	53.3%	53.2%
	Non-Preparatory	43.7%	52.6%	44.2%	45.7%	50.0%
Four-Year	Preparatory	66.9%	78.7%	75.3%	67.6%	75.4%
	Non-Preparatory	78.1%	80.3%	84.0%	81.2%	81.1%
Grand Total		67.4%	68.8%	69.2%	64.8%	69.1%

Table 5. First-Time Freshmen Retention⁵

Both preparatory and non-preparatory first-time freshmen at UAF have shown an increase in retention rates over the past five years in two-year and four-year degree programs. While the nonpreparatory first-time freshmen enrolled in a four-year degree program have higher retention rates than those who are preparatory, the reverse is true for those enrolled in two-year programs.

Preparatory Type	Level	FY08	FY09	FY10	FY11	FY12
Math and English	1	*			*	
	2	0% (24)	9% (22)	0% (19)	6% (18)	0% (26)
	3	14% (7)	13% (8)	*	*	0% (9)
English Only	1	*	*			
	2	*	0% (7)	14% (7)	*	*
Math Only	1	33% (6)	*	8% (13)	11% (9)	13% (8)
	2	28% (43)	7% (42)	20% (54)	25% (76)	29% (41)
	3	18% (77)	25% (100)	30% (97)	21% (82)	23% (77)
Non-Preparatory		32% (329)	40% (360)	38% (324)	37% (339)	40% (326)
ndicates cell suppressed due	to NZS					

Table 6. Six Year Four-Year Degree Seeking Graduation Rate

* indicates cell suppressed due to N<5.

Students without a preparatory level have increased their graduation rate significantly from FY08 to FY12, going from 31.9% to 39.9%. The graduation rates for preparatory students vary significantly from year to year, but remain well below the rate for those without a preparatory level. The highest numbers of students who did not graduate are showing in 'Math and English' level 2 preparatory courses. Interestingly, a certain percentage of the initial cohorts for the 'Math only' category successfully graduated compared to 'English only' category, where level 2 students in FY09 (7 of them) did not graduate (note, cohorts with less than 5 students were removed from the table).

⁵Contains part-time students.

Preparatory Typ	be Level	FY08	FY09	FY10	FY11	FY12
Math and Englis	sh 1	*		*	*	*
-	2	0% (14)	0% (7)	0% (5)	10% (10)	10% (10)
	3	*	*		*	*
English Only	1			*	*	*
	2		*			*
	3		*			*
Math Only	1	0% (8)	0% (8)	0% (3)	0% (6)	7% (15)
	2	9% (22)	0% (12)	0% (7)	10% (10)	0% (10)
	3	0% (13)	0% (5)	0% (1)	25% (4)	0% (8)
Non-Preparator	у	0% (30)	0% (18)	0% (20)	0% (17)	0% (24)
* indicates cell suppressed	due to N<5.					

Table 7. Three Year Two-Year Degree Seeking Graduation Rate

Students at UAF rarely complete two-year degrees regardless of their preparatory status. No non-preparatory student completed a two-year degree in the past five years.

Degree	Туре	FY08	FY09	FY10	FY11	FY12
Two-Year	Preparatory	2.3 (23)	3.3 (10)	2.2 (12)	2.3 (17)	2.7 (11)
	Non-Preparatory	*	*	*	*	1.3 (6)
	Math and English	4.7 (8)	*	*	4.5 (4)	2.3 (5)
	English Only	*			*	
	Math Only	2.3 (13)	3.3 (7)	3.0 (9)	2.3 (12)	2.8 (6)
	Math 1			*		*
	Math 2	*	*	*	*	*
	Math 3	2.3 (10)	4.2 (6)	3.0 (7)	2.3 (9)	3.0 (5)
Four-Year	Preparatory	4.3 (100)	4.3 (114)	4.3 (103)	5.2 (116)	4.3 (117)
	Non-Preparatory	4.3 (150)	4.3 (149)	4.3 (173)	4.3 (171)	4.3 (184)
	Math and English	4.3 (11)	5.0 (17)	5.5 (16)	5.0 (9)	5.7 (17)
	English Only	4.2 (8)	*	6.3 (5)	*	4.8 (6)
	Math Only	5.0 (81)	4.3 (95)	4.3 (82)	5.3 (103)	4.3 (94)
	Math 1		*			*
	Math 2	7.0 (17)	5.8 (14)	4.7 (7)	6.3 (13)	5.0 (11)
	Math 3	4.3 (64)	4.3 (79)	4.3 (75)	5.0 (90)	4.3 (82)

Table 8. Median Time to Degree⁶

 \ast indicates cell suppressed due to N<5.

⁶ Table only includes first-time freshmen and does not includee BIs.

The median time to degree for four-year students is fairly similar for those who are preparatory and those who are not. Those who need math and English preparatory courses have a much higher median time to degree than the rest of the student body. There is large difference in the median time to degree for math 2 and math 3.

University of Alaska Southeast

Degree	Status	2007	2008	2009	2010	2011
Two-Year	Preparatory	60.0%	39.1%	56.4%	44.7%	46.4%
	Non-Preparatory	50.0%	50.0%	35.3%	35.0%	38.5%
Four-Year	Preparatory	48.5%	59.2%	52.5%	62.7%	53.4%
	Non-Preparatory	62.5%	72.3%	83.9%	67.2%	68.0%
Grand Total		55.6%	59.7%	61.8%	58.0%	55.3%

Table 9. First-Time Freshmen Retention⁷

The retention rates for all student groups vary significantly from year to year. For example, baccalaureate degree seeking freshmen without a preparatory level had a rate of 75.5% in 2008 which increased to 83.3% in 2009 and then dropped down to 69.6% in 2010.

Preparatory Type	Level	FY08	FY09	FY10	FY11	FY12
Math and English	1	*		*		
	2	*	*	0% (9)	0% (6)	0% (7)
	3	6% (16)	20% (15)	8% (13)	13% (16)	8% (13)
English Only	1	*	*	*		
	2			*	*	*
	3	29% (21)	46% (13)	25% (16)	10% (10)	0% (10)
Math Only	1	*		*	*	*
	2	*	*	20% (10)	30% (20)	13% (15)
Non-Preparatory		13% (31)	31% (32)	16% (31)	34% (41)	17% (30)
* indicates cell suppressed due	to N<5.					

Table 10. Six Year Four-Year Degree Seeking Graduation Rate

No baccalaureate degree seeking freshmen enrolled in preparatory English levels one and two completed a degree in six years within the past five cohorts. Non-preparatory students are most likely to complete, though the rate varies a great deal from year to year. Note, the table above excludes cohorts with less than five students. As seen from the table, students taken 'Math and English' courses are the ones who don't graduate the most.

⁷ Contains part-time students.

Preparatory Type	Level	FY08	FY09	FY10	FY11	FY12
Math and English	2	6 (0%)	5 (0%)	*	*	*
	3	5 (0%)	7 (0%)	5 (20%)	0% (6)	28% (7)
English Only	2	*	*			*
c	3	*	*	5 (0%)	*	17% (6)
Math Only	1	*	*		*	
2	2	14% (7)	*	29% (7)	*	*
Non-Preparatory		11% (9)	0% (11)	0% (5)	25% (4)	20% (10)
 diantas call aummassad dua	10 N <5					

Table 11. Three Year Two-Year Degree Seeking Graduation Rate

* indicates cell suppressed due to N<5.

No freshmen enrolled in the lowest level of any of the three preparatory groups completed an AA or AS within three years. Those enrolled in math level 2 showed a higher graduation rate for several cohorts than those without a preparatory level. The table above shows that the groups with a 0% graduation rate have rather small cohorts of 5 to 7 people compared to 9 to 12 students in non-preparatory cohorts.

Degree	Туре	FY08	FY09	FY10	FY11	FY12
Two-Year	Preparatory	2.7 (8)	3.7 (9)	2.7 (7)	2.0 (9)	2.0 (15)
	Non-Preparatory	*	*	*	*	*
	Math and English	2.5 (6)	*	*	*	*
	English Only		*		*	*
	Math Only	*	*	*	*	1.7 (7)
	Math 1					*
	Math 2	*	*	*	*	1.7 (6)
Four-Year	Preparatory	4.3 (26)	4.8 (20)	4.5 (20)	5.0 (18)	4.3 (12)
	Non-Preparatory	4.3 (10)	4.3 (9)	4.0 (21)	5.7 (8)	3.3 (14)
	Math and English	5.3 (13)	4.7 (12)	5.3 (8)	6.0 (7)	*
	English Only	4.3 (12)	*	4.3 (5)		*
	Math Only	*	*	4.3 (7)	5.0 (11)	4.3 (8)
	Math 1		*	4.3 (7)	5.0 (10)	4.3 (7)
	Math 2	*	*		*	*

Table 12. Median Time to Degree⁸

* indicates cell suppressed due to N<5.

Due to the low numbers of graduates, the median time to degree fluctuates significantly from year to year. Students enrolled in preparatory math and English typically have a higher median time to degree than the rest of the student body.

⁸ Table only includes first-time freshmen and does not include BIs.

Appendix D. Cost of Delivering Developmental Education

COST - UAA

From Yuan – "College level MATH classes are slightly more expensive than the Dev MATH across almost all UAA campuses. The English is at the opposite for UAA as a whole and for Anchorage Campus, with rest in a mix. The net in Anchorage campus is close to UAA average, because of its size. Higher net revenue per SCH has been observed in Kenai College, as compared it to others. Kodiak and PWSCC are two had "net cost" per SCH in some level ENGL and MATH."





UAF Costs

Term	Comparison Group ⁹	Dev English	Dev Math
Fall 2008	\$90.90	\$94.53	\$62.25
Fall 2009	\$94.75	\$73.86	\$64.80
Fall 2010	\$99.37	\$128.18	\$87.30
Fall 2011	\$111.36	\$48.50	\$101.16
Fall 2012	\$113.47	\$122.02	\$116.01

 Table 1. Revenue Per Credit Hour: Developmental English, Developmental Math, and

 Other Developmental Courses



Revenue per Credit Hour

Revenue per credit hour increased steadily for the comparison group fall 2008 to fall 2012. Tuition covered the cost in all cases except for ENGL 2.

Revenue per credit hour also increased steadily for the developmental math group, but more steeply than for the comparison group. In fall 2008 revenue per credit hour for the developmental math group was lower, but by fall 2012 was slighter higher, than the comparison group.

Revenue per credit hour was variable for the developmental English group, but increased fall 2008 to fall 2012. In fall 2008, fall 2010, and fall 2012, revenue per credit hour was higher

⁹ All UAF non-developmental lower-level courses except self-support courses and courses without instructor employment information



for the developmental English group, but in fall 2009 and fall 2011 was lower than the comparison group.

Revenue per credit hour for the MATH 1 group increased steadily and more steeply than the comparison group. In fall 2008 revenue per credit hour for MATH 1 was lower, but by fall 2011 was higher, than the comparison group.

Revenue per credit hour for the MATH 2 group increased steadily from fall 2009 to fall 2012, and except for a drop from fall 2008 to fall 2009, increased more steeply than the comparison group, surpassing revenue per credit hour for the comparison group by fall 2012.

Revenue per credit hour for the MATH 3 group increased steadily from fall 2008 to fall 2012, more steeply than either MATH groups or the comparison group, but was lower than the comparison group for all fall term.



Note: this chart has a different scale than the previous two charts.

Revenue per credit hour was more variable for the developmental English groups than for the comparison group, particularly for the ENGL 1 and ENGL 2 groups which did not increase from fall 2008 to fall 2012.

Revenue per credit hour for ENGL 1 was higher in fall 2008 and fall 2010, but lower in fall 2009, fall 2011, and fall 2012 than the comparison group.

Revenue per credit hour for ENGL 2 was lower than the comparison group for all fall terms and was negative (positive for cost) in fall 2012.

Revenue per credit hour for ENGL 3 increased from fall 2008 to fall 2012 and was higher than the comparison group for all fall terms except fall 2011. The increase in revenue per credit hour for ENGL 3 from fall 2011 to fall 2012 was especially steep.

Salary to Tuition Ratio

 Table 2. Salary to Tuition Ratio: Developmental English, Developmental Math, and Other Developmental Courses

Term	Comparison Group	Dev English	Dev Math	Other Dev
Fall 2008	0.43	0.53	0.60	0.80
Fall 2009	0.44	0.63	0.59	0.98
Fall 2010	0.42	0.35	0.48	0.71
Fall 2011	0.39	0.76	0.42	0.83
Fall 2012	0.41	0.70	0.40	0.86



The salary to tuition ratio (salary cost per tuition dollar) for the comparison group decreased slightly from fall 2008 to fall 2012.

The salary to tuition ratio also decreased, but more steeply, for the developmental math group. In fall 2008 the salary to tuition ratio for the developmental math group was higher, but by fall 2012 it was slightly lower than the comparison group.

The salary to tuition ratio was variable for the developmental English group but in general it increased from fall 2008 to fall 2012. The salary to tuition ratio for the developmental English group was higher than the comparison group in all fall terms except fall 2010 and the spread between the two groups increased from fall 2008 to fall 2012.

The salary to tuition ratio was highest for the "Other Developmental" group but increased only slightly from fall 2008 to fall 2012.

	Comparison			
	Group	Dev Math		
Term		MATH 1	MATH 2	MATH 3
Fall 2008	0.43	0.54	0.46	0.81
Fall 2009	0.44	0.44	0.59	0.73
Fall 2010	0.42	0.43	0.51	0.50
Fall 2011	0.39	0.34	0.45	0.48
Fall 2012	0.41	0.35	0.39	0.45

Table 3.	Salary to	Tuition	Ratio:	Developmenta	ıl Math
Levels					



The salary to tuition ratio for all three developmental math groups and the comparison group decreased from fall 2008 to fall 2012, but the decrease was stronger for the developmental math groups than for the comparison group.

In fall 2008 the salary to tuition ratio for the developmental MATH 1 group was higher, but by fall 2011 was lower than the comparison group.

The salary to tuition ratio was higher for the developmental MATH 2 group fall 2008 to fall 2011, but by fall 2012, it was slightly lower than the comparison group.

The salary to tuition ratio for the developmental MATH 3 group was higher than the other developmental math groups and the comparison group, but it decreased steeply from fall 2008 to fall 2012, so that by fall 2012 it was higher than the other groups by a much narrower margin than in fall 2008

	Comparison	Dev		
Term	Group	English ENGL 1	ENGL 2	ENGL 3
Fall 2008	0.43	0.49	0.60	0.50
Fall 2009	0.44	0.75	0.68	0.47
Fall 2010	0.42	0.37	0.51	0.17
Fall 2011	0.39	0.86	0.68	0.76
Fall 2012	0.41	0.66	1.12	0.30

Table 4. Salary to Tuition Ratio: Developmental English Levels



The salary to tuition ratio for the three developmental English groups was more variable than for the comparison group.

In general, the salary to tuition ratio for both developmental ENGL 1 and ENGL 2 groups was higher than the comparison group and increased from fall 2008 to fall 2012. The salary to tuition ratio increased more strongly for developmental ENGL 2 than for developmental ENGL 1.

Although variable, the salary to tuition ratio for developmental ENGL 3 decreased from fall 2008 to fall 2012. In fall 2008, the salary to tuition ratio was higher for developmental ENGL 3 than the comparison group, but by fall 2012 was lower than the comparison group.

Summary and Discussion

Salary cost, tuition rate, and the number of students enrolled in courses all affect the cost of course delivery. Per credit tuition rates for all groups compared here were the same (lower-level tuition) and changed at the same rate over time. Except where proportions of non-resident to resident enrollment might have differed between groups, we don't expect the tuition rate to explain differences between groups. Therefore, salary cost and enrollment are the explanatory variables. Of these two, we don't expect salary cost to change dramatically over time (except possibly where the number of instructors is small), but we do expect that there might be differences between groups.

We know that tuition per credit increased from fall 2008 to fall 2012 and enrollment also increased for UAF overall. As we might expect, revenue per credit hour increased fall 2008 to fall 2012 and the salary to tuition ratio decreased slightly for the comparison group.

Revenue per credit hour increased more steeply and the salary to tuition ratio decreased more strongly for the developmental math group than for the comparison group (which decreased only slightly in salary to tuition ratio), suggesting that enrollment increased more rapidly for this group than for non-developmental, lower-level courses in general. Among the developmental math course levels, MATH 3 increased in revenue per credit and decreased in salary to tuition ratio the most strongly, followed by MATH 2, and then MATH 1, suggesting that enrollment increased most strongly for the MATH 3 group, followed by MATH 2, and then MATH 1.

The behavior of the developmental English group was more variable, but comparing fall 2008 to fall 2012, revenue per credit hour increased slightly more for developmental English than for the comparison group. However the salary to tuition ratio decreased for developmental English. Among the developmental English course levels, only ENGL 3 increased in revenue per credit and decreased in salary to tuition ratio. ENGL 1 and ENGL 2 did not increase or decrease in revenue per credit, but increased in salary to tuition ratio, with the strongest increase occurring for ENGL 2. Salary cost may have increased and/or enrollment decreased for ENGL 1 and ENGL2. The opposite is true for ENGL 3: enrollment appears to have increased and/or salary decreased, as least moderately, for ENGL 3. In general, the total number of credit hours that are generated by developmental English courses is smaller than for developmental math courses. We expect more variability in revenue per credit and salary to tuition ratio for developmental English.

By fall 2012, revenue per credit hour was higher for both developmental math and developmental English than for the comparison group. This means that class size and/or salary for developmental math and developmental English were more favorable, by fall 2012, than for the comparison group.

The salary per tuition ratio decreased over time for the developmental math group so that by fall 2012 it was comparable to the comparison group. However, the salary to tuition ratio remained higher for developmental English as a group than for the comparison group.

Of the three developmental math groups, by fall 2012 MATH 3 remained a little more expensive, while MATH 1 and 2 a little less expensive, than the comparison group. Of the three developmental English groups, ENGL 3 was less expensive than the comparison group, but ENGL 1 and especially ENGL 2 appeared to be more expensive than the comparison group, by fall 2012.

The "Other Developmental" group was lower in revenue per credit and had a higher salary to tuition ratio (and thus was more expensive) than developmental math or English, or the

comparison group. It's not clear that this group substantially increased or decreased in either metric over the five year span.

Methods

Tuition and revenue were calculated for UAF for-credit semester courses delivered fall terms, fall 2008 through fall 2012. Course fees were not included.

Self-support courses were removed. Course sections that were missing instructor information were also removed. These included 1,163 course sections, or 8.9 percent of the total.

Developmental courses are listed below by level. The comparison group included all nondevelopmental lower-level courses.

Lower-level tuition was calculated for students enrolled in the courses on the basis of their residency status and total UA-system credit load for the term. If a non-resident student was enrolled in 4 or fewer credits system-wide, they were considered a resident. Tuition for non-resident students attending under the WUE program was calculated as 150 percent of the resident rate.

Credit hours for student residency, and revenue-per-credit-hour calculations, include audits. Credit hours were summed for all students enrolled in course sections.

Fall salary was calculated for instructors as the biweekly salary times 9.75, unless the total pay periods associated with the salary were 10 or less, in which case the "annual salary" was used. (The employee records were associated to course instructors by term and ID, so if the pay periods were less than 10, these would be for the term in question.)

Salaries associated with primary positions were first adjusted by the instruction workload percentage.

If an instructor taught developmental and non-developmental courses, or developmental courses at different levels in the same term, the proportion of his/her credit workload attributed to each of these was calculated and the salary for each level was calculated as the total salary times the fraction of that type of course taught.

The total credit load for instructor is affected by the courses that are missing this information.

For instructors who have secondary or overload positions it was not possible to tell which positions (primary, secondary, or overload) were associated with particular courses taught. However, only salaries associated with instruction were included (based on a NCHEMS value of 'INSTRUCTION', or where the employee group was "faculty extra service" or "adjunct").

Multiple salaries that met the criteria above or any multiple salaries within job type were summed. The total salary was then attributed proportionally to course types based on the workload fraction of those course types.

Revenue per credit hour is the total revenue in tuition minus the total salary cost, divided by the total credit hours generated by courses in the group.

The salary to tuition ratio is the total salary cost divided by total tuition revenue for courses in the group.

Cost was negative except for one course level of developmental English in one term, and so is reported as revenue.

Developmental courses by level: ENGL 1: DEVE F060, DEVE F068

ENGL 2: DEVE F070, DEVE F093

ENGL 3: DEVE F109, DEVE F193, ABUS F170, PRPE A108

MATH 1: DEVM F050, DEVM F051, DEVM F056, ABUS F155

MATH 2: DEVM F060, DEVM F062, DEVM F065, DEVM F066, DEVM F093, TTCH F131

MATH 3: DEVM F105, DEVM F106, MATH A105

OTHER: ABUS F271, ANS F100, CTT F104, CTT F106, DEVS F052, DEVS F058, DEVS F101, DEVS F102, DEVS F104, DEVS F105, DEVS F108, DEVS F110, DEVS F150, DEVS F160, DEVS F185, DEVS F193, ECE F117, HLTH F116, HUMS F117, RD F100

Cost of Delivering Developmental Education at UAS

INTRODUCTION

The Alaska Advisory Task Force on Higher Education & Career Readiness¹⁰ emphasizes the importance of understanding the costs of delivering remedial education (p. 13):

Without coordinated longitudinal reporting to document outcomes as students progress (or fail to progress) through and beyond Alaska's education system, Alaska cannot know that state education spending results in any specific benefit, much less understand the return on investment or be able to determine what cost efficiencies may be possible.

Institutions in a number of states are now reporting costs of delivering developmental education (see cited state reports, including Nevada¹¹ and Arkansas¹²). Unfortunately, cost comparisons to other course levels aren't available in these reports, so the UA system may need to rely on MAU comparisons of the relative costs of delivering developmental and collegiate level courses.

COSTS OF DEVELOPMENTAL EDUCATION AT UAS

In financial terms, the cost of delivering developmental education is commensurate with the need for remediation, where need is expressed in terms of enrollment. Over the last five years, developmental education courses at UAS have represented about 8% of the student full-time equivalent generated in all lower division courses, similar to Ohio, where remediation represents 5% of undergraduate full-time equivalent¹³.



¹⁰ Alaska Advisory Task Force on Higher Education & Career Readiness. *Final Report of the Alaska Advisory Task Force on Higher Education* & Career Readiness: A Plan for Increasing the Number of Alaska Prepared to Enter the Workforce or Postsecondary Programs of Study and Improving School Completion. April 2011.

Nevada System of Higher Education. Office of Academic and Student Affairs. Summer and Fall 2011 Remedial/Developmental Report. Web. http://www.nevada.edu/ir/Documents/RemedialEnrollment/Remedial_Report_Fall_2011.pdf ¹³ Ohio Board of Regents. *Preparation for College Level Coursework at University System of Ohio Institutions*. Jan. 2009. Web.

Arkansas Department of Higher Education. 2007-08 Arkansas Academic Cost Accounting: Uniform Reporting of Education and General Revenues, Expenditures, and Academic Productivity. Web.

http://www.adhe.edu/SiteCollectionDocuments/Institutional%20Finance%20Division/Publications/UR2007-08.pdf

Consequently, most of the revenue generated from lower division courses is from non-preparatory course enrollment. Net revenue (the revenue from tuition less the costs of faculty salaries) from 2009 - 2013 in developmental education represented 16.9% (\$542,007) of the total net revenue in all lower division courses (\$3,214,131). Similarly, the Maryland Higher Education Commission¹⁴ reported that cost attributed to developmental education was less than 10% of their total budget (in 2009).

After four years of growth, student full-time equivalent in all lower division courses decreased by 5.2% from Fall 2011 to Fall 2012, with a disproportionately greater decrease in developmental courses (-30%) compared to collegiate level lower division courses (-3%). Community colleges in the University of Hawaii system also noted a decreased overall demand for remediation, but in the previous year (in 2011)¹⁵.

Over the last five years, demand for developmental math at UAS has been notably greater than for developmental English. Moreover, there has been greater demand for more advanced preparatory levels (level 3 for English and level 2 for math) than for lower preparatory levels. The fact that remedial math has been the greatest area of need is consistent with reports from institutions in several other states: Colorado (40.7% of first-time freshmen in community colleges and 15.7% of those in four-year institutions)¹⁶, Florida¹⁷, Michigan (52% of all students requiring remediation)¹⁸, Ohio (31% of first-time freshmen, compared to 19% for English in 2006-2007)¹⁹, and Washington Community and Technical Colleges (51% of first-time students in 2009-2010)²⁰.



¹⁴ Maryland Higher Education Commission. Developmental Education Costs and Best Practices Workgroup. 2010_p141 MHEC: The Costs of Developmental Education. Jan. 2011.Web. <u>http://mhec.maryland.gov/publications/finance/developeducationreport.pdf</u>

 ¹⁵ University of Hawaii Community Colleges. 2012 Annual Report of Program Data: Hawaii Community College Instructional Executive Summary. 2012. Web. <u>http://www.hawaii.edu/offices/cc/arpd/instructional.php?action=executivesummaries&year=2012&college=HAW</u>
 ¹⁶ Colorado Commission on Higher Education. 2009 Legislative Report on Remedial Education. Feb. 2010. Web. <u>http://highered.colorado.gov/Publications/Reports/Remedial/FY2009/2009_Remedial_relfeb10.pdf</u>
 ¹⁷ Office of Program Data Community College Instructional Executive Summary College Instructional Executive Summary College Instructional Executive Summary. 2012. Web. <u>http://www.hawaii.edu/offices/cc/arpd/instructional.php?action=executivesummaries&year=2012&college=HAW</u>
 ¹⁶ Colorado Commission on Higher Education. 2009 Legislative Report on Remedial Education. Feb. 2010. Web. <u>http://highered.colorado.gov/Publications/Reports/Remedial/FY2009/2009_Remedial_relfeb10.pdf</u>

¹⁷ Office of Program Policy Analysis & Government Accountability. *Report No. 07-31*. May 2007.Web. http://www.oppaga.state.fl.us/MonitorDocs/Reports/pdf/0731rpt.pdf

¹⁸ McTavish, Thomas. Michigan Office of the Auditor General. Audit Report: *Performance Audit of Developmental Education at Michigan Public Community Colleges*. May 2009. Web. <u>http://audgen.michigan.gov/finalpdfs/08_09/r032065107.pdf</u>

¹⁹ Ohio Board of Regents. *Preparation for College Level Coursework at University System of Ohio Institutions*. Jan. 2009. Web. http://regents.ohio.gov/perfrpt/statProfiles/Preparation_Rpt%202006-07.pdf

²⁰ Pacific Northwest Higher Education. *Role of Pre-College (Developmental and Remedial) Education 2008 – 2009 Public High School Graduates Who Enroll in Washington Community and Technical Colleges in 2009-10.* April 2012. Web. http://www.sbctc.ctc.edu/college/education/resh rpt 11_3_role_of_precollege_education_revised3_000.pdf

Given the disparity in the number of course offerings and student enrollment in developmental education compared to collegiate-level lower division courses, salary to tuition ratios (salary cost per tuition dollar) were calculated to determine cost recovery by lower division course levels and subjects. Decreasing revenues in developmental education last fall correspond with the decreased demand in these courses.

Except for 2011, the ratios have been similar considering all preparatory levels for developmental courses in English and math. Lower ratios over the last two years correspond with the decreased demand in these courses.



In general, lower ratios for developmental courses are due to the adjuncts and term faculty teaching these courses at less cost to the university in salaries. The average adjunct and term faculty salary per credit taught over the last five years was \$1,189, compared to \$3,120 for regular instruction faculty.

Cost recovery in level 2 preparatory math has generally been better than for non-preparatory lower division math courses. The salary to tuition ratios have been similar for both levels of preparatory math for the last two years.



Greater salary to tuition ratios have been observed over the last five years or the level 3 preparatory English course, with a steeper increase over the last two years than other English courses.



Appendix

Definitions

All calculations were based on courses delivered during the fall terms of the last five academic years, by course. Summaries are referred to by academic year; for example, "2009" refers to Fall 2008. Data source: UA Decision Support Database (DSD), compiled by UAS Institutional Effectiveness from closing extracts.

Net revenues for a course is the sum of revenue generated from tuition – the cost of faculty salaries.

Average net revenue per credit for a course was calculated as the (sum of revenues - the cost of faculty salaries) / the number of student credit hours generated by students in the course. Net revenue per developmental education credit excludes the revenues and salaries in courses taught by instructors also teaching collegiate level courses. The net revenue for development courses in such cases is included in the comparison group, "other lower division courses".

Revenues were calculated from the resident tuition rate associated with a course, if any, and estimated resident or Western Undergraduate Exchange (WUE) surcharges associated with the students enrolled a course. Tuition is not collected for sponsored courses, which are taught by instructors not employed by the university. Course fees were excluded from the calculation. Non-resident and WUE surcharges were applied according to a student's residency status and admission status for students in more than four credits for the semester in courses offered through the Juneau campus, averaged by the total number of credits for a student, and multiplied by the number of section credits for a given course.

The **cost of faculty salaries** was determined for the primary position of regular instructional faculty by applying half of the annual salary (equivalent to 9.75 pay periods x the biweekly salary), pro-rating that amount by the proportion of instructional workload assigned to the position, averaging the result by the total number of credits taught by an instructor, and multiplying by the number of section credits for a course. 100% of the salaries for instructors having an overload or secondary positions was applied to instruction, in proportion to the length of time a fall course was taught.

Student credit hours were calculated by multiplying the course enrollment by the number of section credits. Enrollment counts include auditors, who pay tuition.

Full-time Equivalent (FTE) was calculated from the sum of student credits generated for a course / 15 credits.

Developmental education levels are designated according to preparatory levels and subject.

ENGL 2: an intermediate preparatory level; corresponds to ENGL S092, Improving Writing Skills, 4 credits.

ENGL 3: refers to ENGL S110, Introduction to College Writing, 4 credits. The course does not count towards degree requirements.

MATH 1: MATH S054, Preparatory Mathematics, 3 credits.

MATH 2: MATH S055, Fundamentals of Algebra, 3 credits.

UAS does not offer a level 1 developmental English course or a level 3 developmental math course. MATH S105 satisfies the minimum general education requirement for associate degrees, and counts as elective credit toward baccalaureate degrees.