

# Excess Units in Pursuit of the Bachelor's Degree

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# Research Goals and Sample

## ▶ Goals:

- Examine the number of excess units that native freshmen take at Sacramento State while in pursuit of their Bachelor's degrees, as well as the impact of those units on student FTE, course sections and cost to the university and students.
- Explore some of the factors that contribute to the accumulation of excess units.

## ▶ Sample

All Bachelor's degree recipients who were native freshmen and graduated in summer 2009, fall 2009 and May 2010 (N=1,234). This is equivalent to 25% of the total number of Bachelor's degree recipients from the 2009–2010 academic year.

# Methodology

- ▶ ***Excess Units:*** The number of units that exceed the required units of a Bachelor's degree in each major.
- ▶ ***Sacramento State Units:*** All units that graduates took at this university, including units for majors, 2<sup>nd</sup> majors, minors, General Education, Electives and repeat units, excluding remedial and transfer units.
- ▶ ***Degree Units :*** All units that were counted toward a degree. These are not equivalent or equal to Sacramento State Units
- ▶ ***Comparison Groups:***
  - Repeaters and non-repeaters
  - Graduates who took second majors/minors and those who did not
  - Graduates who changed majors and those who did not
- ▶ ***Measurements:***
  - Average Sacramento State units
  - Percentage of graduates who exceeded the required number of units
  - Time-to-Degree

# All Units by Category

**Table 1. All Units Taken by Selected Bachelor's Degree Recipients (N=1,234)**

College of Degree	Major1 units	Major2 units	Minor units	GE units	Elective units	Repeat units	Remedial units	Transfer units	Grand Total
ALS	13,438	244	840	13,559	4,881	1,086	1,017	1,941	37,006
BUS	15,919	81	413	14,644	3,565	1,380	938	1,948	38,888
ECS	4,632	27	241	4,171	2,809	592	154	855	13,481
ED	1,765	0	175	3,337	1,640	314	345	693	8,269
HHS	13,978	115	552	16,783	6,361	1,373	1,152	2,960	43,274
NSM	4,153	0	667	5,233	2,098	714	145	1,136	14,146
SCI	8,120	357	1,021	12,548	6,775	884	888	2,102	32,695
SP	0	0	0	333	304	28	20	48	733
<b>University</b>	<b>62,005</b>	<b>824</b>	<b>3,909</b>	<b>70,608</b>	<b>28,433</b>	<b>6,371</b>	<b>4,659</b>	<b>11,682</b>	<b>188,491</b>

# Degree Units

**Table 2. Excess Units for Bachelor Degree (Official Degree Units)**

College of Degree	Met Required Units		Exceeded Required Units		Sample Total	Degree Units (Group with Excess Units)			
	Count	%	Count	%		Median	Mean	Maximum	Minimum
ALS	93	37.2%	157	62.8%	250	139	142	204	124
BUS	41	16.0%	215	84.0%	256	136	140	201	124
ECS	1	1.3%	74	98.7%	75	156	159	204	140
ED	26	46.4%	30	53.6%	56	132	136	180	124
HHS	73	26.0%	208	74.0%	281	139	143	224	124
NSM	4	4.9%	77	95.1%	81	154	154	210	124
SCI	101	43.7%	130	56.3%	231	133	137	202	124
SP	0	0.0%	4	100.0%	4	163	163	192	133
<b>University</b>	<b>339</b>	<b>27.5%</b>	<b>895</b>	<b>72.5%</b>	<b>1,234</b>	<b>140</b>	<b>144</b>	<b>224</b>	<b>124</b>

*Note: Official units refer to units that count towards the degree. Numbers are based on degree census files*

# Sacramento State Units

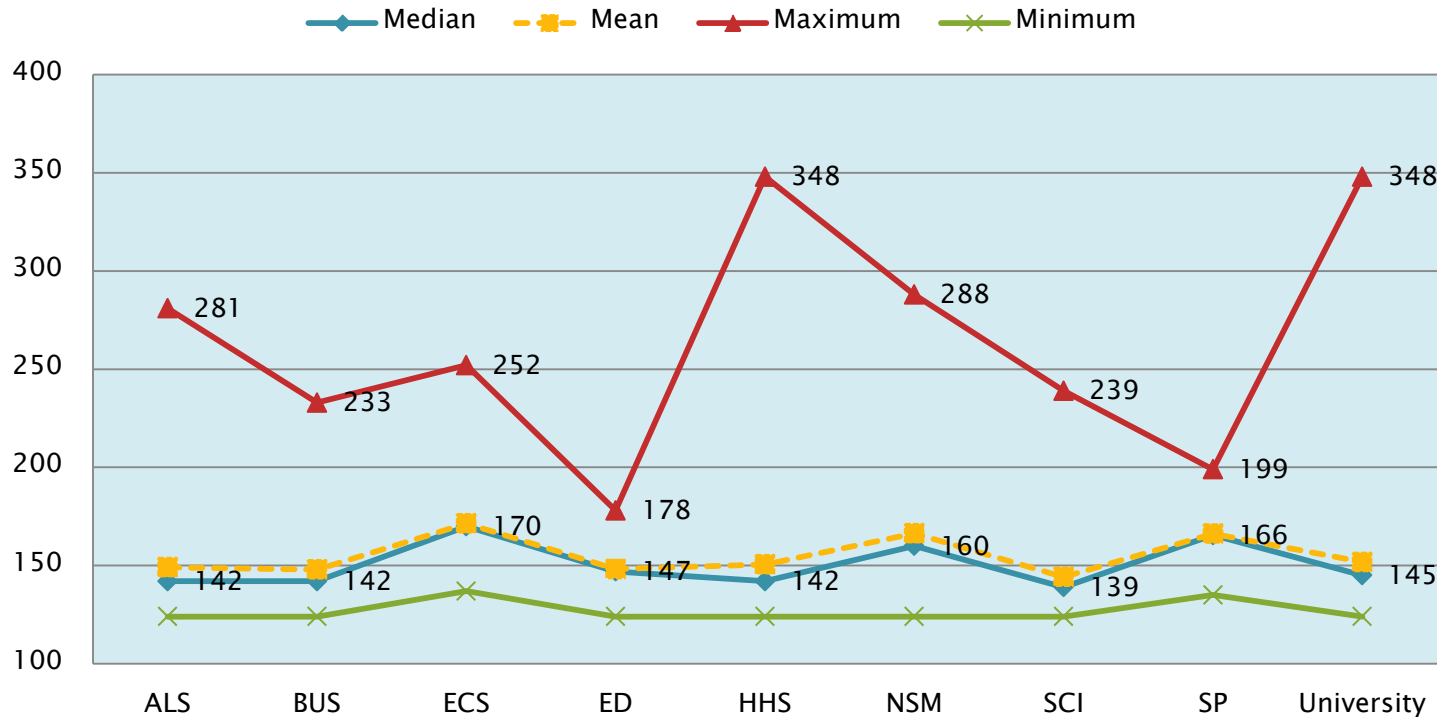
**Table 3. Excess Units for Bachelor Degree (Actual Units Taken at Sacramento State)**

College of Degree	Met Required Units		Exceeded Required Units		Sample Total	Sacramento State Units (Group with Excess Units)			
	Count	%	Count	%		Median	Mean	Maximum	Minimum
ALS	94	37.6%	156	62.4%	250	142	149	281	124
BUS	57	22.3%	199	77.7%	256	142	148	233	124
ECS	9	12.0%	66	88.0%	75	170	171	252	137
ED	25	44.6%	31	55.4%	56	147	148	178	124
HHS	89	31.7%	192	68.3%	281	142	151	348	124
NSM	12	14.8%	69	85.2%	81	160	166	288	124
SCI	120	51.9%	111	48.1%	231	139	144	239	124
SP	0	0.0%	4	100.0%	4	166	166	199	135
<b>University</b>	<b>406</b>	<b>32.9%</b>	<b>828</b>	<b>67.1%</b>	<b>1,234</b>	<b>145</b>	<b>152</b>	<b>348</b>	<b>124</b>

*Note: Actual units refer to units taken at Sacramento State, which may or may not count toward the degree. Excludes remedial and transfer units. All numbers are based on Class and Grade census files.*

# Excess Sacramento State Units

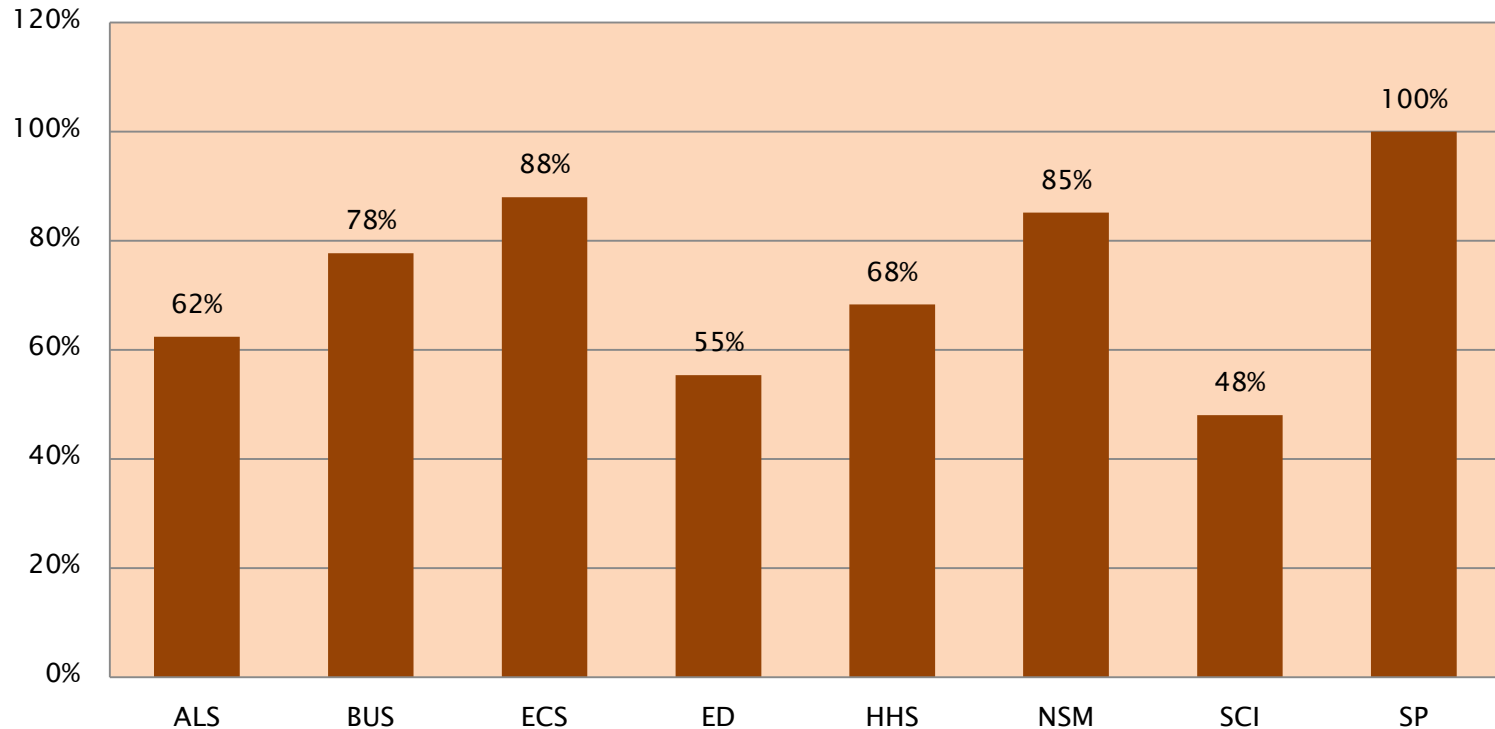
## Excess Sacramento State Units



Note: Minimum units are close to the degree units required by each college.

# Sacramento State Units by College

## % of Graduates With Excess Sacramento State Units





# Calculation of Excess Units

**Table 4. Excess Sacramento State Units, Student FTE and Cost of Course Sections**

College	Headcount of Graduates	Required Degree units	Total Required Units	Actual Sac State Units	Excess Sac State Units	Converted Student FTE	Converted Course Sections	Cost of Course Sections
ALS	156	124	19,344	23,262	3,918	261.2	44	\$225,285
BUS	199	124	24,676	29,437	4,761	317.4	53	\$273,758
ECS	66	135	8,910	11,315	2,405	160.3	27	\$138,288
ED	31	124	3,844	4,594	750	50.0	8	\$43,125
HHS	176	124	21,824	26,413	4,589	305.9	51	\$263,839
Nursing	16	131	2096	2495	399	26.6	4	\$22,943
NSM	69	124	8,556	11,479	2,923	194.9	32	\$168,073
SSIS	111	124	13,764	16,009	2,245	149.7	25	\$129,088
SP	4	124	496	665	169	11.3	2	\$9,718
<b>University</b>	<b>828</b>		<b>103,510</b>	<b>125,669</b>	<b>22,159</b>	<b>1,477.2</b>	<b>246</b>	<b>\$1,274,114</b>

## Formulas:

- *Total Required Units = # Graduates x Required degree units*
- *Excess Units = Actual Sacramento State units – Total required units*
- *FTES = Excess units/15 (15 units = 1 undergraduate FTES)*
- *Course Sections = Excess units/SCU (3 units x 30 students = 90 units)*
- *Cost of Course Sections = Cost per section (\$5,175) x # Course sections*

# Contributor #1: Repeating Courses

**Table 5. Repeat Units (Taken at Sacramento State)**

College of Degree	Had Repeat Units		Sample Total	Repeat Units				
	Count	%		Median	Mean	Maximum	Minimum	Sum
ALS	139	55.6%	250	6	8	49	1	1,086
BUS	149	58.2%	256	6	9	34	1	1,380
ECS	46	61.3%	75	9	13	44	1	592
ED	33	58.9%	56	8	10	27	2	314
HHS	142	50.5%	281	7	10	63	1	1,373
NSM	51	63.0%	81	8	14	59	3	714
SCI	111	48.1%	231	6	8	43	1	884
SP	2	50.0%	4	14	14	24	4	28
<b>University</b>	<b>673</b>	<b>54.5%</b>	<b>1,234</b>	<b>6</b>	<b>9</b>	<b>63</b>	<b>1</b>	<b>6,371</b>

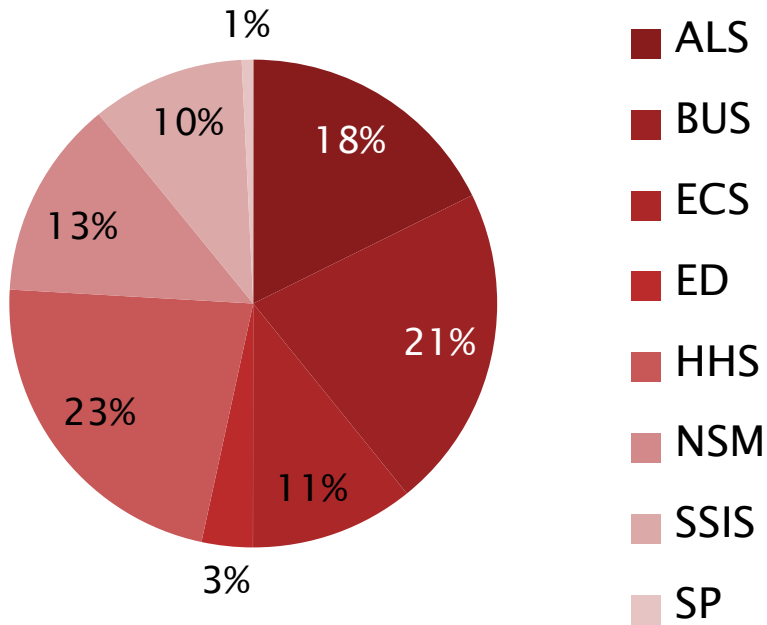
**Table 6. Comparison between Repeaters and Non-repeaters**

	Repeaters			Non-repeaters			Gap	Statistical Significance
	Count	%	Mean	Count	%	Mean		
Sacramento State Units	673		152	561		125	26	Yes
Exceeded Required Units	673	86%		561	44%		42%	Yes
Year to Degree	673		5.4	561		4.4	1.0	Yes

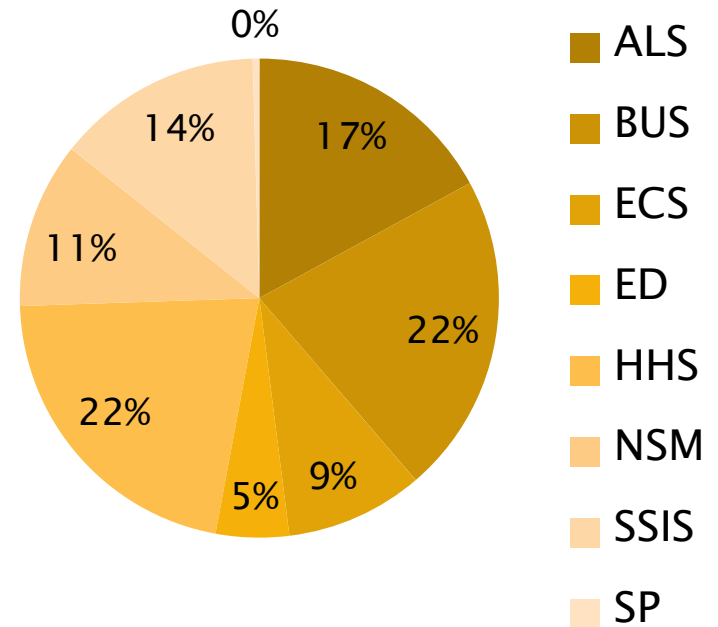
*T-Test, p<0.001. Higher value is highlighted in Yellow.*

# Excess Units and Repeat Units

## Excess Sacramento State Units among Colleges

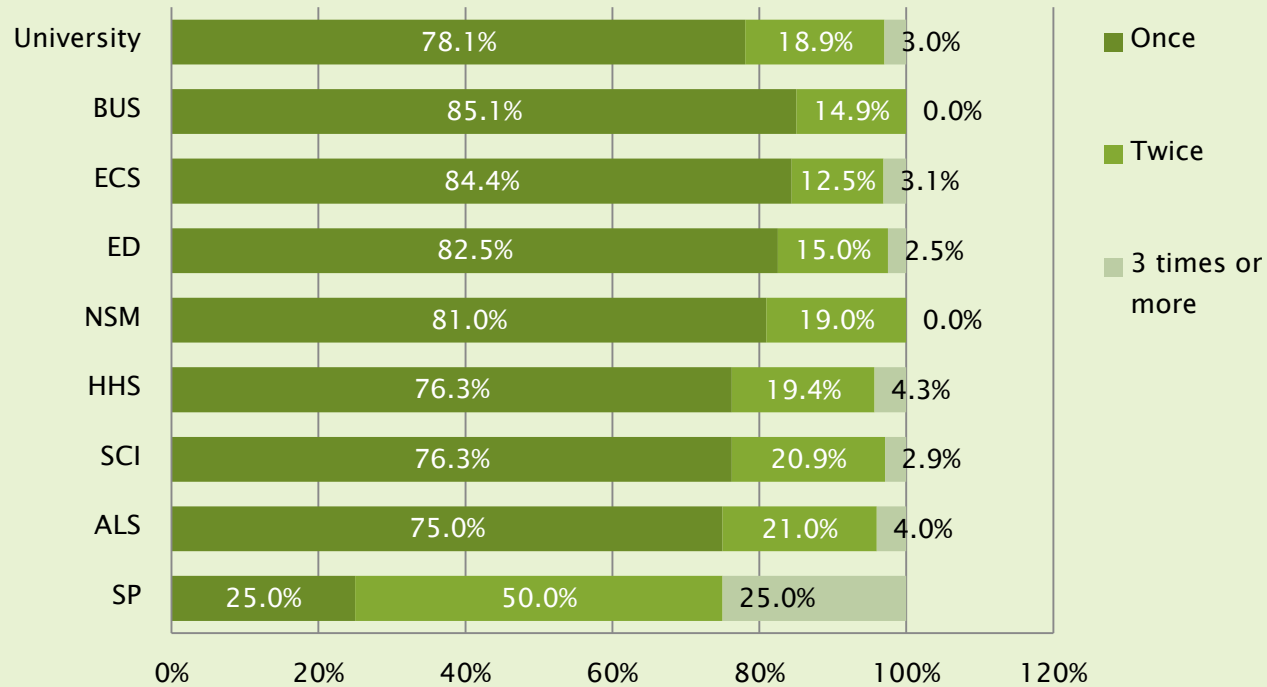


## Repeat Units among Colleges



# Contributor #2: Changing Majors

## Frequency of Changing Majors



# Contributor #2: Changing Majors

**Table 7. Excess Units Due to Changing Majors**

College of Degree	Changed Majors and Gained Excess Units		Total	Required Degree units	Total Required Units	Actual Sac State Units	Excess Sac State Units
	Count	%					
ALS	83	33.2%	250	124	10,292	12,135	1,843
BUS	77	30.1%	256	124	9,548	11,573	2,025
ECS	30	40.0%	75	135	4,050	5,225	1,175
ED	25	44.6%	56	124	3,100	3,745	645
HHS	99	36.0%	275	124	12,276	15,318	3,042
Nursing	6	100.0%	6	131	786	996	210
NSM	39	48.1%	81	124	4,836	6,629	1,793
SCI	74	32.0%	231	124	9,176	10,804	1,628
SP	4	100.0%	4	124	496	665	169
<b>University</b>	<b>437</b>	<b>35.4%</b>	<b>1,234</b>		<b>54,560</b>	<b>67,090</b>	<b>12,530</b>

**Table 8. Comparison between Changing Majors and No Change for Majors**

	Changed Majors			Never Changed Majors			Gap	Statistical Significance
	Count	%	Mean	Count	%	Mean		
Sacramento State Units	607		143	627		136	7	Yes
Exceeded Required Units	607	72%		627	62%		10%	Yes
Year to Degree	607		5.1	627		4.8	0.3	Yes

T-Test,  $p < 0.001$ . Higher value is highlighted in Yellow.

# Contributor #3: Second Majors and/or Minors

**Table 9. Units Attributed to Second Majors/Minors at Sacramento State**

College of Degree	2nd Major/Minors		Sample Total	Units for 2nd Majors and Minors				
	Count	%		Median	Mean	Maximum	Minimum	Sum
ALS	70	28.0%	250	21	23	62	3	1,084
BUS	83	32.4%	256	18	25	89	15	494
ECS	10	13.3%	75	27	27	36	18	268
ED	7	12.5%	56	24	25	43	18	175
HHS	28	10.0%	281	21	24	60	9	667
NSM	25	30.9%	81	28	28	47	15	667
SCI	64	27.7%	231	24	28	75	12	1,378
SP	0	0.0%	4					0
<b>University</b>	<b>287</b>	<b>23.3%</b>	<b>1,234</b>	<b>22</b>	<b>25</b>	<b>89</b>	<b>3</b>	<b>4,733</b>

*Note: 101 students who had 2nd majors and/or minors had no units recorded as being clearly related to their 2nd major and/or minors. They were therefore excluded from these calculations.*

**Table 10. Comparison between Major Plus and Single Major**

	Major Plus			Single Major			Gap	Statistical Significance
	Count	%	Mean	Count	%	Mean		
Sacramento State Units	287		141	947		139	2	No
Exceeded Required Units	287	72%		947	66%		6%	Yes
Year to Degree	287		4.9	947		5.0	-0.1	No

*T-Test,  $p < 0.05$ . Higher value is highlighted in blue.*

# Logistic Regression: Exceeding Required Units

**Table 11. Logistic Regression Model for Excess Sacramento State Units**

Predict Variables	B	S.E.	Wald	df	Sig.	Exp(B)	Odds Ratio	Rank
Major type(1)	-.513	.165	9.665	1	.002	.599	1.7	2
Change majors(1)	-.251	.137	3.334	1	.068	.778	1.3	3
Repeat units(1)	-2.074	.143	211.663	1	.000	.126	8.0	1
Constant	2.366	.194	149.181	1	.000	10.655		
<b>Model Indicators</b>								
Baseline P*	67.1%		Chi-Square (df)			265,314		
Model N	1,234		Pseudo R <sup>2</sup>			.193-.269		
-2log L	1298.105		% Correctly predicted			73.3%		

\* Refers to the percentage of graduates who exceeded the number of units required by their major.

# Summary and Conclusions: Impact

1. Among those who had excess units, the median number of total units accumulated was 145 (25 units above the required 120 units or 10 above the required 135 units). Graduates who exceed the number of units required for their degree could pay an average of \$2,500 more than necessary in tuition (\$101.60 per unit).
2. The 828 graduates who exceeded the units required accumulated a total of 22,159 excess Sacramento State units. These excess units could be converted to 1,477.2 FTES, which is equivalent to 7.4% of the total undergraduate FTES of the university in fall of 2010 (10% FTES reduction).
3. These excess units are also equivalent to 246 course sections. The cost of those course sections could be approximated to be \$1,274,114. Note that this cost calculation was based on 25% of the degree recipients from 2009–2010. Therefore, the actual number of excess units for the class of 2009–10, including both native and transfer students, could be as much as three times higher.



# Summary and Conclusions: Contributors

1. 673 graduates accumulated a total of 6,371 repeated units at this university, which accounts for 29% of all excess Sacramento State units. Repeating courses is the most powerful predictor for excess Sacramento State units among the three contributors. Repeaters were 8 times more likely to exceed their required units than non-repeaters.
2. 287 graduates accumulated 4,733 units in relation to their second majors and minors. That number is much lower than the actual number of units accumulated, as 101 (38%) of the graduates had 0 units recorded for their second majors or minors. However, the number of units which were recorded for second majors and minors is still substantial, and accounts for 21% of the all excess Sacramento State units.
3. 607 graduates changed their majors at least once during their college career. 437 (72%) of those graduates exceeded the number of required units for their majors and accumulated 12,530 excess units at Sacramento State. Those units may or may not overlap with repeat units and/or the units related to second majors and minors.

# Policy Implications

- The revised enforcement of academic policies with regard to managing/minimizing repeating courses
- The provision of sound advising in relation to aiding students in selecting their majors (A road map to graduation)
- The establishment of guidelines for the addition of second majors and minors
- A timely and pressing issue: 47% of the seniors who entered this university as native freshmen exceeded the number of units required by their majors in fall 2010. Additionally, in spring of 2011, 52% of all seniors (both native freshmen and transfers) had exceeded the number of units required of them.

## Further Study: Additional Factors

- Class availability
- General Education requirements
- Academic advising
- Financial aid policies that requires students to maintain full-time status (15 units each semester) in order to remain eligible.

# Q and A

Questions?

Sacramento State OIR website:

[\*http://www.csus.edu/oir/\*](http://www.csus.edu/oir/)

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