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I. Department/Program Mission

<p>1. State the department name and everyone who participated in creating the comprehensive program plan.</p>	<p>Geography and Geographic Information Systems K. Allison Lenkeit Meezan</p>
<p>2. State the program's mission. If you don't have one, create one.</p>	<p>Geography provides an integrated perspective on social, political, economic, and physical phenomena occurring over space. Geography fulfills transfer requirements for four-year schools and emphasizes themes of the natural and built environment, human caused change to the natural world, and sustainability. Geography challenges students to grow into informed global citizens equipped with the tools to examine and assess the impacts of their actions.</p> <p>Geospatial technology is the unifying tool with which spatial phenomena is explored. Geospatial technology consists of Geographic Information Systems (GIS), Global Positioning Systems (GPS) and Remote Sensing (RS). The Geographic Information Systems Certificate program provides opportunities for career preparation, lifelong learning and transfer by providing courses that lead to a set of scaled certificates that meet workforce needs and fulfill transfer requirements.</p>
<p>3. Explain how the program/department mission is aligned with the college mission?</p>	<p>Geography provides transfer, career technical education and lifelong learning. The geographic approach engages students through multiple teaching styles and promotes a global awareness, sustainable practices, and the effects of human environment interactions.</p>

II. Department and Program Description & Data

1. What are your hours of operation? 24/7	Our offices open at: Closed for Lunch: No <input type="checkbox"/> or Yes <input type="checkbox"/> If yes, when: Our offices closed at:			
2. What types of classes do you offer, at what locations, and at what times?	Times offered: <input checked="" type="checkbox"/> Morning (6AM-12PM) <input type="checkbox"/> Afternoon (12PM-4PM) <input checked="" type="checkbox"/> Evening (4PM-10PM)	Locations offered: <input checked="" type="checkbox"/> FH Main Campus <input type="checkbox"/> Middlefield <input type="checkbox"/> Off campus	Types Offered: <input checked="" type="checkbox"/> In Person <input checked="" type="checkbox"/> Hybrid <input checked="" type="checkbox"/> Distance	Status Offered: <input checked="" type="checkbox"/> Credit <input type="checkbox"/> Non-credit
3. List current positions and descriptions for all personnel in your area on the chart below (include position titles only, not individual names).				
Faculty Positions by Discipline	Full-time Headcount	Part-time Headcount	Brief Description of duties	
Geography and Geographic Information Systems	1	5	Teaching, planning, promoting, recruiting (students and part time faculty), administering certificate program	
Position Title	0	0		
Position Title	0	0		
Position Title	0	0		
Position Title	0	0		
Position Title	0	0		
Management and Classified Positions	Full-time Headcount	Part-time Headcount	Brief Description of duties	
Position Title	0	0		
Position Title	0	0		
Position Title	0	0		
Position Title	0	0		
Student Worker Positions	Hours per Week	Months per Year	Brief Description of duties	
Position Title	0.00	0		

Position Title	0.00	0	
Position Title	0.00	0	

<p>4. Given the data, describe the trends in enrollment, FTES, and Average Class size. What are the implications for your department?</p>	<p>An examination of the Geography program numeric profile shows a stable pattern of enrollment, FTES and class size. Productivity for the Geography department has dropped over the past three years, despite an increase in enrollment, due to the loss of the TBA student contact hour.</p> <p>In the last three years the enrollment has increased 11% (from 775 to 867), and WSCH increased by 23% over the same time period (from 4487 to 5518), and it has increased markedly (69%) from the 2001-2002 rate of 3271. Productivity varies greatly by course within Geography.</p> <p>The primary factor leading to the lower than division average productivity is the seat count in several courses. Geography 1 is a lab science course, so must be limited to 35 students per section. Geography 1 is, however, one of the most frequently offered courses in Geography (14 sections in 2008-09). It fills an important role as a GE laboratory science course, needed for graduation and transfer. Further, it is the only lab science course offered online, which makes it possible for the college to offer online degrees. The department is experimenting with innovative hybrid delivery methods to increase retention in this course.</p> <p>Similarly, the GIS courses (GEOG 12 and higher) have a seat limit of 29 due to the computer classroom (4008) that they are offered in. This puts their maximum possible productivity at 387. Due to the technical nature of this course, it is not practical to have a significantly higher seat count without the addition of laboratory technician support in the classroom. The productivity of the GIS program is further hampered by the 'pipeline' problem that not all students who take the first course in the GIS sequence are planning to continue on to earn a certificate. Therefore, the subsequent courses in the certificate program are under enrolled. The department is attempting to address this problem in Fall 2009 by offering two sections of GEOG 12, which will hopefully lead to full single sections of the subsequent courses.</p> <p>Class sizes in GEOG 2, 5, and 10 vary greatly. The traditional sections of the course generally do not reach maximum enrollment. This is because they are offered infrequently, and by part time faculty who do not have a significant presence on campus. The productivity of the Geography department could be greatly increased by offering more frequent sections of</p>
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	<p>GEOG 2, 5, and 10 on campus to build up the visibility and reputation of these courses.</p> <p>Retention remains high (90%), student success rates (79%) continue to increase. Much of the flux in numeric trends can be attributed to external factors relating to the sole full time faculty (2 quarters of leave), and the associated lack of a full time presence on campus.</p> <p>The Geographic Information Systems (GIS) certificate program was introduced in the 2001-2002 academic year, and has continued to grow and enhance the Geography program. GIS skills are widely sought by traditional employers of Geography majors, as well as by many nontraditional ones (e.g. business, journalism, social services etc.). Foothill College is the only community college in the region to offer a comprehensive GIS certificate program. The program has flourished, despite the recent economic downturn and the corresponding enrollment drop in other computer-related training programs. The Geography program is confident that its enrollment will continue to grow as societal awareness of the critical importance of geotechnology to a liberal education also grows.</p> <p>The Geography program would like to expand to consistently offer sections of its core courses both on campus and online (currently, one of the four courses required for the major is only offered online). The faculty is also exploring new modes of hybrid course delivery to better meet student learning needs.</p> <p>In addition, the GIS Certificate program has recently expanded the number of sections of the introductory course that it offers from one to two per year, allowing double the number of students to enter the pipeline to attain a certificate in GIS. The GIS program is exploring curriculum partnerships with the Environmental Sciences program at the DeAnza Kirsh center as an additional method to increase the student pipeline.</p> <p>The enrollment and productivity of the GIS courses is hampered by their technical nature and the fact that the computer classrooms in which they are taught can accommodate no more than 29 students, leaving the class seat limit well below the division goal of 37 students per class.</p>
<p>5. Student Achievement: Given the data, describe the trends in overall success rates, retention rates, and degrees and certificates awarded. What are the implications for your</p>	<p>The Geography Department is strongly committed to maintaining high academic standards, while offering high quality education that meets the diverse learning styles of our students. Our faculty employ many tools to continually improve student success. These include class websites, hands-on activities, small group discussions, research papers, videos, multi-media classroom presentations and guest speakers. In addition,</p>

<p>department?</p>	<p>our faculty has made frequent presentations to the counselors to communicate the expectations and benefits of a geography education.</p> <p>While the student success rate in Geography classes remains below the college average, the faculty feel that this is due to the rigorous nature of Geography education which demands strong written and analytical skills, along with computational and spatial skills.</p> <p>The Geography department is examining using a new technology to reach diverse learning styles and help bolster student success, and will continue to work closely with the counselors to communicate the academic rigors of the discipline. The Geography department is committed to maintain the academic rigor and integrity of the coursework, while striving to achieve the highest possible level of student success.</p> <p>Of note, is the extremely high retention (98%) and success (89%) in the GIS program classes. While these classes have a relatively small enrollment base (135 for 2008), they boast a higher than average success rate among minorities and females, groups that are traditionally underrepresented in the technical fields. The number of certificates awarded in the GIS program needs to be increased. This could be achieved by providing better student tracking and follow up for students completing the program.</p>
<p>6. Student Equity: Given the data, describe the trends with respect to underrepresented students. How will your program address the needs/challenges indicated by the data?</p>	<p>By its very nature, Geography approaches academic study from multiple cultural view points. The Geography program is sensitive to varied learning styles students may possess given their ethnicity, gender and age. The student diversity in the Geography program is similar to the college as a whole. However, because of the small size of the program, many of the student success figures are skewed due to small sample sizes, in particular with regards to the success rates of self-identified students of Black, Native American and Pacific Islander race. Geography courses will continue to foster an environment of openness, acceptance and learning from the diverse perspectives of its student population.</p>
<p>7. Given the data, discuss how the FTEF trends and FTEF/FTES ratio will impact your program. Include any need for increasing or reducing your program faculty. What are the implications for your department?</p>	<p>It is a long-term goal of the Geography program to increase the number of sections offered in its GIS courses and to consistently offer its core transfer courses both in person and online. Currently, 46% of the program offerings are online. It is a goal of the Geography department to increase its on campus presence. Because of the difficult nature of recruiting and retaining adjunct faculty, the Geography department would like to add an additional full time faculty member.</p>

	<p>In addition, the Geographic Information Systems certificate program needs 10% annual release time for a full-time faculty member to administer the GIS Career program. The only full time GEOG/GIS full time faculty member currently works 4 hours per week conducting GIS-program related outreach, program administration, student mentoring and internship acquisition. However, both the Geography and GIS programs could benefit from additional time and attention to advertising and curricular awareness. These significant demands are placed on the only full time Geography/GIS faculty member, and extend beyond the collegial duties expected of all full time faculty.</p>	
<p>8. Given the data for distance learning, describe the trends related to success, retention, and student satisfaction. Discuss solutions to ensure that rates match or exceed those of comparable traditional format courses.</p>	<p>The overall distance learning student retention and success rates are lower (86% and 74% respectively) than the non-distance learning success and retention rates (96% and 86% respectively). These mirror the trends for distance versus non-distance education in the college as a whole. Of concern is the significantly lower success rates in distance education in specific minority groups. In the non-distance education Geography classes 100% (n.7) of the Black, and 92% (n.24) of the students were successful. In the distance education classes, 47% (n.20) of the Black, and 79% (n. 50) of the Hispanic students were successful.</p> <p>The department is developing a modular hybrid course model to try to meet student diverse student learning styles and needs. In addition, further resources at the college level should be dedicated to this disparity in success.</p>	
<p>9. Optional: Provide any additional data relevant to your program. (Indicate the source of the data).</p>	<p>N/A</p>	
<p>10. Are you seeing trends that are not reflected in the data cited above? If yes, please explain.</p>	<p>No.</p>	

Summary of Planning Goals & Action Plans				
11. Identify 3-6 operational goals and link them to one or more college strategic initiatives or to your operations.				
Department Operational Goals	College Strategic Initiatives			
Identify 3-6 operational goals	Building a Community of Scholars	Putting Access into Action	Promoting a Collaborative Decision-making Environment	Operations Planning
Increase the campus presence of Geography & GIS courses through additional on campus sections and recruiting and outreach for the GIS program	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Convene the GIS program advisory board annually to examine curriculum and align program learning outcomes with workforce needs.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Better meet the needs of diverse learning styles	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the number of certificates awarded for the GIS program	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Maintain program currency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. What is your plan for accomplishing your goals?				
Department Operational Goals	Activities			
Increase the campus presence of Geography & GIS courses through additional on campus sections and recruiting and outreach for the GIS program; Increase the number of certificates awarded in the GIS program	<ul style="list-style-type: none"> Hire a second full time Geography & GIS full time faculty member Provide 10% annual release time to the GIS program coordinator to participate in program coordination, outreach, promotion and student mentorship activities including tracking and follow up to insure students follow through with applying for their certification. 			
Convene the GIS program advisory board annually to examine curriculum and align program learning outcomes with workforce needs.	<ul style="list-style-type: none"> Convene the GIS program advisory board annually to review curriculum and align program learning outcomes with workforce needs. 			
Better meet the needs of diverse	<ul style="list-style-type: none"> Explore innovative hybrid course delivery models 			

learning styles		
Increase the number of certificates awarded for the GIS program		<ul style="list-style-type: none"> Invest significant additional faculty time advising, tracking and mentoring GIS program students to insure that students complete the full suite of certificate course work and follow through to apply for GIS certificates. This can be best accomplished by providing for 10% annual release time for a GIS program coordinator.
Maintain program currency		<ul style="list-style-type: none"> Utilize the most current versions of GIS software to meet employer needs for graduates of the GIS certificate program Purchase up-to-date DVDs to bring current innovations and developments in the field into the classroom.
13. Are additional resources needed to accomplish your department operational goals? If yes, identify the resource, as well as the purpose and rationale for each resource.		
Identified Resource	Purpose	If requesting funding, provide a rationale of how each request supports one or more college strategic initiative and/or supports student learning.
10% release time for GIS program coordinator. Approximately \$8,500	Participate in program coordination, outreach, promotion and student mentorship activities. Increase the number of certificates awarded.	<p>The GIS certificate program is a career technical workforce program. Providing release time dedicated to GIS program coordination, outreach, promotion and student mentorship activities will help the GIS program build a community of scholars through increased presence and interaction in professional organizations and activities which directly benefits student learning by increasing student access to up-to-date industry practices and trends. This release time will also help GIS students build a community of scholars by providing additional time for the program coordinator to be available work with students to develop academic plans and mentor their career development. Finally, release time would allow the GIS program to better integrate with K-12 and 4 year university curriculum by developing career transfer pathways.</p> <p>Release time will promote a collaborative decision making environment by allowing the program coordinator to engage a professional advisory board to review program curriculum. Release</p>

		<p>time will put access into action by allowing the program coordinator to conduct student internship site visits and seek out and apply for grant funding to support the program release time. Release time will also put access into action providing time to work with the professional advisory board to meet the ever changing needs of the professional community by revising the program curriculum on an annual basis.</p> <p>Release time will also build a community of scholars and increase the number of certificates awarded by allowing the time for the GIS program coordinator to better track GIS program students and follow up with them to insure that students who have completed the coursework follow through with applying for their certificate.</p> <p>Finally, release time will allow better operations planning by providing the time for the program coordinator to recruit, interview and evaluate the large group of part time instructors which are vital to the program's success.</p> <p>The GIS program has been partially funded through grant funding (\$450,000 NSF ATE award for 2005-2010), however, this funding did not specifically support program coordination, outreach, promotion and student mentoring. Furthermore, the department has been discouraged from continuing to seek out further grant funding because of a lack college and district level support for grant administration, budgeting and contract writing.</p>
\$200	Hold annual advisory board meetings. Provide lunch to advisory board members	<p>An annual advisory board meeting is vital to maintain program currency as well as to maintain the presence of our program within the regional professional community.</p> <p>This meets the strategic goal of operations planning by providing an opportunity to annually review and update program curriculum. By engaging GIS professionals in the curriculum development process, this advisory board meeting will promote a collaborative decision</p>

		making environment. An advisory board also builds a community of scholars by bringing a group of GIS professionals together to evaluate the certificate program curriculum and discuss internship and job opportunities for program graduates.
\$500	Stipend for organizing and convening GIS program advisory board	An advisory board is vital to maintain the currency and program presence in the community. IF faculty release time for the GIS program coordinator <i>cannot</i> be granted, it is requested that a stipend be funded to pay an adjunct faculty member to organized and convene the GIS program advisory board. The GIS program advisory board meets the strategic goal of operations planning by providing an opportunity to annually review and update program curriculum. By engaging GIS professionals in the curriculum development process, this advisory board meeting will promote a collaborative decision making environment. An advisory board also builds a community of scholars by bringing a group of GIS professionals together to evaluate the certificate program curriculum and discuss internship and job opportunities for program graduates.
\$2,700	Site license for ESRI ArcGIS and IDRISI software – <i>required</i> for teaching the GIS certificate program	ESRI ArcGIS software is the industry standard GIS software. In order for Foothill to continue to offer an extremely high quality GIS education to our students, we must utilize the industry standard software. Idrisi software is a low cost remote sensing software that is required for teaching the Remote Sensing class for the GIS certificate program. This puts access into action by aligning industry needs with curriculum. Further, utilizing the ArcGIS software helps to build a community of scholars by increasing purposeful student learning (aligned with workforce needs) and increases the number of certificates awarded by making the Foothill program attractive to prospective students.
\$450	Purchase 2-3 new DVDs to bring current innovations and developments in the field into the classroom.	The purchase of 2-3 new DVDs to add to the library collection will help to build a community of scholars by bringing current earth science events such as Hurricane Katrina, the 2004 east Asian tsunami, major earthquakes and recent data on global warming into the classroom. The most recent events in our current earth sciences video collection are 14 years old. More recent events in the DVD collection will spark

		student interest in the material and increase student learning.	
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III. Curriculum	
<i>Curriculum Overview</i>	
1. How does your curriculum address the needs of diverse learners ?	<p>By its very nature, Geography approaches academic study from multiple cultural view points. The Geography program is sensitive to varied learning styles students may possess given their ethnicity, gender and age.</p> <p>Physical Geography, by far the most frequently offered course in Geography, is experimenting with new hybrid course delivery styles to best meet student learning styles.</p>
2. How does your curriculum respond to changing community, student, and employer needs?	<p>The Geography curriculum is reevaluated every three years with Title V updates. The currency of the curriculum is evaluated and aligned with current discipline trends and transfer institution curriculum.</p> <p>The GIS Certificate program reevaluates its curriculum each year. The materials presented in the GIS Certificate program classes are revised and updated to reflect the latest industry trends and software releases. The addition (pending funding) of a professional advisory board will further align the curriculum with workforce needs.</p>
3. How does your curriculum support the needs of other certificates or majors?	<p>Geography classes serve as electives in the following majors: Anthropology, Economics, History, and Social Science. The GIS program has collaborated with the DeAnza Wildlife Biology and Environmental Sciences program to provide supporting coursework for students in these programs.</p>
4. Do your courses for the major align with transfer institutions?	Yes.

<p>5. Do your courses have appropriate and necessary prerequisites? Identify any challenges and plans to address the challenges.</p>	<p>None of the courses in Geography & GIS currently have prerequisites. It is the position of Geography faculty that all college level transfer courses in the social sciences should have a prerequisite of college level English. The reason for this is that social science courses require significant reading (college level textbooks) as well as significant amounts of writing. The primary challenge to this is a lack of institutional support for the enrollment decline that would initially occur if such a college-wide prerequisite were to be implemented.</p> <p>Physical Geography (a laboratory science course) currently has an advisory for Math 102 (pre-algebra). This is not a college level mathematics course. However, it similarly not listed as a prerequisite because of the lack of institutional support for the enrollment decline which may initially occur if such a prerequisite were to be implemented.</p>	
<p>6. Review the attached curriculum report for currency. What is your plan to address the deficiencies? (Consider: Title V, course deactivation, updated prerequisites, cross-listed courses, measuring student learning outcomes, curriculum sheets, certificates and degrees).</p>	<p>The Geography curriculum is current. All sections of the Geography and GIS courses go through a Title V review every three years. This provides an opportunity to review courses for deactivation and curriculum currency. The annual review of student learning outcomes provides an avenue to review curriculum sheets to insure students are being taught what they need to learn.</p>	
<p>7. Does your program offer distance education courses?</p>	<p>Yes.</p>	

<p>8. If you offer distance education courses, list one or two short examples of how your distance education courses provide for effective interaction between students and faculty.</p>	<p>Online asynchronous discussion forums are commonly used in Geography distance education and hybrid courses to promote student-student and student-faculty interaction. There are several advantages to conducting discussions in the online format.</p> <p>Asynchronous discussion encourages participation by students who otherwise may be too shy to speak up in class. Second, asynchronous discussions improve accessibility and instructor participation in a large class. In a class of 35 (lab science) or 50 students, discussions are usually dominated by a few vocal students, or students are broken into smaller groups and the instructor must divide his/her time between the groups. In the asynchronous discussion format students can be broken into smaller assigned groups and the instructor can facilitate each group – essentially being in multiple places at one time. Finally, because the asynchronous discussion forum leaves a permanent record of student contributions, it is much easier for an instructor to evaluate student participation in group discussions.</p> <p>Students can also interact with faculty via email and class private (individual) messages. Finally, faculty can reach all students through class announcements that are both displayed in the course management system and pushed to student email.</p>	
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<p>9. If you offer distance education courses, list one or two short examples of how your distance education courses provide for effective interaction among students.</p>	<p>Online asynchronous discussion forums are commonly used in Geography distance education and hybrid courses to promote student-student and student-faculty interaction. There are several advantages to conducting discussions in the online format.</p> <p>Asynchronous discussion encourages participation by students who otherwise may be too shy to speak up in class. Second, asynchronous discussions improve accessibility and instructor participation in a large class. In a class of 35 (lab science) or 50 students, discussions are usually dominated by a few vocal students, or students are broken into smaller groups and the instructor must divide his/her time between the groups. In the asynchronous discussion format students can be broken into smaller assigned groups and the instructor can facilitate each group – essentially being in multiple places at one time. Finally, because the asynchronous discussion forum leaves a permanent record of student contributions, it is much easier for an instructor to evaluate student participation in group discussions.</p>
<p><i>College Skills (Pre-collegiate) Overview (Data Available Fall 2009-filling out this section is optional)</i></p>	
<p>10. What college skills should a student have before entering your program?</p>	<p>Students should have the ability to read and write at a college level. Further, students taking Physical Geography (GEOG01) should have a minimum of pre-collegiate (pre-Algebra) math skills.</p>
<p>11. Given the data, comment on the effectiveness of the assessment and placement of college skills students into your program. (For MATH, ENGL and ESL only).</p>	<p>N/A</p>
<p>12. In what ways are you addressing the needs of the college skills students in your program?</p>	<p>Students who do not have the reading or writing skills to succeed in Geography courses are directed to the tutorial center for help with essay writing. In addition, faculty work to insure that college skills students are connected with the counseling services they need to design an academic plan that will best insure their success in college level course work.</p>

13. How are faculty in your program collaborating with other disciplines and services to meet the needs of college skills students?	On an informal basis the faculty work with referring students to counseling services.	
<i>Program Mapping</i>		
14. If applicable, identify any sequence of courses that are part of your program. List in the order that they should be taken by students.	Within GIS, it is strongly recommended that GEOG12 (Introduction to GIS) be completed prior to enrolling in GEOG52 (Advanced GIS). Further, students are not allowed to take the GIS internship before they have completed all of the other coursework for their certificate.	
15. For your courses that are part of a sequence – are the student learning outcomes well aligned with the next course in the sequence? Please work with the college researcher to answer this question - once your sequence of courses is identified.	Yes.	
16. If applicable, describe any capstone course , signature assignment (project, service learning , portfolio), or exam that demonstrates knowledge, skills, and abilities, indicating successful program completion?	The capstone of the GIS certificate of Achievement is an internship. This is a 72 hour internship in which students are placed under the supervision of a mentor in a local public or private industry. The students undertake a supervised GIS project that allows them to apply the skills that they have learned over the course of the GIS certificate program.	
<i>Course Scheduling & Consistency</i>		
17. Given available data, describe the trends in the scheduling of morning , afternoon , and evening classes, as well as Friday, Weekend , and distance education classes. Comment on the feasibility of offering classes at non-standard times.	<p>The majority of classes offered in Geography are morning or online classes. Early morning course offerings (8AM) has met with lower enrollment, in particular in winter and spring quarters.</p> <p>The GIS courses are offered entirely in the evenings to meet the needs of the CWE students. Most GIS students work full time. Afternoon offerings of GIS classes has met with limited success. It is a long term goal of the GIS program to design a bridge to GIS course that will transfer as a GE to CSU and UC. This course would be modeled on a course developed with funding from the National Science Foundation at San Diego Mesa college and CSU San Diego.</p>	

<p>18. Are required courses scheduled in appropriate sequence to permit students to complete the program in the prescribed length of time? If yes, describe the rationale upon which the sequence is based. If no, what is the plan to change the scheduling pattern? What are the barriers that prohibit implementation of the changes? Explain.</p>	<p>The Geography major courses do not follow a specific sequence.</p> <p>The GIS certificate courses are offered in a pattern to allow students to complete the certificate in one academic year.</p>	
<p>19. How does the department determine that classes are taught consistently with the course outline of record?</p>	<p>The department conducts regular evaluations of all faculty in accordance with the Faculty Association Agreement.</p>	
<p>Summary of Planning Goals and Action Plans</p>		

20. What are your goals with respect to curriculum and how will those goals be measured?

The Geography and Geographic Information Systems department has four curriculum goals:

1. Continue to offer curriculum that is current and transferable.
2. Insure that students are meeting department outlined Student Learning Outcomes for each course.
3. Design new modular hybrid course delivery models to increase student success and learning and meet the needs of the digital native and non-digital native student population.
4. Develop an 'Introduction to Mapping' course that meets GE requirements in computational and mathematical reasoning.

These goals will be measured in the following ways:

1. *Continue to offer curriculum that is current and transferable*: Conduct regular reevaluations of curriculum through Title V updates
2. *Insure that students are meeting department outlined Student Learning Outcomes for each course, and where appropriate modifying*: Evaluate one SLO from each course annually. Assess the data and where appropriate modify the curriculum to better meet the learning outcomes.
3. *Design new modular hybrid course delivery models to increase student success and learning and meet the needs of the digital native and non-digital native student population*: Design and evaluate student success and retention from this modular hybrid model.
4. *Develop an 'Introduction to Mapping' course that meets GE requirements in computational and mathematical reasoning*: Develop this course in collaboration with colleagues from San Diego Mesa College and CSU San Diego as well as the Foothill College GIS advisory board.

21. Are additional resources needed to accomplish your curriculum goals? If yes, identify the resource, as well as the purpose and rationale for each resource.		
Identified Resource	Purpose	If requesting funding, provide a rationale for how each request supports one or more college strategic initiative and/or supports student learning.
\$450	Purchase 2-3 new DVDs to bring current innovations and developments in the field into the classroom.	The purchase of 2-3 new DVDs to add to the library collection will help to build a community of scholars by bringing current earth science events such as Hurricane Katrina, the 2004 east Asian tsunami, major earthquakes and recent data on global warming into the classroom. The most recent events in our current earth sciences video collection are 14 years old. More recent events in the DVD collection will spark student interest in the material and increase student learning.

IV. Student Learning Outcomes

Student Learning Outcome Assessment

1. **Be sure and complete your student learning outcomes assessment for each course online through the C3MS system. When the program review form is online, the resources that you tie to your student learning outcomes will be included here on this form.**

2. Are additional resources needed to accomplish your student learning outcome goals that were not included in C3MS report? If yes, identify the resource, as well as the purpose and rationale for each resource.

Identified Resource	Purpose	If requesting funding, provide a rationale for how each request supports one or more college strategic initiative and/or supports student learning.

V. Departmental Engagement	
1. What standing committees, if any, does your department maintain? What are the committee charges and membership?	None.
2. What interdepartmental collaboration beyond college skills has your department been involved in during the past 4 years?	None.
3. What has your department done since its last program review to establish connections with schools, institutions, organizations, businesses, and corporations in the community?	The Geography and GIS program has been very active in the Bay Area professional GIS community. GIS students are placed in internships with public and private agencies, and Foothill continues to be a regular presence at professional conferences to maintain the visibility of the program.
4. In what ways if any, are you or have you worked with area high schools to align curriculum from the high school to your course?	The Foothill Geography and GIS program is collaborating with Ohlone on a state Workforce Innovation Partnership to develop 2+2 articulation between high school and college and to develop a career pathway from high school to a technical GIS certification.
5. In what ways if any, are you working with CSUs, UCs, private, or out-of-state institutions to align courses and develop articulation agreements ?	Foothill has collaborated with San Jose State University on a four year NSF sponsored grant to develop articulated coursework between the GIS programs at the schools. Two courses were developed as a result of this.
Summary of Planning Goals and Action Plans	
6. What are your goals with respect to departmental engagement and how will those goals be measured?	<p>The Geography and GIS program has three goals with regards to departmental engagement. The goals and their assessments are as follows:</p> <ol style="list-style-type: none"> 1. Continue active engagement with the Bay Area professional GIS community through participation in professional meetings and organizations. This will be measured by the level of involvement of program students in the local professional organization and participation in local and regional meetings and conferences. 2. Continue to collaborate with Ohlone on the WIP 2+2

	<p>articulation project. This goal will be assessed by the successful implementation of an articulated GIS course to provide a technical career pathway from high school to college.</p> <p>3. Collaborate with colleagues at CSU and UC schools to develop an articulated general education course in Geographic Information systems. This goal will be assessed by the successful articulation of this course with CSU and UC institutions.</p>	
<p>4. Are additional resources needed to accomplish departmental engagement goals? If yes, identify the resource, as well as the purpose and rationale for each resource.</p>		
Identified Resource	Purpose	If requesting funding, provide a rationale for how each request supports one or more college strategic initiative and/or supports student learning.
<p>10% release time for GIS program coordinator. Approximately \$8,500</p>	<p>Participate in program coordination, outreach, promotion and student mentorship activities</p>	<p>The GIS certificate program is a career technical workforce program. Providing release time dedicated to GIS program coordination, outreach, promotion and student mentorship activities will help the GIS program build a community of scholars through increased presence and interaction in professional organizations and activities which directly benefits student learning by increasing student access to up-to-date industry practices and trends. This release time will also help GIS students build a community of scholars by providing additional time for the program coordinator to be available work with students to develop academic plans and mentor their career development. Finally, release time would allow the GIS program to better integrate with K-12 and 4 year university curriculum by developing career transfer pathways.</p> <p>Release time will promote a collaborative decision making environment by allowing the program coordinator to engage a professional advisory board to review program curriculum. Release time will put access into action by allowing the program coordinator to conduct student internship site visits</p>

		<p>and seek out and apply for grant funding to support the program release time. Release time will also put access into action providing time to work with the professional advisory board to meet the ever changing needs of the professional community by revising the program curriculum on an annual basis.</p> <p>Release time will also build a community of scholars and increase the number of certificates awarded by allowing the time for the GIS program coordinator to better track GIS program students and follow up with them to insure that students who have completed the coursework follow through with applying for their certificate.</p> <p>Finally, release time will allow better operations planning by providing the time for the program coordinator to recruit, interview and evaluate the large group of part time instructors which are vital to the program's success.</p> <p>The GIS program has been partially funded through grant funding (\$450,000 NSF ATE award for 2005-2010), however, this funding did not specifically support program coordination, outreach, promotion and student mentoring. Furthermore, the department has been discouraged from continuing to seek out further grant funding because of a lack college and district level support for grant administration, budgeting and contract writing.</p>	

VI. Professional Development	
1. List a sampling of professional development activities that faculty and staff have engaged in during the last two years.	Professional development activities have included: participation in annual NSF Principal Investigator national conference, participation and presentation at professional GIS meetings including the ESRI User conference, the CalGIS conference and regular Bay Area Automated Mapping (BAAMA) educational sessions.
2. What opportunities does your department take to share professional development experiences with colleagues?	Due to the small department size, sharing generally takes place on an informal basis, through emails or copies of materials from the professional development opportunities.
3. In what ways have faculty shared, discussed, and used professional development activities to improve program effectiveness?	Professional conferences offer many opportunities to learn about new teaching materials and innovations in the discipline. Program faculty integrate these new materials into the curriculum to improve student learning and program effectiveness.
4. In what ways have staff shared, discussed, and used professional development activities to improve program effectiveness? What professional development needs do you have in the coming years?	This program does not have staff.
5. Are there unmet or upcoming professional development needs among faculty in this program? If yes, then please explain a proposed plan of action for addressing this need and any necessary resources.	The annual industry conferences (for the CWE GIS program) and the regional Geography educator's conference (California Geographical Society) are very important professional development opportunities for the Geography and GIS faculty. These conferences are generally funded through the faculty professional conference fund.
Summary of Planning Goals and Action Plans	
6. What are your goals with respect to professional development and how will those goals be measured?	The primary professional development goal of the Geography and GIS program is to continue to be highly engaged with local and regional professional organizations to continue to learn about innovations in the discipline and improve pedagogy. This will be measured by the continued support of the college for faculty to attend professional conferences and meetings.

VI. Professional Development		
7. Are additional resources needed to accomplish professional development goals? If yes, identify the resource, as well as the purpose and rationale for each resource.		
Identified Resource	Purpose	If requesting funding, provide a rationale for how each request supports one or more college strategic initiative and/or supports student learning.
\$1000 – through faculty conference funds	Participate in professional meetings and conferences	Participating in professional meetings and attending conferences promotes a community of scholars and access to action by allowing department faculty to engage with the wider academic community, learn about innovations in the field and new methods of effective pedagogy.

VII. Support Services		
<i>Support Services</i>		
Consider the support services needed by your program when reflecting over the following questions		Comments or explanations of barriers and solutions.
1. Is there adequate clerical or administrative support for this program?	Yes	
2. Are there sufficient college and departmental computer labs available to support this program?	Yes	The GIS program has an ideal home in the Krause Center for Innovation. The open computer labs and instructional computer classrooms are ideal for teaching discipline courses. It is crucial that the KCI open computer labs maintain their current hours to provide as much accessibility as possible to students. The GIS program uses expensive, proprietary software so students must complete their work in the KCI labs. Therefore, maintaining accessibility to these laboratories is essential to student success.
3. Are the library and media resources provided by the college sufficient to support up-to-date program instruction?	No	The current video/DVD library for Geography & GIS is out of date. Specifically, The most recent events in our current earth sciences video collection are 14 years old. Current earth science events such as Hurricane Katrina, the 2004 east Asian tsunami, major earthquakes and recent data on global warming need to be brought into the classroom. More recent events in the DVD collection will spark student interest in the material and increase student learning.
4. Are adequate services provided in compliance with program needs for meeting health and safety guidelines?	Yes	
5. Are the custodial services to this program in compliance with program needs for meeting health and safety guidelines?	Yes	

6. Are accommodations for students with disabilities adequate, including alternative media, testing, and tutorial?	Yes	
7. Are general tutorial services adequate?	No	The social science Geography courses require a significant amount of writing. Many students take Geography courses without having taken college level English coursework and are underprepared to write analytical essays. The college needs to continue to support general writing tutors in the tutorial center for students in all social science classes to utilize on a drop in basis.
8. Are academic counseling and advising services available and/or adequate to support students enrolled in the program?	Yes	
9. Do students have access to and can they effectively use appropriate information resources ?	Yes	
10. Specifically related to distance learning, do you have appropriate faculty support services and/or effective training for faculty teaching online?	Yes	
<i>Marketing & Outreach</i>		
11. What impact do you feel the college catalog , class schedule , and online schedule of classes have on marketing your program? Does the marketing accurately reflect your program, requirements, and services available?		The college catalog, class schedule and online schedule of classes do an adequate job of presenting and marketing the Geography and GIS program.
12. What impact does the college or departmental website have on marketing your program?		The primary marketing tool that the GIS program uses as outreach and to disseminate information about the program is its website. It is essential that the college continue to host websites for programs and allow faculty to revise and upload materials to these websites.
13. Is there any additional assistance from marketing that would benefit your program? If yes, explain.		The GIS program would benefit from the Marketing department producing brochures to help market the program at career fairs and outreach events.
14. If you were to collaborate with the Outreach staff, what activities would be beneficial in reaching new students?		
<i>Programs, clubs, organizations, and special activities for students</i>		

15. List the clubs that are designed specifically for students in this program. Describe their significant accomplishments.	
16. List any awards, honors, scholarships, or other notable accomplishments of students in this program.	
Summary of Planning Goals and Action Plans	
17. What are your goals with respect to support services and how will those goals be measured?	<p>The Geography and GIS program has three specific goals with regards to support services:</p> <ol style="list-style-type: none"> 1. Work with the library to acquire additional video/DVDs to update the Geography collection. This goal will be measured as being successful when additional Geography video/DVDs are added to the Geography collection. 2. Work with the tutorial center and the other Social Sciences faculty to support a general writing tutor for social sciences classes. This goal will be measured as being successful when the tutorial center supports a writing tutor for general social sciences classes. 3. Work with the marketing department to produce brochures for the GIS certificate program. This goal will be measured as successful when the marketing department produces GIS brochures.
18. Are additional resources needed to accomplish your support services goals? If yes, identify the resource, as well as the purpose and rationale for each resource.	
Identified Resource	<p>Purpose</p> <p>If requesting funding, provide a rationale for how each request supports one or more college strategic initiative and/or supports student learning.</p>
\$450	<p>Purchase 2-3 new DVDs to bring current innovations and developments in the field into the classroom.</p> <p>The purchase of 2-3 new DVDs to add to the library collection will help to build a community of scholars by bringing current earth science events such as Hurricane Katrina, the 2004 east Asian tsunami, major earthquakes and recent data on global warming into the classroom. The most recent events in our current earth sciences video collection are 14 years old. More recent events in the DVD collection will spark student interest in the material and increase student learning.</p>

<p>100 hours of writing tutors in the tutorial center at \$12 per hour</p>	<p>Funding for a writing tutor to support social sciences classes in the tutorial center</p>	<p>The social science Geography courses require a significant amount of writing. Many students take Geography courses without having taken college level English coursework and are underprepared to write analytical essays. Access to writing tutors for social sciences students will increase access to action by promoting student success in social science classes. The college needs to continue to support general writing tutors in the tutorial center for students in all social science classes to utilize on a drop in basis.</p>
<p>\$1000</p>	<p>Funding for Marketing brochures for the GIS Certificate program</p>	<p>GIS Certificate program brochures would help to market the GIS program at student outreach events. This would support the strategic initiative of access to action by increasing the number of degrees and certificates awarded.</p>
<p></p>	<p></p>	<p></p>
<p></p>	<p></p>	<p></p>

VIII. Career and Technical Education Programs	
<i>Response to Labor Market Demand</i>	
1. How does your program meet labor market demand? Cite specific examples and sources.	The US Department of Labor predicts that by 2016 the United States will need over 500,000 new professionals in the Geospatial Technology field (source: www.careervoyages.gov). Geographic Information Systems, and a strong foundation in spatial reasoning and geographic awareness are fundamental elements of the Geospatial Technology field
2. Given the number of enrollments projected for the program and necessary to support the program, are there enough openings locally to permit placement of the expected number of graduates?	Yes.
3. Has the job market been: declining slowly? steady? growing slowly? growing rapidly? newly emerging?	The GIS job market is growing rapidly. California is one of the fastest growing regions for GIS jobs. According to www.odinjobs.com there were an average of 400 job openings per month requiring GIS skills in the San Francisco bay area in 2008-09.
4. What is the average starting salary a student can expect to make after completing a certificate or degree?	The average starting salary for GIS professionals in the San Francisco bay area is \$78,000.
5. What is the projected average percentage of salary increase in 2 years? 4 years?	Data not available.
<i>Response to Program Credibility/Viability</i>	
6. If advanced degrees are typically needed for career advancement, will the courses required for this program transfer towards completion of the requirements for those degrees?	Yes. The typical GIS student at Foothill has a bachelors degree and is gaining GIS specific skills
7. If yes, are the courses in your program aligned and/or articulated with the four-year institutions.	Yes. The introductory GIS course work in the Foothill GIS Certificate program does transfer to the SJSU MA in Geography with a focus in GIS.

<p>8. Will this preparation permit students to stay current in their field? Does the program teach basic principles and theory, as well as applications? Is it current? Is it of sufficient rigor to assure the capacity to continue to follow the literature and learn new techniques? Is it of sufficient generality to allow for later shifts in career?</p>	<p>Yes. The Foothill GIS program not only teaches students how to use GIS, but throughout the program it heavily emphasizes avenues for students to connect with the professional community through local professional organizations and online resources.</p>
<p>9. Does this preparation provide a significant secondary expertise to primary careers? If yes, explain the purpose of the training – is it designed primarily or in part to meet the needs of those already employed for upward mobility, entrepreneurship, or other career upgrade?</p>	<p>The Foothill GIS Certificate program serves a dual purpose. A minority of students in the program have an AA or less, and are training for entry level technical positions.</p> <p>The majority of students in the program have bachelors degrees and are acquiring GIS skills as a secondary expertise to their primary careers. This additional training allows for career advancement and specialization.</p>
<p>10. Describe any pre-collegiate or noncredit pathways that exist to direct students into the program?</p>	<p>Currently there are no pre-collegiate pathways to the GIS program. However, Foothill is collaborating with Ohlone to develop a 2+2 articulation between local high schools and community college GIS coursework.</p>
<p>11. How does this program prepare students for competitive employment?</p>	<p>Foothill College GIS program graduates are prepared for competitive employment first, by their extensive knowledge and confidence using multiple GIS software products. Foothill's program is the only GIS program (of any level) in the San Francisco area that utilizes more than one software product in their courses. Approximately 2/3 of the local GIS employers use ArcGIS (ESRI) software, and approximately 1/3 of the local GIS employers use GeoMediaPro (Integrgraph) software. This versatility gives students a competitive edge. In addition, students who have earned the Certificate of Achievement have completed an internship with a local company, and gained real world experiences and references. Finally, all program graduates have a comprehensive portfolio of work that they can share at job interviews.</p>
<p><i>Advisory Board</i></p>	

12. List your advisory board members. The list of advisory board members should include their job titles as well as their affiliations, and an accompanying explanation should make clear that the professionals on this committee represent those within the industry who would hire graduates of a proposed CTE program.	No advisory board at the present time. See funding request.
13. List the dates and number of members attending of your most recent advisory board meetings.	See above.
14. What have been the major outcomes of your advisory board meetings? Of those outcomes, which have been acted upon, and what is your plan of action with regard to other outcomes discussed?	See above.
<i>Program Accreditation</i>	
15. Is this program subject to approval by specialized state, regional, or national accrediting agencies?	No.
16. What is the program's accreditation status?	N/A
17. Indicate recommendations of the most recent accreditation evaluation of the program and corrective actions taken or planned. Most recent accreditation report and all additional pertinent documentation and explanations should be available on site for consultant review.	N/A
18. Provide a brief analysis of student performance on licensure or board exams on first attempt.	N/A
19. What indicators does your program use to determine success of our students after completion?	Currently, the program evaluates success based on anecdotal data of students who have achieved employment in GIS. However, it would greatly benefit the program to have a more formal tracking system in place. This could be done by providing release time for a program advisor to compile and maintain surveys and alumni contact information.
20. Does your program survey employers for satisfaction of our students who have earned a degree/certificate? Provide brief analysis of employer satisfaction.	No. However, it would greatly benefit the program to have a more formal tracking system in place. This could be done by providing release time for a program advisor to compile and maintain surveys and alumni contact information.

<p>21. Does the department’s analysis of labor market demand, advisory board recommendations, and accreditation status (if applicable) reflect the data?</p>	<p>N/A See above.</p>	
<p>22. Have any/all issues been identified in the program plan and are they adequately addressed with appropriate action plans? Explain.</p>	<p>Yes.</p>	
<p>Summary of Planning Goals and Action Plans</p>		
<p>23. What are your 4-year goals based on areas identified in the Career and Technical Education section of the program plan and how will those goals be measured?</p>		
<p>24. Are additional resources needed to accomplish career and technical education goals? If yes, identify the resource, as well as the purpose and rationale for each resource.</p>		
<p>Identified Resource</p>	<p>Purpose</p>	<p>If requesting funding, provide a rationale for how each request supports one or more college strategic initiative and/or supports student learning.</p>

IX. Resource Planning: Personnel, Technology, Facilities, and Budget

Faculty

<p>1. How does your PT/FT ratio impact the program?</p>	<p>The Geography and GIS program has 2/3 part time FTEF and 1/3 FTEF. The Geography and GIS program could make a significant additional impact on student support and learning by adding a second full time faculty member in the coming years.</p> <p>The GIS program offers its courses entirely in the evening to meet the needs of the CTE program students. It therefore makes it difficult to staff both the day and night time classes with the only full time faculty member. The program would like to increase the number of face to face daytime Geography sections offered to increase the visibility of the program and student success. It is very difficult to recruit qualified part time faculty to teach on campus classes in GIS and in Geography, so having a second full time faculty member would increase the program continuity and better serve students and meet program objectives.</p>
<p>2. What staffing needs do you anticipate over the next four years. (Consider: retirements, PDL, reassigned time, turnover, growth or reduction of the program)</p>	<p>It is a long term goal of the Geography and GIS program to increase the number of day time face to face sections as well as the continuity of the staffing. The program would like to add a second full time faculty member within the next four years.</p> <p>Currently, the program requests 10% release time to more effectively administer the GIS Certificate program, recruit and advise students and work with a professional advisory board.</p>

Classified Staff

<p>3. What staffing needs do you anticipate over the next four years. (Consider: retirements, PDL, reassigned time, turnover, growth or reduction of the program)</p>	<p>None.</p>
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Technology and Equipment

4. Are the existing equipment and supplies adequate for meeting the needs of the instructional program?	Yes. It is critical that the funding for GIS software continue as this software is required to teach GIS programs. In addition, it is important that the computer classrooms and labs (4000 building) continue to have current computers to support the GIS program.	
5. Do you have adequate resources to support ADA needs in your physical and/or online courses and classrooms?	Yes.	
6. Is the technology used in your distance education courses appropriate to the nature and objectives of your courses? Please explain how it is appropriate or what changes are underway to make it appropriate. Explain.	Yes, the software and support is appropriate. The ETUDES system is a versatile course delivery software that supports both distance education as well as web-enhanced traditional classrooms.	
<i>Technology & Equipment Definitions</i>		
<ul style="list-style-type: none"> • Non-instructional Equipment and Supplies: includes equipment for “office use” that is non-instructional and that is not used in a lab or classroom – it includes non-programmatic equipment for individual instructors and staff, such as a desktop computer for office use. Desktop technology (computers, printers, scanners, faxes) and software requests are processed through your Dean or Director. 		
<ul style="list-style-type: none"> • Instructional Equipment and Supplies: includes technology, software, and supplies used in courses or labs, including occupational program equipment. Instructional program equipment requests are prioritized by the department and then by the Dean or Director. 		
<ul style="list-style-type: none"> • Durable Equipment and Furniture: includes non-instructional, non-technology equipment (chairs, tables, filing cabinets, vehicles, etc.) necessary to improve the operational functioning of the program/department. 		
<ul style="list-style-type: none"> • Note: It is recommended that divisions perform and maintain an inventory of all their technology and equipment. 		
<i>Facilities</i>		
7. Are your facilities accessible to students with disabilities?	Yes.	
8. List needs for upgrades for existing spaces	None.	
9. List any new spaces that are needed	None.	
10. Identify any long-term maintenance needs.	None.	
11. Are available general use facilities, such as classrooms, laboratories, and faculty office/work space adequate to support the program? Please explain.	Yes.	
12. Are work orders, repairs, and support from district maintenance adequate and timely? Please explain.	Yes.	
<i>Budget</i>		

<p>13. Are the A-budget and B-budget allocations sufficient to meet student needs in your department?</p>	<p>No, the A & B budget are not sufficient to meet student needs. It is a long term goal of the Geography and GIS program to increase the number of day time face to face sections as well as the continuity of the staffing. The program would like to add a second full time faculty member within the next four years.</p> <p>Currently, the program requests 10% release time to more effectively administer the GIS Certificate program, recruit and advise students and work with a professional advisory board.</p>	
<p>14. Describe areas where your budget may be inadequate to fulfill program goals and mission.</p>	<p>The budget needs to increase to support student learning and success by funding faculty release time to administer the GIS CTE program. In addition, the GIS program needs to have funding for the GIS software that is required to teach GIS courses. The program also needs funding to host an advisory board meeting. Finally, the Geography program needs to purchase new DVDs to maintain program currency.</p>	
<p>15. Are there ways to use existing funds differently within your department to meet changing needs?</p>	<p>Currently the department has no funds specifically allocated to it.</p>	
<p>Summary of Planning Goals and Action Plans</p>		
<p>16. What are your goals with respect to resource planning and how will those goals be measured?</p>	<p>The goals with respect to resource planning are to attain the funds requested. These will be measured by the college funding the requests.</p>	
<p>17. Are additional resources needed to accomplish your resource planning goals? If yes, identify the resource, as well as the purpose and rationale for each resource.</p>		
<p>Identified Resource</p>	<p>Purpose</p>	<p>If requesting funding, provide a rationale for how each request supports one or more college strategic initiative and/or supports student learning.</p>

X. Final Summary of Goals, Commitments to Action, and Resource Requests

1. Upon completion of this program plan, provide a comprehensive summary of your goals and action plans for the next 4 years.

The Geography and GIS department has five main goals for the next four years. The first goal is to increase outreach for the GIS program and align curriculum with workforce and job needs as well as to build up K-16 curricular partnerships and 4 year university articulation in GIS. The action plan to achieve this goal is to attain 10% release time for the Geography and GIS program chair.

The second goal of the department is to convene a professional advisory board for the GIS program. To achieve this goal the department needs \$200 to provide lunch to advisory board members. *If* the 10% release time for the program chair is not granted, the department needs \$500 to organize and convene the GIS program advisory board.

The third goal is to increase student learning and retention with a focus on online and innovative modular hybrid delivery methods. The action plan to achieve this goal is to implement innovative modular hybrid course delivery methods and examine data on retention and success rates.

The fourth goal for the department is to maintain GIS program currency. The action plan to achieve this goal is to acquire the requested funds to pay for the software licenses for ArcGIS and Idrisi software.

The final goal for the department is to maintain the currency of materials presented in Geography classes. The action plan to achieve this goal is to acquire new DVDs for the program.

2. Final Resource Request Summary: **When the program planning and review form is online – the section below will automatically fill in with your responses from each section.**

Note: If you are requesting resources this year, these items have to be included in your current program review. If you want the college to understand your full range of need, then list every current and upcoming resource need in each section above.

Resource	Purpose	Rationale	Estimated Cost
10% release time for GIS	Participate in program	The GIS certificate program is a career technical workforce program.	

<p>program coordinator. Approximately \$8,500</p>	<p>coordination, outreach, promotion and student mentorship activities</p>	<p>Providing release time dedicated to GIS program coordination, outreach, promotion and student mentorship activities will help the GIS program build a community of scholars through increased presence and interaction in professional organizations and activities which directly benefits student learning by increasing student access to up-to-date industry practices and trends. This release time will also help GIS students build a community of scholars by providing additional time for the program coordinator to be available work with students to develop academic plans and mentor their career development. Finally, release time would allow the GIS program to better integrate with K-12 and 4 year university curriculum by developing career transfer pathways.</p> <p>Release time will promote a collaborative decision making environment by allowing the program coordinator to engage a professional advisory board to review program curriculum. Release time will put access into action by allowing the program coordinator to conduct student internship site visits and seek out and apply for grant funding to support the program release time. Release time will also put access into action providing time to work with the professional advisory board to meet the ever changing needs of the professional community by revising the program curriculum on an annual basis.</p> <p>Release time will also build a community of scholars and increase the number of certificates awarded by allowing the time for the GIS program coordinator to better track GIS program students and follow up with them to insure that students who have completed the coursework follow through with applying for their certificate.</p> <p>Finally, release time will allow better operations planning by providing the time for the program coordinator to recruit, interview and evaluate the large group of part time instructors which are vital to the program's success.</p>
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		<p>The GIS program has been partially funded through grant funding (\$450,000 NSF ATE award for 2005-2010), however, this funding did not specifically support program coordination, outreach, promotion and student mentoring. Furthermore, the department has been discouraged from continuing to seek out further grant funding because of a lack college and district level support for grant administration, budgeting and contract writing.</p>
\$200	Hold annual advisory board meetings. Provide lunch to advisory board members	<p>An annual advisory board meeting is vital to maintain program currency as well as to maintain the presence of our program within the regional professional community.</p> <p>This meets the strategic goal of operations planning by providing an opportunity to annually review and update program curriculum. By engaging GIS professionals in the curriculum development process, this advisory board meeting will promote a collaborative decision making environment. An advisory board also builds a community of scholars by bringing a group of GIS professionals together to evaluate the certificate program curriculum and discuss internship and job opportunities for program graduates.</p>
\$500	Stipend for organizing and convening GIS program advisory board	<p>An advisory board is vital to maintain the currency and program presence in the community.</p> <p>IF faculty release time for the GIS program coordinator <i>cannot</i> be granted, it is requested that a stipend be funded to pay an adjunct faculty member to organized and convene the GIS program advisory board. The GIS program advisory board meets the strategic goal of operations planning by providing an opportunity to annually review and update program curriculum. By engaging GIS professionals in the curriculum development process, this advisory board meeting will promote a collaborative decision making environment. An advisory board also builds a community of scholars by bringing a group of GIS professionals together to evaluate the certificate program curriculum and discuss internship and job opportunities for program graduates.</p>

\$2,700	Site license for ESRI ArcGIS software and IDRISI – <i>required</i> for teaching the GIS certificate program	ESRI ArcGIS software is the industry standard GIS software. In order for Foothill to continue to offer an extremely high quality GIS education to our students, we must utilize the industry standard software. Idrisi software is a low cost remote sensing software that is required for teaching the Remote Sensing class for the GIS certificate program. This puts access into action by aligning industry needs with curriculum. Further, utilizing the ArcGIS software helps to build a community of scholars by increasing purposeful student learning (aligned with workforce needs) and increases the number of certificates awarded by making the Foothill program attractive to prospective students.
\$450	Purchase 2-3 new DVDs to bring current innovations and developments in the field into the classroom.	The purchase of 2-3 new DVDs to add to the library collection will help to build a community of scholars by bringing current earth science events such as Hurricane Katrina, the 2004 east Asian tsunami, major earthquakes and recent data on global warming into the classroom. The most recent events in our current earth sciences video collection are 14 years old. More recent events in the DVD collection will spark student interest in the material and increase student learning.
\$1000 – through faculty conference funds	Participate in professional meetings and conferences	Participating in professional meetings and attending conferences promotes a community of scholars and access to action by allowing department faculty to engage with the wider academic community, learn about innovations in the field and new methods of effective pedagogy.
100 hours of writing tutors in the tutorial center at \$12 per hour	Funding for a writing tutor to support social sciences classes in the tutorial center	The social science Geography courses require a significant amount of writing. Many students take Geography courses without having taken college level English coursework and are underprepared to write analytical essays. Access to writing tutors for social sciences students will increase access to action by promoting student success in social science classes. The college needs to continue to support general writing tutors in the tutorial center for students in all social science classes to utilize on a drop in basis.
\$1000	Funding for Marketing brochures for the GIS Certificate program	GIS Certificate program brochures would help to market the GIS program at student outreach events. This would support the strategic initiative of access to action by increasing the number of degrees and certificates awarded.

<i>Supervising Administrator Signature</i>	<i>Completion Date</i>