Community College of Philadelphia

The Path to Possibilities™

STUDENT OUTCOMES COMMITTEE OF THE BOARD OF TRUSTEES

Thursday, June 5, 2014
1:30 p.m.
Room M2-34

AGENDA

(1)   1:30 p.m.   Executive Session

(2)   Public Session

1:45 p.m.	(a) Approval of the Minutes of May 1, 2014	(A)
1:50 p.m.	(b) Geographic Information Systems (GIS) Program Audit	(A)
2:30 p.m.	(c) Institutional Research Benchmark Data	(I)

STUDENT OUTCOMES COMMITTEE OF THE
BOARD OF TRUSTEES

MINUTES
Thursday, May 1, 2014
1:30 p.m. – M2-34

Presiding: Ms. Stacy Holland

Present: Mr. Mark Edwards, Dr. Judith Gay, Dr. Samuel Hirsch,
Dr. Sharon Thompson, Dr. Judith Renyi, Rep. James Roebuck.

Guests: Mr. David Greene, Mr. Rogers Glispy, Dr. Ronald Jackson

(1)   Executive Session

There were no items for the executive session.

(2)   Public Session

(a) Approval of Minutes of April 3, 2014

The minutes were accepted unanimously.

(b) 2014-2015 Student Activities, Athletics and Commencement Budget

Dr. Hirsch clarified that he brings this budget to the Student Outcomes committee
annually. Once the Committee approves, it becomes part of the overall budget request.
This has been a successful and busy year. Highlights include: The College is now a part
of the National Junior College Athletic Association (NJCAA). A second major focus for
the year has been Title IX compliance. The probation year for NJCAA has been
completed. All athletic teams did very well. Men's' soccer and women's' volleyball are
still independent. Next year the College will be eligible for post-season play. Changes
were made to the athletics program for NJCAA eligibility. Two hours of study hall is
now mandatory; tutoring is available, particularly targeted on gate-keeper courses. The
Early Alert system is used to help track athletes academic progress. They must maintain a
2.0 GPA and pass 12 credits each semester. If our athletes do not maintain a 3.0 GPA,
study hall is mandatory. Part-time students can participate in intramural sports,
racquetball as well as health and wellness activities.

Dr. Jackson went into detail about Title IX compliance. The College completed an
internal audit. Salaries for coaches and assistant coaches are now standardized. The
NJCAA guidelines were used to help set the standard. It was clarified that coaches are
contracted, not College employees. The College has developed a transgender student
policy. The College strives for equal gender representation in all sports. Currently, there
are 45 male athletes and 22 females. Dr. Gay pointed out that Title IX responsibility goes
beyond athletics; and recommended a presentation to the Board on this topic. NJCAA is

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equivalent to the NCAA for community colleges. The College is in Division III, Region 19, Eastern Pennsylvania Conference.

Mr. Glispy discussed Athletics recruiting efforts. High school students come to the campus, staff speak at athletic assemblies and coaches recruit as well. Students from neighboring states also come to the College. A major focus is to prepare our athletes for transfer. The majority do transfer, but may or may not participate in athletics at their transfer school. Athletes age is 18 -28. The College can provide primary health care coverage if the student does not have coverage on their own. Last year, the College was the primary coverage for all athletes, but this is anticipated to change with the Affordable Care Act. Students were encouraged to sign up for health care through Single Stop. Approximately 350 College students attended health care assistance workshops, and approximately 30% enrolled.

Mr. Greene provided more detail on clubs and organizations. There are 43 active clubs, with 1200-1700 students participating. 300 programs (on campus events) were offered this year. A five student programming board was created. This board created 125 programs. The College has a three tier student leadership program – emerging leaders, blue leaders and gold leaders. There are 15 students who were gold leaders in service. Phi Theta Kappa had 312 inductees. The Student Government Association has been active. They sponsored ten additional programs this year. They co-sponsored the Alternative Spring Break in which 40 students, faculty and staff participated. Examples of other initiatives in Student Life include new Student Welcome, the Black and Gold bash (3,000 participants), Spring Fling, Hispanic Heritage Month Breakfast, International Festival, Talent show and the Student Vanguard. The average GPA of student leaders is 3.09. For student ambassadors the average is 3.30 GPA and for Phi Theta Kappa, 3.09. Clubs are initiated by students. Examples include the Green Cycle Alliance, Veterans, Anime, Black Women Engineers, and Business Honors. The Student Programming Board has done programs with Career Services on job seeking. The programs were held in the evening. Dr. Renyi reminded the group of the importance of focusing on the needs of the adult and working student. Ms. Holland suggested we find out what programming these students are interested in. Dr. Jackson responded that this has been done. Students can participate virtually through org.sync (on My Colonial Community). Since January, there have been 18,000 visits to the site. 2,000 have remained active. Students can track their service hours using this feature which then is documented on a co-curricular transcript. It will be available as a phone app in Fall. The Board discussed the importance of experiences outside the classroom.

Dr. Jackson reviewed the details of the budget. Budget increases are minimal and there is no recommendation for an increase for the general college fee.

Action: The Student Outcomes Committee recommends that the Board of Trustees accept the budget as presented.

(c) Complete with 15

Dr. Hirsch presented this new scholarship initiative which will launch this Fall. The goal is to accelerate degree completion. The program was designed after careful data analysis and review of institutional research. The program will increase the number of students taking 15 credits who have the ability but are not currently doing so. The Committee reviewed the details of the scholarship eligibility. It is hoped that we will have 100 students taking advantage of the opportunity during Fall 2014, but we can accommodate more if they apply and are eligible. This program will decrease time to degree by an entire semester. There is little to no cost to the College. Dr. Hirsch emphasized that we will map out a path for students to follow, and the scholarship will only cover courses needed for the degree.

The meeting was adjourned at 2:45 p.m.

(3) <u>**Next Meeting**</u>

The next meeting of the Student Outcomes Committee of the Board is scheduled for June 5, 2014 at 1:30 p.m. in conference room M2-34.

<u>**Attachments:**</u>

Student Outcomes Committee Minutes, April 3, 2014
Budget Assumptions and Rationale for the Student Activities, Athletics, and
Commencement for FY15 Budget
2014-15 Student Activities, Athletics, and Commencement Budget
Complete With 15 Initiative

Community College of Philadelphia

Academic Program Audit:

Geographic Information Systems
AAS, Academic Certificate, Proficiency Certificate

Authors:
John V Moore III
Deirdre Garrity Benjamin
Marge Niven

Date: May, 2014

I. Executive Summary
At CCP, Geographic Information Systems is a constellation of three programs, an Associate's Degree, an Academic Certificate, and a Proficiency Certificate. The program, when it was initiated, was ahead of its time; and to this day, there are a limited number of programs regionally that support this discipline. The program, here, however, has limited enrollment (averaging less than 10 students combined) and may no longer provide the educational experiences that best support learners.

The program has many strong assets, though, that have demonstrated a capacity for constructive change. The program director has constantly striven to keep the degrees and courses up to date, both in terms of content and delivery, with a mind toward student and industry needs. The reputation of the program is strong as well—students from nearby colleges enroll in courses here to supplement the degrees from their home institutions. Courses have been pruned when they are no longer appropriate, offerings have expanded online, and there is an effort to provide software options that are free to students. The program director, too, is the driving force behind a highly engaged advisory council and part time faculty group. Finally, the program has sought to provide students with additional extracurricular learning activities—engaging them in activities such as tutoring, presenting at conferences, conducting research, and partnering with GIS practitioners. This involvement has extended into alumni as well, who have stayed part of the program even after leaving the program.

Students in the program are performing well as evidenced by SLO assessment and indirect data on course completion and GPA, although the small numbers make comparison to the College or Division difficult. Courses have a tendency to run with lower enrollments; additional course planning may be a necessary part of ongoing changes to the program.

It is recommended that the program close the AAS and Academic Certificate to allow program resources to be focused on proficiency certificates, which appear to be more in line with the future of the field.

II. Program
Geographic Information Systems is a computerized spatial database management system for capture, storage, retrieval, analysis, and display of geographic information. Along with general education, the GIS AAS degree courses provide students with the knowledge and practical skills necessary to develop and manage geospatial projects and to interpret and implement GIS as a decision support tool.

The Geographic Information Systems (GIS) program teaches students how to turn maps into super sources of information. They learn how to understand the technical process behind GIS, use basic GIS tools, develop a portfolio of GIS work, create and manage a GIS database, and design and complete GIS projects. Students receive hands-on training utilizing up-to-date computer hardware and software, and learn theories and skills to manage GIS projects.

A. Brief History of the Program

In 2004, faculty conducted a feasibility study for a GIS degree program. They noted that GIS skills were in demand at a number of government agencies, urban and regional planning commissions, highway departments, oil and gas companies, health agencies, architecture firms, and sanitation departments. The mean salary for positions with these skills was about 50% higher than the mean for all jobs in Philadelphia. Burlington County Community College and Rowan College had recently started GIS programs (the only other programs in a 40 mile radius of the city), meaning that CCP would be an early provider of the program. It was recommended that the College develop a GIS program.

The AAS and Academic Certificate programs were proposed in 2006; the proficiency certificate was added in 2010. The proposal documents noted that nationally, GIS was a growing and rapidly evolving field. The hope was to tap into a market of individuals with degrees already working in the fields mentioned above who needed to update their skill sets to meet the growing technological advances in GIS. The program also hoped to attract recent high school graduates and other individuals who had not previously enrolled in postsecondary education who would be interested in entry level positions that required GIS skills.

The nature of the field has encouraged the program to regularly update their course offerings to meet the fast-paced technological developments in software, hardware, and applications (See D, below).

B1. Curriculum Sequence (Degree)

Course Number and Name	Pre- or Corequisites	Credits	Gen Ed Req.
First Semester			
GIS 101 - Introduction to GIS		3	
GEOG 101 -Intro to Physical Geography or GEOG 103 - Intro to Human Geography		3	Social Science
ENGL 101 - English Composition I		3	ENGL 101
CIS 103 - Applied Computer Technology		3	Tech Comp
MATH 118 - Intermediate Algebra or higher		3	Mathematics
Second Semester			
GIS 102 - Intermediate GIS	GIS 101	3	
GIS 104 - Principles of Computer Cartography & Visualization	GIS 101	3	
GEOG 101 - Intro to Physical Geography or GEOG 103 - Intro to Human Geography or GEOG 180 - Urban Geography or GEOG 222 - World Regional Geography	GEOG 101 or GEOG 103	3	
ENGL 102 - The Research Paper	ENGL 102 (C or better)	3	Info Lit
Directed Elective*		3	
Third Semester			
GIS 201 - Advanced Geospatial Applications	GIS 102	3	
GEOG 101 - Intro to Physical Geography or GEOG 103 - Intro to Human Geography or GEOG 180 - Urban Geography or GEOG 222 - World Regional Geography	GEOG 101 or GEOG 103	3	
EASC 111 - Environmental Conservation		3	Nat. Science
Directed Elective*		3	
General Elective		3	
Fourth Semester			
GIS 203 - Remote Sensing and Global Positioning Technologies	GIS 101, Math 118	3	
GIS 206 - Introduction to Web GIS	GIS 101	3	
Humanities Elective		3	Humanities
Directed Elective*		3	
General Elective		3	
Total Credits		30	

*ADC 101, ADC 103, ADC 163, ADC 186, ADC 273, ART 105, ART 125, ART 150, ART 151, CIS 105, CIS 106, CIS 130, CIS 150, CIS 205, CIS 230, CSCI 111, CSCI 112, MATH 121, MATH 137, MATH 161, MATH 162, MATH 163, MATH 251

B2. Curriculum Sequence (Academic Certificate)

Course Number and Name	Prerequisites	Credits
Summer Session		
CIS 103 – Applied Computer Technology		3
GIS 101 – Introduction to Geographic Information Systems		3
First Semester		
ENGL 101 – English Composition I		3
MATH 118 - Intermediate Algebra or higher		3
GIS 102 - Intermediate Geographic Information Systems	GIS 101	3
GIS 104 - Principles of Computer Cartography and Visualization	GIS 101	3
Second Semester		
ENGL 102 – The Research Paper	ENGL 101 ("C" or better)	3
GIS 203 - Remote Sensing and Global Positioning Technologies	GIS 101, MATH 118	3
GIS 201 - Advanced GIS Systems	GIS 102	3
Summer Or Third Semester		
GIS 206 - Introduction to Web GIS	GIS 201	3
Total		30

B3. Curriculum Sequence (Proficiency Certificate)

Course #	Course Title	Pre- and Corequisites	Credits
Select 3 of the following courses			
GIS 101	Introduction to Geographic Information Systems		3
GIS 102	Intermediate Geographic Information Systems	GIS 101	3
GIS 104	Principles of Computer Cartography and Visualization	GIS 101	3
GIS 201	Advance Geospatial Applications	GIS 102	3
GIS 203	Remote Sensing and Global Positioning Technologies	GIS 101	3
GIS 206	Introduction to Web GIS	GIS 201	3
Total			9

C. Curriculum Map

Courses / Student Learning Outcomes	GIS 101 Introduction to GIS	GIS 102 Intermediate GIS	GIS 104 Principles of Computer Cartography and Visualization	GIS 201 Advanced Geospatial Applications	GIS 203 Remote Sensing and Global Positioning Systems
Identify how geospatial technologies can be used with various organizations and applications	Introduced	Intermediate		Mastery	Mastery
Identify necessary equipment (software and hardware) and data needed to complete projects.	Introduced	Intermediate		Mastery	Mastery
Manage geodatabases (creating, obtaining and updating geospatial data resources)	Introduced	Intermediate	Intermediate	Mastery	Mastery
Effectively use various geospatial technologies	Introduced	Intermediate	Intermediate	Mastery	Mastery
Conduct Geospatial analyses (geocoding, buffer, clip, distribution, correlations and networking)	Introduced	Intermediate		Mastery	Mastery
Work productively both independently and in teams on geospatial projects	Introduced	Intermediate	Mastery	Mastery	Mastery
Design cartographic representations (maps) of geospatial analyses, draw conclusions and prepare reports and presentations that convey geospatial research, applications and conclusions	Introduced	Intermediate	Mastery	Mastery	Mastery

D. Revisions to the Curriculum

In 2010, the AAS program was revised to better meet changes in the profession and the educational needs of students. Three redundant courses were eliminated (Applications in GIS—GIS 105, Problem Solving with GIS—GIS 202, and Database Development for GIS—GIS 205). Another course (Spatial Analysis and Mapping in GIS—GIS 103) was eliminated as it was seen by the Advisory Committee as more appropriate for a graduate level. Two other courses (Applications in Global Positioning Systems Technology—GIS 203 and Remote Sensing—GIS 204) were combined into one. Additional directed electives were added and the computer science requirement was changed from an introductory course to a more advanced one.

In 2013, two additional changes were made to the AAS program in consultation with the Advisory Committee. The first was the addition of a course for web GIS design, the second allows for more flexibility among directed electives. An additional change was made to the certificate program: a web GIS course replaced a traditional geography course. This course was also added to the list of potential courses for the proficiency certificates.

The program's director and faculty have also made a number of course updates to keep the program current with a rapidly changing field (GIS 101, GIS 201, and GIS 102 have either been recently updated or are currently under revision).

E. Future directions for the field/program

GIS has evolved, over the past few years, into an important component of fields such as urban planning, history, or computer science. Rather than existing solely as a separate entity, it has evolved into a discipline that supports a number of career fields.

The discipline is also heavily dependent upon technology; advances such as cloud storage and improved tracking systems are quickly integrated into the field. It is critical for faculty and students to stay relevant.

III. Profile of Faculty

A. Program Faculty

Faculty Member	Position	Courses Taught
Deirdre Garrity-Benjamin MS, Environmental Policy	Assistant Professor, Curriculum Coordinator	Geography
Seth Hackman MBA; Certificate, Geomatics	Adjunct Instructor	Introduction to GIS
Paul Caris PhD, Geography	Adjunct Instructor	Introduction to GIS; Introduction to Physical Geography
Geri Miller MA, Geography	Adjunct Instructor	Intermediate GIS; Computer Cartography and Visualization
Luis Oliveri MS, Agricultural Science	Adjunct Instructor	Remote Sensing and Global Positioning Technologies

B. Faculty Engagement

The one full time faculty member in the program is very active in the discipline, the division, and the College generally. She has cultivated a culture of engagement among the part time faculty members.

Program faculty supported an active student organization, which has worked with the PA Bar Association, won awards from the NJ Department of Environmental Protection Mapping contest, presented at Law and Society Week at CCP, and participated in several volunteer activities. Students also regularly assist faculty and administrators with research and tutor other students. The program regularly hosts programs and workshops for current and future students, alumni, and local professionals. As the program accumulated graduates, the GIS Club has evolved into a GIS Professionals Group made up of current students as well as faculty alumni.

IV. Program Characteristics

    A. Student Profile

Student numbers for the GIS program are small, but growing; averaging just over 7 students in the past five years, but growing from four to nine in that time (Table 1). The small numbers make comparisons to the division or College challenging. However, at present, the program enrolls a student population that is more likely to be white, older, and less in need of developmental coursework (Table 2). Course enrollment patterns run far below those of the College or the division, averaging about 50% (Table 3).

Table 1. Headcounts

		Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012	5 Year Average	5 Year Change
GIS Degree	Headcount	4	8	7	9	9	7.4	350%
	FTE Headcount	3	5	6	7	7	5.6	250%
GIS Certificate	Headcount	0	1	2	0	4	1.4	--
	FTE Headcount	0	0	1	0	1	0.4	--
GIS Proficiency Certificate	Headcount	0	0	0	0	2	0.4	--
	FTE Headcount	0	0	0	0	1	0.2	--
Liberal Studies	Headcount	8,442	8,892	8,711	8,717	8,217	8595.8	-5.39%
	FTE Headcount	5,758	6,313	6,175	6,137	5,747	6026	-3.18%
College	Headcount	17,327	19,047	19,502	19,752	18,956	18916.8	9.36%
	FTE Headcount	11,883	13,362	13,696	13,682	13,111	13146.8	10.35%

Table 2. Demographics

Demographics: Running 5 Year Average

	GIS	GIS Cert	GIS Prof Cert	Liberal Studies	College
Female	12.6%	59.5%	50.0%	63.5%	65.2%
Male	87.4%	40.5%	50.0%	35.7%	34.1%
Unknown	0.0%	0.0%	0.0%	0.8%	0.7%
Native American	0.0%	0.0%	0.0%	0.5%	0.5%
Asian	7%	0.0%	0.0%	5.4%	7.2%
African American	35.2%	42.9%	50.0%	48.5%	48.2%
Latino/a	8.1%	0.0%	0.0%	6.5%	6.1%
White	36.5%	36.5%	25.0%	25.9%	25.2%
Other	10.4%	0.0%	0.0%	3.8%	3.8%
Unknown	3.1%	23.8%	25.0%	9.4%	9.1%
16 - 21	29.1%	1.7%	0.0%	32.6%	32.3%
22 - 29	27.8%	40.8%	25.0%	33.6%	36.1%
30 - 39	34.1%	20.0%	25.0%	15.6%	17.0%
40 +	9.0%	5.8%	50.0%	16.5%	13.4%
Unknown	0.0%	1.7%	0.0%	1.7%	1.2%
Full Time	37.7%	0.0%	0.0%	33.7%	31.4%
Part Time	62.3%	100.0%	100.0%	66.3%	68.6%
All Developmental	13.3%	16.7%	0.0%	29.1%	27.6%
Some Developmental	28.3%	0.0%	0.0%	45.7%	43.8%
College Ready	58.3%	83.3%	100.0%	25.1%	28.6%

Table 3. Course Enrollments

		Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall Average	Spring Average
Program	Courses	2	1	2	2	4	4	4	4	3	3	3	2.8
	Avg Enrollment	13	10.5	11	11	13	11.8	11	14	9.7	13.3	11.5	12.1
	Percent Filled	43%	44%	46%	45%	54%	49%	46%	58%	40%	56%	46%	50%
Division	Courses	1441	1520	1551	1674	1711	1721	1581	1577	1474	1465	1552	1591
	Avg Enrollment	20.2	20.6	21.5	21.3	20.9	21.3	20.4	20.2	21.4	21.3	20.9	20.9
	Percent Filled	81%	82%	86%	86%	83%	84%	81%	81%	84%	82%	83%	83%
College	Courses	2689	2822	2870	3090	2915	2987	2996	2918	2719	2716	2837.8	2906.6
	Avg Enrollment	21.2	21.2	22.3	22	21.9	21.6	21.9	22.2	22.3	22.1	21.9	21.8
	Percent Filled	83%	83%	87%	86%	84%	83%	85%	85%	86%	84%	85%	84%

B. Student Outcomes

Because of the newness of the program and the small number of students, the programs' success data are limited; there has been only one graduate each from the program and the certificate. Despite this, numbers for retention and GPA generally mirror that of the rest of the College. When examining transfer rates (Figure 1), it is important to note that the AAS degree is not designed for transfer, but rather for direct entry into the workforce. Recent changes in Temple University's regulations mean that the program's students are no longer guaranteed dual admissions there.

Table 4. Outcomes Data: 5 Year Averages

		GIS Degree	GIS Cert	GIS Prof Cert	Division	College
Standing	Good Standing	86.5%	97.6%	100.0%	83.1%	84.1%
	Probation	13.5%	2.4%	0.0%	15.0%	13.2%
	Dropped	0.0%	0.0%	0.0%	2.9%	2.8%
Fall-Spring Retention	Returned/Same	77.6%	100.0%	--	64.1%	65.6%
	Returned/Different	7.6%	0.0%	--	6.5%	5.2%
	Graduated	2.5%	0.0%	--	2.3%	2.0%
	Did Not Return	12.3%	0.0%	--	27.1%	27.2%
Fall-Fall Retention	Returned/Same	38.4%	0.0%	--	35.7%	36.5%
	Returned/Different	2.5%	0.0%	--	9.7%	8.5%
	Graduated	9.4%	0.0%	--	8.1%	8.2%
	Did Not Return	49.6%	100.0%	--	46.5%	46.8%
Success at Departure	Graduated	0.0%	0.0%	--	9.8%	9.9%
	Long Term Success	41.7%	50.0%	--	36.9%	35.8%
	Short Term Success	37.5%	50.0%	--	15.6%	17.7%
	Unsuccessful	20.8%	0.0%	--	37.7%	36.6%
Course Outcomes	Course Completion	85.4%	94.3%	100.0%	87.9%	88.4%
	GPA	2.96	3.54	3.50	2.66	2.65

Table 5. Degrees Awarded

	2008	2009	2010	2011	2012
GIS Degree	0	0	0	0	1
GIS Certificate	0	0	1	0	1
GIS Prof Cert	0	0	7	0	5
Liberal Studies	1081	1159	956	1027	1088
College	1985	2127	1908	1966	2132

Figure 1. Transfer by Departure Status[1]
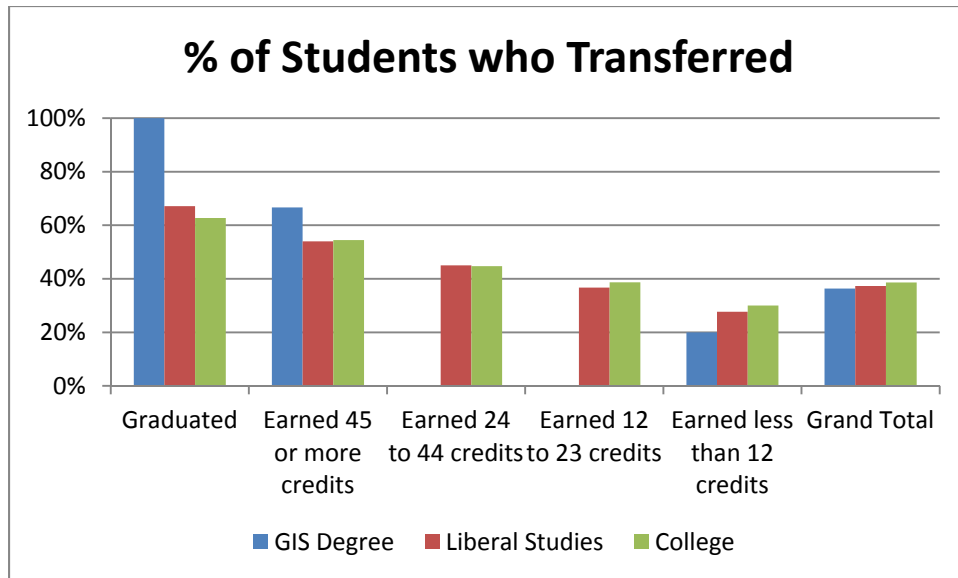
V. Learning Outcomes and Assessment

A. Student Learning Outcomes

Upon completion of this degree, graduates will be able to:
- Identify how geospatial technologies can be utilized within various organizations/applications
- Identify necessary equipment (software and hardware) and data needed to complete projects
- Manage geodatabases (creating, obtaining and updating geospatial data resources)
- Effectively use various geospatial technologies such as Geographic Information Systems (GIS), Global Positioning Systems (GPS) and Remote Sensing (RS)
- Conduct geospatial analyses and operations (geocoding, buffer, clip, distribution, correlation, and network)
- Work productively on geospatial projects, both independently and in teams
- Design cartographic representations (maps) of geospatial analyses, draw conclusions, and prepare reports and presentations that convey geospatial research/application/conclusions

Data for program level outcomes have been collected, and are currently in the process of being compiled. Report will be completed during Summer 2014.

B. Course Learning Outcomes

Table 6: Timeline for Course Learning Outcomes

Course	Assessment Evidence Collected
GIS 101	Fall 2011
GIS 102	Spring 2012
GIS 104	Fall 2011
GIS 201	Spring 2013
GIS 203	Fall 2012

The program is currently up to date on assessment of course learning outcomes, all courses (101, 102, 104, 201 and 203) are completed. Program SLOs remain to be assessed. In all cases, students were meeting SLOs by the end of the course. In cases where they were not (at midterms), the program is in the process of making appropriate changes such as potentially requiring prerequisites, or providing additional support materials. A sample course SLO report can be seen in Appendix A.

The program uses a variety of assessment methods for its SLOs, often utilizing multiple assessments for each outcome. These include traditional methods such as exam questions and rubrics, but also innovative techniques such as peer evaluations.

C. QVIs /335s
335 documentation is up to date for all courses. QVIs have shown the program to be of high quality, but low viability. 335s have also resulted in many of the course changes noted above. A sample 335 may be found in Appendix B.

D. Surveys
Too few students have completed the program to have reliable data from graduates.

E. Advisory Committee
The Advisory Committee meets regularly and has provided support for the program in terms of job and internship possibilities for students, recommendations for curricular changes, and assistance with marketing the program. For Advisory Committee members and their affiliations, see Appendix C.

VI. Resources
Because of the nature of the coursework, many courses in GIS require computer labs and specific software programs. The program faculty have made an effort to utilize as many free software packages as they can to keep costs low for both students and the College. The program also makes efforts to offer many courses online.
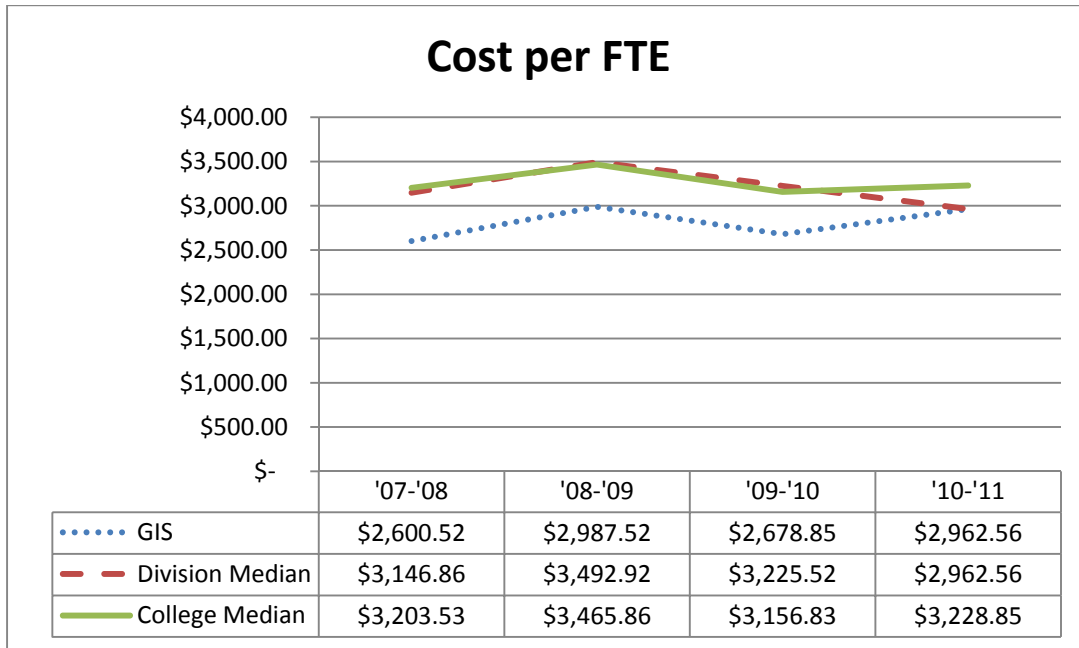
VII. Demand
CCP is the only school in the area to offer associate's degrees or certificates in GIS (GIS / Cartography or Geography, other). There is only one local school (Rowan College) to offer a bachelor's degree in GIS. Burlington County Community also offers an associate's degree, but inquiries there reveal they are often forced to run courses with fewer than five enrolled students.

There is a documented need for professionals with GIS training. However, there are very few jobs for individuals solely with a degree in GIS; additional professional experience is usually required.

VIII. Operating Costs
The costs for the GIS program have been lower than the median costs for both the College and the division.

Figure 2: Program Costs per Full Time Equivalent Student

Cost per FTE

	'07-'08	'08-'09	'09-'10	'10-'11
GIS	$2,600.52	$2,987.52	$2,678.85	$2,962.56
Division Median	$3,146.86	$3,492.92	$3,225.52	$2,962.56
College Median	$3,203.53	$3,465.86	$3,156.83	$3,228.85

IX. Findings and Recommendations

1. Close the GIS degree and academic certificate programs.

Although the GIS program has high quality courses and engaged faculty, the programs have very low participation and, given the nature of job opportunities within the workplace, a degree solely in GIS will not lead to employment. Closing these will allow the program to focus on options that better match the current directions of the field and student needs (see recommendation 2, below).

Timeline: Fall 2014: begin process of program closure, current students contacted. Spring 2015: no new students admitted, plan for completion for currently enrolled students. Spring 2018: final students graduated.

Persons Responsible: Program Director, Associate Dean, Dean.

2. Review proficiency certificate to ensure it meets the current industry needs.

The program already has an excellent relationship with industry through its Advisory Committee. Employing these connections should enable the program to craft proficiency certificate(s) that will attract professionals to the program or will allow students with other interests to add GIS into an existing portfolio of study. Part of this process must include the timing of courses, which should seek to strike an appropriate balance between regular offerings and filled course

seats. Online and hybrid course offerings should also continue to be pursued.

Timeline: Spring 2015
Persons Responsible: Program Director, Division Dean, Program Faculty, Advisory Committee.

Appendix A: Sample SLO Report

Assessment of Student Learning Outcomes Reporting Form
Social Science Department/GIS 104

Responsible person(s) Geri Miller Instructor- Deirdre Garrity Benjamin- Report writer
Data collection semester: Spring 2013 Data analysis and action plan development semester: Summer 2013

Outcome	Assessment Strategies - Describe the techniques and tools you used to assess student learning including, but not limited to:	Expected Benchmark - Describe your expectations for student accomplishment of the outcome.	Results (data)	Action Plan - How will the faculty address the results of assessment? What changes will be made to try to improve student learning?
Demonstrate in writing their understanding of terms related to computer cartography	• The assessment tool that was used was a mid term exam and a final project. • A series of multiple choice and short answer questions were given on the midterm and a final project which included a writing portion was given during the final exam period. • 1 part-time faculty member conducted the assessment. . • A total of 10 students were enrolled in this course • All of the students in this course did not have GIS 102 before taking GIS 104.	It is anticipated that 75% of our students will master this evaluation metric.	After grading the midterm 50% of students received a C but 80% of the students received a B or better on the Final Project. Our expected benchmark was not achieved.	**How will the faculty address the results of assessment? What changes will be made to try to improve student learning?** Although not a course prerequisite, by taking GIS 102 before GIS 104 may better prepare the students for success. This learning objective will be reassessed when the course is offered

				again in 2014.
Express orally their analysis of a mapping problem	• The assessment tool that was used was in class discussions • 1 part-time faculty member conducted the assessment. The assessment was given throughout the semester • 10 students were enrolled in the course • A participation grade of 5% was incorporated into the final grade of the student. No clear grading rubric was given of the term participation.	We expect 80% of students to achieve this learning objective	80% of the students received a full 5% participation grade in the course.	While 80% of the students received a B or better on this learning objective, a clear grading rubric of the expectations of the term participation was not given. This objective will be reassessed the next time the course is offered in 2014.
Demonstrate through the use of a computer based system of ARC GIS software their ability to create a temporal animation	• The assessment tool that was used was a final project • 1 part-time faculty member conducted the assessment. The assessment was given during the final exam period • The final project requires students to create a temporal animation in the final map. An example of the final project is attached.	We expect 75% of students to demonstrate competence of this learning objective.	80% of the students received a B or better on the final	We will continue to use the same methods of assessment since students are demonstrating competence meeting this learning objective. No action is needed at this time We will reassess in 2 years.

Community College of Philadelphia
Summary
Credit Course Evaluation

This form is used to document compliance with 22 Pa. Code § 335 (Community College Courses) for course review by faculty. Analysis of the relationship of course content to expected course outcomes, and course outcomes to programmatic outcomes serves as an indirect assessment measure.

Course Number and Name: GIS 201: advanced Geospatial Applications

Catalog Description:
This course introduces the advanced technical topics of data models, geoprocessing and enterprise GIS systems. Students will also learn advanced geospatial concepts though case studies that examine real-world application of GIS technology principles. Prerequisite: GIS 102

1. Is the course consistent with the College Mission? Yes __X_ No___
   This course is consistent with the College mission in several ways. By using data models, generating and deriving data sets and understanding the server side of GIS improves a student's ability to pursue paths of inquiry. It also requires students to interpret and evaluate what they have discovered, and to improve their ability to express the reactions to their discoveries in an effective manner. This course helps students prepare for future work by requiring that they create maps, charts and data tables for their portfolios, a critical component in the GIS hiring process. All of the above help heighten a student's curiosity, which leads to an active interest in intellectual questions that may help solve cultural, social and scientific issues.

2. Does the credit assignment meet accepted practices?
   Yes_ X_ No___
   This course meets the accepted practice, typically topic based GIS courses are three credits.

3. Do the course materials reflect the knowledge in the program's field of study?
   Yes___ No_X_
   The original materials included in the course documents met the knowledge of the field of study at the time but need to be revised to include current technology used. The original materials for this course include the use of two texts related to two of the four major sections covered in the course. The texts are to be related to Data Models/Schema Design and Geoprocessing and contain tutorial exercised related to modeling and data collection. The other two topics dealing with server GIS and Case Studies will use supplemental handouts and online articles to reflect current day trends. Arc GIS software will be used along with the texts. Besides the basic ARC GIS software, the students will also need the Spatial Analyst and 3D Analyst extensions.

   While the software requirements and topics dealing with server GIS and Case Studies will continue in the revision, the text book and tutorial options will evaluated.

4. Is the Catalog description of the course accurate? If no, explain needed changes.
   The catalog description of the course accurately describes the content of this course, which is advanced geospatial applications

5. Is the course content appropriate to help students achieve student learning outcomes at the course level, program level or general education/ core competency level?
   Yes X_ No___

Currently, the course content is appropriate to help students achieve learning outcomes at the course level but the course needs to be revised to include current technologies used in the field. This course uses many approaches to education including lecture and discussion, computer based exercises and portfolio development. The content and activities help students demonstrate all expected course outcomes: loading data into a standard model, demonstrating in writing understanding of the information technology implications of working with this GIS technology in multidepartment organizations and applying GIS skills (analysis and software modeling) to case studies.

6. Do the student learning outcomes match the needed knowledge base and skills to achieve programmatic and/or general education/core competency outcomes, and/or to prepare students for the succeeding course (s)? (Refer to curriculum map, program assessment plan, etc.)
Yes__X__ No____

This course requires students to have completed GIS 102: Intermediate Geographic Information Systems. This prerequisite is needed in order that students have a basic understanding of mapping as well as the software used. Review of the curriculum map shows that this course supports achievement of the programmatic outcomes focused on managing geodatabases and effective use of geospatial technologies. It allows students to demonstrate mastery of all program outcomes: identifying how geospatial technologies can be used with various organizations and applications, identifying necessary equipment and data needed to complete projects, managing geodatabases, effectively using various geospatial technologies, conducting geospatial analysis working independently and in teams on geospatial projects; and, designing cartographic representations of geospatial analyses and conveying research, application and conclusions.

By completion of this course, students will be prepared to take GIS 206: Introduction to Web GIS.

7. If applicable, is the course content similar to that of other transfer institutions?
Yes _X__ No___
This course content is similar to that of other transfer institutions. Institutions such as West Chester University, and Rowan University offer similar courses.

8. Has the Department Head presented the Summary of the Credit Course Evaluation findings for departmental review and appropriate action? Please include method of communication e.g. department meeting.

Yes. The Department Head has posted this summary evaluation to the departmental listserv.

Action Plan (including timeline for completion):

This course will be revised by the Spring of 2014. The course needs to include current advanced GIS tools, including but limited to Python scripting, Model Builder and other advanced GIS tools and applications.

The above course is approved and deemed to be in compliance with College requirements for credit course evaluation and Pennsylvania Department of Education Chapter 335 Audit documentation requirement.

Act 335 eval 10-27-11

Appendix C: GIS Advisory Committee Members

Name	Professional Association	Relationship with Program
Helene Iavecchia	CSC (IT Company)	Fmr Student / GIS Prof Group
Paul Caris	New Jersey Department of Env. Protection	Adjunct Professor
Seth Hackman	New Jersey Department of Env. Protection	Adjunct Professor
Mark Dodds	City of Philadelphia	Former Adjunct
Sarah Low	Federal Government- Parks Service	Former Adjunct
Chris Pollard	Delaware Valley Regional Planning Commission	Will teach Web GIS
Jason Sladinski	American Water	Former Student
Benn Viss	Philadelphia Gas Works	Former Student
Luis Oliveri	Geodec Consulting	Adjunct Professor
Geri Miller	ESRI (GIS Software Company)	Adjunct Professor