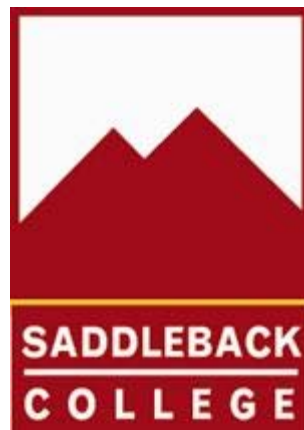


**Saddleback College
Program Review
Geographic Information Systems**



Submitted April 2009

Table of Contents

Program Review Team and Approval Page.....	<i>i</i>
Program Overview	1
Review Report.....	3
Needs Assessment	5
Appendices	7

Program Review Team

Program Review Team

Dan Walsh
Maureen Smith
Mary Pax Lenny
Laszlo MariaHazy

Section I: Program Overview

A. The Mission of the Program and its Link to the College's Mission and Goals

As a part of student's General Education, the GIS Certificate Program provides students in Geographic Information System (GIS) courses an understanding of the fundamentals of using GIS and its applications.

College Goal 2: Provide a comprehensive, broad range of high-quality courses and programs to enable students to pursue their educational objectives and career goals.

College Goal 7: Provide opportunities in continuing education and community services, including courses for skills upgrading and retraining for professionals and life-long learning for older adults.

B. Historical Background and Unique Characteristics of the Program

Historical data is limited regarding GIS at Saddleback College.

C. Progress Since the Last Program Review

This is the first program review to be conducted specifically for GIS.

D. Current Strengths, Opportunities, and Challenges

Strengths:

GIS at Saddleback College has a strong complement of dedicated full and part-time faculty who are active in regional geographic professional associations and the applied, professional geographic community as well. Students receive training in the most current version of leading GIS software products ensuring their training is up-to-date.

Opportunities:

Geographic awareness has become a growing issue at both the local and international scale facilitating an increasing demand from students for courses in geography.

According to the Federal Department of Labor, Geospatial Technology (which includes GIS) is among the top three fastest growing career fields in the U.S. with a 15 percent growth in new jobs projected over the next decade. See Appendix A for additional information and employment outlooks.

The development of ATEP may provide opportunities for expansion of GIS there as well. Discussions are underway for developing a Geospatial Technologies program at ATEP, which GIS would be a part of. As of the writing of this report, nothing has been formalized.

There has been some interest in using GIS for campus administrative purposes such as marketing and enrollment analyses. Our current site-license allows us to pursue these opportunities to increase GIS at multiple levels.

Challenges:

An ongoing challenge has been the lack of support from the college on many levels. Low enrollment sections were cancelled, leading to students seeking GIS options at other colleges and never returning to Saddleback. GIS is a multidisciplinary subject and yet very few students are taking GIS from the natural sciences. Acquiring the money for the software license has been an administrative challenge year after year as there is no mechanism to automatically renew this within our college. Finally, from the Geography/GIS department chairperson's perspective, it is difficult to put energy into a program that administration threatens to eliminate every semester due to perceived low enrollment.

Challenges related to technical issues continue to dog the GIS computer lab as well. Everything from the GIS software not loaded, to printers not working. The lab also has limited student access outside of the designated class times. Additional open lab space with GIS & remote sensing software is needed.

Section II: Review Report

A. Faculty and Staff

- 2 full-time faculty
- 1 part-time faculty
- 2 classified staff
- 1 dean/administrator

There are two full-time faculty who could teach GIS currently. However, as is typical with many GIS programs in community colleges, part-time faculty who work in the field and/or are current with the rapid advances in the field are utilized to teach the courses.

B. Curriculum and Instruction

The course offerings in GIS provide paths to a vocational certificates and skills improvement for the workforce.

Additional Geospatial technology courses (in Remote Sensing for example) may be needed in the near-term.

In Fall of 2008 Student Learning Outcomes (SLOs) were adopted by the department for program improvement. It is too early at this time to assess the 2008/09 SLOs.

Currently in the faculty contract there are economic disincentives for full-time faculty who teach lab and GIS classes. It is impossible to make the required 15 LHE load if one of the five classes taught is the lab or a GIS class - thus necessitating overload by full-time faculty if they are to teach the class. There needs to be parity in the pay for labs in order to mediate this issue.

The GIS courses are only two credits which can be a disincentive for students trying to get a minimum number of credits for graduation. At many colleges, a GIS class is a full time class (3 or 4 credits). In addition, the GIS courses can not be used to meet the AA requirements (as can GEOG1). The department will be looking into curriculum options in these areas.

C. Student Success

Enrollment in the GIS program has remained low due to ongoing facilities problems and a lack of support from other divisions.

However student retention is also strong in geography at 88% for the most recent semester available, similar to the college as a whole.

In conjunction with this program review, the department has developed student learning outcomes for instruction. The data we collect from the assessment for the will allow us to explore correlations between department instruction long-term student success.

D. Facilities, Technical Infrastructure, and Resources

The current GIS computer lab facilities in terms of space available are adequate based on the current demand and course offerings. However, shared use of the space has created difficulties for campus IT that need to be resolved prior to a semester starting. Additional courses such as Remote Sensing require additional dedicated equipment.

In the past, ongoing facilities and equipment problems plagued the GIS courses. Numerous incidences of no software, missing data, no printers, no internet access, no server access, etc., over the years has had a tremendous negative impact on the reputation of GIS at the school.

E. Service, Community Outreach, and Economic Development

Full-time and geography faculty have been active in professional organizations such as the California Geographic Society (including participation as members of the board), the Association of Pacific Coast Geographers, the American Association of American Geographers, and American Society for Photogrammetry and Remote Sensing. This has allowed faculty to remain up to date on current trends in the discipline as well innovative teaching and student learning techniques.

There is a promotional video on the Saddleback GIS website. The intermediate course students are creating maps of Saddleback which will also be posted and available to the general public.

Faculty (both full and part-time) have also made presentations to local high school counselors regarding GIS at Saddleback College. The current GIS instructor, Mary Pax Lenny, has been especially active in the promotion of GIS at Saddleback College. She has:

- Participated in High School Senior Day: manned the SBS booth; promoted the GIS program to interested students; conducted an informal survey of students to assess their awareness of GIS and geospatial technologies
- Promoted the GIS program via the High School Counselor Day at Saddleback
- Began updating the GIS webpages for Saddleback
- Monitored the GIS software: bugs; license maintenance
- Continued discussions with local agencies and businesses to identify potential internship sites
- Directed a grant to introduce high school and Saddleback guidance counselors and teachers about GIS so that they could, in turn, promote the field to their students. This included GIS training for the participants, field trips to agencies and companies using GIS; development of a GIS video aired on the Saddleback TV station, the Student Lounge (SSC) TV, and on the GIS website; development of marketing plans and materials to promote GIS to the Saddleback and local high school communities.

Section III: Needs Assessment

A. Human Resource Needs

The current level of instructional staffing is sufficient. However, the next faculty contract needs to address the economic disincentives currently in place for full-time faculty who teach lab and GIS classes.

If the program expands at ATEP, additional faculty members & IT support will be needed.

B. Instructional Needs

Low enrollment courses should not be canceled. Additional courses in specific areas of GIS or other Geospatial technologies may be needed as the program matures and grows.

C. Research Needs

It is currently too early in the process to make any assessments of the department based on SLOs. However, the department will continue to work with the Administration and Office of College Technology to evaluate the success of students.

D. Technical, Equipment and Other Resource Needs

The current demand on resources (GPS units, cables, digitizer, printers, etc.) is taxing both their availability and life of use. Continued funding for replacement items, software and upgrades is needed.

Improved technical support for the GIS courses must also be provided from the school. This includes additional open lab space with GIS & remote sensing software available.

A data server that could be accessed from off-campus is needed. Blackboard is not an appropriate resource for housing GIS data. Currently students must come on campus to access the server for GIS so data sharing is limited.

E. Facilities Needs

The current GIS lab room is slated for closure in Spring 2010. A comparable room must be identified as soon as possible.

If the program expands at ATEP, comparable instructional computer labs will be needed there as well.

F. Marketing and Outreach Needs

The Division and department use MySite, flyers, electronic signage, etc. to promote courses. Efforts are underway to improve the GIS website. As part of the Geography/GIS Department display cases, additional samples of GIS maps and marketing information will be posted.

The department is also considering, electronic interactive GIS displays to grab student's attention at events and participation in the annual November GIS Day (though these would require additional resources).

There is also potential for a GIS session during in-service week to get more faculty from other disciplines interested in the discipline.

Section IV: Appendices

- A. GIS/ Geospatial Technologies Employment Outlook**
- B. Program Organizational Chart**
- C. Five-Year Program Staffing Profile**
- D. SLO Assessment Forms**
- E. Data Sets**

A. GIS/Geospatial Technologies Employment Outlook

The United States Department of Labor has named Geospatial Technologies one of the top three most important emerging and evolving fields with respect to job growth, along with bio-technologies and nano-technologies. This is a significant paradigm shift from earlier years when geospatial employment was a highly specialized occupational niche. Today, demand for geospatial workers is very strong and rapidly increasing in fields such as urban planning, engineering, real estate, transportation, environmental and 'green' industries, utilities, marketing, navigation, resource management, and a very broad range of agencies in federal, state, and municipal government. A Geospatial Information and technology (GITA) survey reports that in the private sector alone 70 to 80 percent of the information managed by business is now somehow connected to a specific location – and address, street intersection, or 'x-y' coordinates. The public sector has also seen exponential growth in the use, demand for, and integration of geospatial technology in every aspect of our lives – from tax assessment to land records management, from fire and safety to homeland defense, and from disaster response to planning and development.

Part of the reason these geospatial technologies are now so widespread and diverse is because the data upon which these intelligent maps and valuable analyses are created are so plentiful and because desktop computer processing power has not only grown tremendously but is now ubiquitous in the marketplace. Combined with powerful, easy to master computer software programs and an eager public and consumer community hungry for more location-based information and analysis, it is easy to see why the geospatial market is growing at an annual rate exceeding 35%, with the commercial area of the market expanding at the rate of nearly 100% per year (GITA).

It is estimated that geospatial technologies will have annual market revenue of \$757 billion by 2017 (RNCOS, 2005), and that a widespread fear in the United States and other countries is that the supply of well-trained and well-educated GIS professionals is not keeping up with the demand. In 2004, the Department of Labor announced an annual shortfall of 3,000 – 4,000 such workers a year, and they allocated \$6 million to try and address the workforce needs of this industry. According to a NASA study (National Workforce Development Education and training Initiative – NWDETI), the job market demands 75,000 skilled GIS workers per year and that the spatial technologies industry is expected to double over a four-year period.

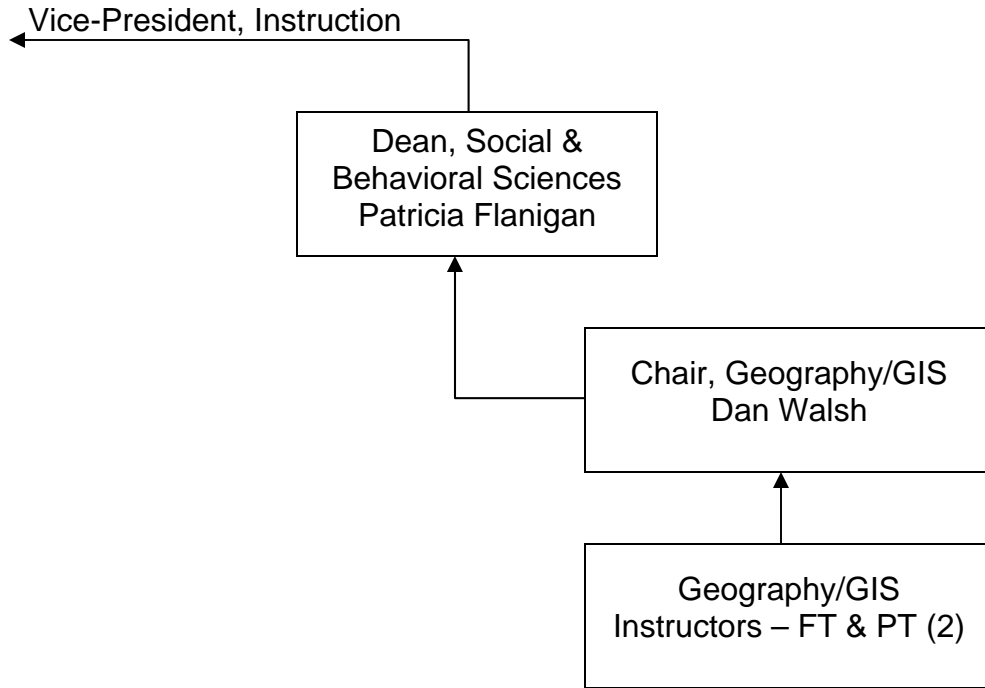
A recent Ten-Year Industry Forecast by the American Society for Photogrammetry and Remote Sensing (ASPRS) concludes that an estimated 175,000 people are employed in the U.S. remote sensing and spatial information industry and that growth is expected to be at least 10-15% annually for the next several years. At a recent National Legislative Summit it became apparent that the stress of finding workers is the geospatial industry is mounting. A survey of geospatial product and service providers revealed that fully 87% of respondents said they had difficulty filling positions requiring geospatial technology skills. The Bureau of Labor Statistics (BLS) has reported that the occupational group that includes key geospatial categories (surveyors, cartographers,

GIS specialists, is one of the groups projected to have the fastest job growth through 2012. The Environmental Systems Research Institute (ESRI) just one of several purveyors of geospatial software, trains over 250,000 people annually worldwide to try and meet some of this demand – and the demand is continuing to rise.

While general unemployment is an increasing problem today, the geospatial industry is one segment of the economy that continues to grow and will be seeking skilled workers well into the foreseeable future. A survey by Geospatial Solutions reported that 93% of respondents said that demand for geospatial data is increasing across the enterprise and that almost 90% of them are already integrating or have plans to integrate GIS into other systems in their organizations (customer service, routing, service allocation, document management, strategic planning, etc.). This means that GIS workers will also soon be needed to not only build, maintain, and produce geospatial output but also to integrate geospatial information with a wide range of other enterprise systems in the workplace.

Finally, with the new administration initiatives in the U.S. government, particularly with respect to infrastructure development, environmental programs, green-technology objectives and similar geospatial-centric projects already committed or under consideration, it is clear that demand for skilled, educated workers in this segment of the economy will continue to rise for many years.

B. Program Organizational Chart



C. Five-Year Program Staffing Profile

Position	Staffing Levels for Each of the Previous Five Years					% Change from Year 1 to Year 5
	2004	2005	2006	2007	2008	
Student Workers	0	0	0	0	0	0
Faculty FT*	1	1	1	1	2	100
Faculty PT	1	1	1	1	1	

- * There are two full-time faculty who could teach GIS currently. However, as is typical with many GIS programs in community colleges, part-time faculty who work in the field and/or are current with the rapid advances in the field are utilized to teach the courses.

D. SLO Assessment Forms GIS

Fall 2008 - Spring 2009

I	II	III	IV	V
Expanded Statement of Institutional Purpose	Program Student Learning Outcomes	Assessment Method and Criteria for Success	Assessment Results	Use of Results
<p>College Goal 3: Provide a meaningful general education program including baccalaureate-level transfer and occupational curricula.</p> <p>Department Goal: As a part of their General Education, the Geography/GIS Department will provide students in geography courses an understanding of the processes and spatial relationships that produce geographic patterns in Earth's human and natural environments as related to the Five Themes of Geography.</p>	<p>GIS 110/GEOG110</p> <p>1. Students will understand the basic components of a GIS and basic spatial analysis, and will be able to create maps with proper cartographic elements.</p>	<p>GIS 110/GEOG110</p> <p>1. 75% of students who complete the course will be able to use basic GIS tools and create a map with correct cartographic elements.</p>		

I	II	III	IV	V
Expanded Statement of Institutional Purpose	Program Student Learning Outcomes	Assessment Method and Criteria for Success	Assessment Results	Use of Results
<p>College Goal 3: Provide a meaningful general education program including baccalaureate-level transfer and occupational curricula.</p> <p>Department Goal: As a part of their General Education, the Geography/GIS Department will provide students in geography courses an understanding of the processes and spatial relationships that produce geographic patterns in Earth's human and natural environments as related to the Five Themes of Geography.</p>	<p>GIS 211/GEOG211</p> <p>1. Students will be able to create a GIS database, perform complex spatial analysis, and present their findings using standard cartographic formats.</p>	<p>GIS 211/GEOG211</p> <p>1. 75% of students who complete the course will be able to apply advanced GIS tools to analyze spatial phenomena and create standard cartographic displays.</p>		

I	II	III	IV	V
Expanded Statement of Institutional Purpose	Program Student Learning Outcomes	Assessment Method and Criteria for Success	Assessment Results	Use of Results
<p>College Goal 3: Provide a meaningful general education program including baccalaureate-level transfer and occupational curricula.</p> <p>Department Goal: As a part of their General Education, the Geography/GIS Department will provide students in geography courses an understanding of the processes and spatial relationships that produce geographic patterns in Earth's human and natural environments as related to the Five Themes of Geography.</p>	<p>GIS 212</p> <p>1. Students will be able to define and analyze a spatial inquiry using advanced GIS techniques.</p>	<p>GIS 212</p> <p>1. Students will create an advance GIS analysis, submit a report, and make a presentation of their findings.</p>		

E. Data Sets for Previous Five Years

Data Source: SOCCCD Management Information System (MIS) Data Warehouse April 2009

Prepared by Shouka Torabi, Research and Planning Specialist, Saddleback College

Section Count

Geography and GIS Course and Section Count by Term and Year

	Fall		Spring				
	2006	2007	2004	2005	2006	2007	2008
	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count
GEOG 110	1	1	1	1	1	1	1
GEOG 211	0	0	1	0	0	0	0
GIS 110	1	1	1	1	1	1	1
GIS 211	0	0	1	0	0	1	1
Total	2	2	4	2	2	3	3

Census Headcount

Geography and GIS C1 Headcount by Course/Term/Year

	Fall		Spring				
	2006	2007	2004	2005	2006	2007	2008
	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount
GEOG 110	1	3	3	1	6	0	0
GEOG 211	.	.	1
GIS 110	18	10	5	12	10	0	0
GIS 211	.	.	9	.	.	0	0
Total	19	13	18	13	16	0	0

End of Term Count

Geography and GIS End of Term Enrollment by Course/Term/Year

	Fall		Spring				
	2006	2007	2004	2005	2006	2007	2008
	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment
GEOG 110	1	3	3	1	6	6	2
GEOG 211	0	0	1	0	0	0	0
GIS 110	18	10	5	12	10	21	7
GIS 211	0	0	9	0	0	12	8
Total	19	13	18	13	16	39	17

Summary of All Courses by Grade/Success/Retention

Geography and GIS Summary of All Courses by Grade/Success/Retention

		Grades									success	retention	
		A	B	C	CR	D	F	NC	W	XX	Total	Percent	Percent
		Count	Count	Count	Count	Count	Count	Count	Count	Count	Count		
2004	Spring	8	3	1	1	0	3	0	1	1	18	72.2%	94.4%
2005	Spring	6	2	2	0	0	2	1	0	0	13	76.9%	100.0%
2006	Spring	5	3	1	0	0	1	1	4	1	16	56.3%	75.0%
	Fall	5	3	0	2	0	1	1	4	3	19	52.6%	78.9%
2007	Spring	9	0	3	1	1	2	1	9	13	39	33.3%	76.9%
	Fall	3	3	2	1	0	1	0	2	1	13	69.2%	84.6%
2008	Spring	10	0	0	0	1	0	0	2	4	17	58.8%	88.2%

Grade XX = None of the above/unknown.

Success Rate: Percent of students successful in courses out of total enrolled in courses (RP Group, 1996).

The success rate is calculated by dividing the numerator (number of students duplicated with A, B, C, CR) by the denominator (number of students with A, B, C, D, F, CR, NC, W, I, XX)

Retention Rate: Percent of students retained in courses out of total students enrolled in courses (RP Group, 1996).

The retention rate is calculated by dividing the numerator (number of students duplicated with A, B, C, D, F, CR, NC, I, XX) by the denominator (number of students with A, B, C, D, F, CR, NC, W, I, XX).

Summary of GEOG 110, GEOG 211, GIS 110, & GIS 211 by Grade/Success/Retention

Geography and GIS Courses by Grade/Success/Retention

			Grades									success	retention		
			A	B	C	CR	D	F	NC	W	XX	Total			
			Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Percent	Percent	
GEOG 110	2004	Spring	1	1	0	0	0	1	0	0	0	3	66.7%	100.0%	
	2005	Spring	0	0	1	0	0	0	0	0	0	1	100.0%	100.0%	
	2006	Spring	1	1	1	0	0	0	0	3	0	6	50.0%	50.0%	
		Fall	0	0	0	0	0	0	0	1	0	1	.0%	.0%	
	2007	Spring	0	0	0	0	0	0	0	2	4	6	.0%	66.7%	
		Fall	0	1	0	0	0	1	0	1	0	3	33.3%	66.7%	
	2008	Spring	1	0	0	0	0	0	0	1	0	2	50.0%	50.0%	
	GEOG 211	2004	Spring	1	0	0	0	0	0	0	0	0	1	100.0%	100.0%
GIS 110	2004	Spring	1	1	0	0	0	2	0	0	1	5	40.0%	100.0%	
	2005	Spring	6	2	1	0	0	2	1	0	0	12	75.0%	100.0%	
		Fall	4	2	0	0	0	1	1	1	1	10	60.0%	90.0%	
	2007	Spring	4	0	1	1	1	2	1	3	8	21	28.6%	85.7%	
		Fall	3	2	2	1	0	0	0	1	1	10	80.0%	90.0%	
	2008	Spring	3	0	0	0	1	0	0	1	2	7	42.9%	85.7%	
	GIS 211	2004	Spring	5	1	1	1	0	0	0	1	0	9	88.9%	88.9%
		2007	Spring	5	0	2	0	0	0	0	4	1	12	58.3%	66.7%
2008		Spring	6	0	0	0	0	0	0	0	2	8	75.0%	100.0%	

Grade XX = None of the above/unknown.

Success Rate: Percent of students successful in courses out of total enrolled in courses (RP Group, 1996).

The success rate is calculated by dividing the numerator (number of students duplicated with A, B, C, CR) by the denominator (number of students with A, B, C, D, F, CR, NC, W, I, XX)

Retention Rate: Percent of students retained in courses out of total students enrolled in courses (RP Group, 1996).

The retention rate is calculated by dividing the numerator (number of students duplicated with A, B, C, D, F, CR, NC, I*, XX) by the denominator (number of students with A, B, C, D, F, CR, NC, W, I, XX).

Gender by Year/Term

Geography and GIS Gender by Year/Term Duplicated Headcount

		F		M		X		Total	
		Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
2004	Spring	9	50.0%	9	50.0%	0	.0%	18	100.0%
2005	Spring	8	61.5%	5	38.5%	0	.0%	13	100.0%
2006	Spring	2	12.5%	14	87.5%	0	.0%	16	100.0%
	Fall	7	36.8%	12	63.2%	0	.0%	19	100.0%
2007	Spring	15	38.5%	24	61.5%	0	.0%	39	100.0%
	Fall	5	38.5%	7	53.8%	1	7.7%	13	100.0%
2008	Spring	7	41.2%	10	58.8%	0	.0%	17	100.0%

Courses by Zip Code

Geography and GIS by Zip Code Duplicated Headcount

		Saddleback		Irvine		Out of District		Total	
		Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
2004	Spring	14	77.8%	2	11.1%	2	11.1%	18	100.0%
2005	Spring	8	61.5%	2	15.4%	3	23.1%	13	100.0%
2006	Spring	14	87.5%	2	12.5%	0	.0%	16	100.0%
	Fall	19	100.0%	0	.0%	0	.0%	19	100.0%
2007	Spring	34	87.2%	2	5.1%	3	7.7%	39	100.0%
	Fall	8	61.5%	0	.0%	5	38.5%	13	100.0%
2008	Spring	13	76.5%	0	.0%	4	23.5%	17	100.0%

Age Group Distribution by Year/Term

Geography and GIS Age Group Distribution by Year/Term Duplicated Headcount

		Age Groups											
		18-21		22-25		26-35		36-50		51-65		Total	
		Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
2004	Spring	1	5.6%	2	11.1%	7	38.9%	5	27.8%	3	16.7%	18	100.0%
2005	Spring	2	15.4%	3	23.1%	5	38.5%	1	7.7%	2	15.4%	13	100.0%
2006	Spring	2	12.5%	2	12.5%	4	25.0%	5	31.3%	3	18.8%	16	100.0%
	Fall	2	10.5%	1	5.3%	0	.0%	10	52.6%	6	31.6%	19	100.0%
2007	Spring	6	15.4%	5	12.8%	10	25.6%	11	28.2%	7	17.9%	39	100.0%
	Fall	0	.0%	0	.0%	4	30.8%	5	38.5%	4	30.8%	13	100.0%
2008	Spring	0	.0%	3	17.6%	5	29.4%	3	17.6%	6	35.3%	17	100.0%

Ethnicity by Year/Term

Geography and GIS Ethnicity by Year/Term Duplicated Headcount

		Ethnic Groups															
		Asian		African American		Hispanic		American Indian/Alaskan Native		Other		White		Unknown		Total	
		Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
2004	Spring	2	11.1%	0	.0%	1	5.6%	0	.0%	0	.0%	13	72.2%	2	11.1%	18	100.0%
2005	Spring	2	15.4%	0	.0%	0	.0%	0	.0%	0	.0%	9	69.2%	2	15.4%	13	100.0%
2006	Spring	1	6.3%	1	6.3%	0	.0%	0	.0%	0	.0%	14	87.5%	0	.0%	16	100.0%
	Fall	1	5.3%	0	.0%	2	10.5%	0	.0%	0	.0%	16	84.2%	0	.0%	19	100.0%
2007	Spring	2	5.1%	0	.0%	4	10.3%	1	2.6%	0	.0%	25	64.1%	7	17.9%	39	100.0%
	Fall	0	.0%	0	.0%	3	23.1%	1	7.7%	0	.0%	6	46.2%	3	23.1%	13	100.0%
2008	Spring	2	11.8%	0	.0%	1	5.9%	0	.0%	1	5.9%	11	64.7%	2	11.8%	17	100.0%

Educational Goals by Year/Term

Geography and GIS Educational Goals by Year/Term Duplicated Headcount

	2004		2005		2006				2007				2008	
	Spring		Spring		Spring		Fall		Spring		Fall		Spring	
	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
AA/AS and transfer	3	16.7%	3	23.1%	1	6.3%	2	10.5%	5	12.8%	2	15.4%	3	17.6%
Transfer w/o AA/AS	0	.0%	0	.0%	3	18.8%	1	5.3%	3	7.7%	0	.0%	0	.0%
AA/AS w/o transfer	0	.0%	0	.0%	0	.0%	0	.0%	1	2.6%	0	.0%	0	.0%
2-yr Voc. w/o transfer	0	.0%	1	7.7%	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%
Voc. certif. w/o transfer	3	16.7%	0	.0%	0	.0%	2	10.5%	2	5.1%	0	.0%	2	11.8%
Discover interests	0	.0%	1	7.7%	2	12.5%	1	5.3%	3	7.7%	1	7.7%	0	.0%
Acquire job skills	5	27.8%	0	.0%	6	37.5%	2	10.5%	3	7.7%	1	7.7%	3	17.6%
Update job skills	4	22.2%	5	38.5%	2	12.5%	2	10.5%	9	23.1%	5	38.5%	4	23.5%
Ed. development	2	11.1%	2	15.4%	2	12.5%	7	36.8%	6	15.4%	3	23.1%	3	17.6%
Basic Skills	0	.0%	1	7.7%	0	.0%	1	5.3%	2	5.1%	0	.0%	0	.0%
HS or GED	0	.0%	0	.0%	0	.0%	0	.0%	1	2.6%	0	.0%	0	.0%
Undecided	1	5.6%	0	.0%	0	.0%	1	5.3%	4	10.3%	1	7.7%	2	11.8%
Total	18	100.0%	13	100.0%	16	100.0%	19	100.0%	39	100.0%	13	100.0%	17	100.0%