

**STUDENT OUTCOMES COMMITTEE OF THE
BOARD OF TRUSTEES**

MINUTES

Thursday, September 6, 2012

1:30 p.m. – M2-34

Presiding: Dr. James Roebuck

Present: Dr. Stephen Curtis, Ms. Varsovia Fernandez, Dr. Judith Gay, Dr. Samuel Hirsch, Ms. Dorothy Sumners Rush

Guests: Dr. Mary Anne Celenza, Ms. Laura Davidson, Mr. John Moore, Dr. Sharon Thompson

(1) Executive Session

An Executive Session was not held.

(2) Public Session

(a) Approval of Minutes of May 3, 2012

The minutes were accepted.

(b) Liberal Arts – Social/Behavioral Science Option Audit

Dr. Sharon Thompson reviewed the audit findings. Of particular note was the potential impact of the new Psychology degree on enrollment in the Liberal Arts-Social/Behavior Science Option. The majority of students in this option are interested in psychology. Board members discussed the importance of students knowing which degree track is most appropriate for their goals. This should be a major consideration in any decision about whether to maintain this degree. Board members asked Dr. Thompson to convene a committee of faculty to discuss the options in the audit and to report back to the Student Outcomes Committee of the Board in one year.

Action: The Student Outcomes Committee recommends that the Board of Trustees accept the Liberal Arts – Social/Behavioral Science Option Audit and require a follow-up report by June 2013.

(c) Culture, Science and Technology Program Audit Update

Prof. Laura Davidson and Dr. Celenza reviewed the Culture, Science and Technology update. They emphasized the challenges involved in designing effective solutions to the problems detailed in the second follow-up report.

Board members commented on the use of the term “General Studies.” Dr. Gay and Dr. Curtis assured the Board members that that term is a place holder for a general concept – not the term that will be used for a program revision.

Board members stressed the importance of early identification of students as a way of assisting them in the selection of an appropriate academic and career pathway. Board members asked for a progress report on the initiatives detailed in the report by June 2013 with the recognition that some of the initiatives may take longer to implement.

Action: The Student Outcomes Committee recommends that the Board of Trustees accept the Culture, Science and Technology Program Audit Follow-Up Report and require a follow-up report by June 2013.

(d) Science Program Audit

This agenda item was not discussed and will be deferred to the October meeting.

(3) Next Meeting

The next meeting of the Student Outcomes Committee of the Board is scheduled for October 4, 2012 at 1:30 p.m. in conference room M2-34.

Attachments

Minutes of May 3, 2012
Liberal Arts – Social/Behavioral Science Option Audit
Culture, Science and Technology Program Audit Update
Science Program Audit

COMMUNITY COLLEGE OF PHILADELPHIA
STUDENT OUTCOMES COMMITTEE OF THE
BOARD OF TRUSTEES

MINUTES
Thursday, May 3, 2012
1:30 p.m. – M2-34

Presiding: Ms. Stacy Holland
Present: Dr. Stephen Curtis, Ms. Varsovia Fernandez, Dr. Judith Gay, Dr. Samuel Hirsch, Ms. Dorothy Sumners Rush
Guests: Dr. Ron Jackson, Mr. David Watters

(1) Executive Session

No Executive Session was held.

(2) Public Session

(a) Approval of the Minutes of March 1, 2012

The minutes were accepted.

(b) Proposed 2012-13 Student Activities, Athletics, and Commencement Budget (Action Item)

Dr. Hirsch introduced Dr. Ron Jackson, Dean of Students and Mr. David Watters, Assistant Dean of Students/Director of Student Life. Mr. Watters reviewed the budget assumptions and rationale for the proposed 2012-13 Budget for Student Activities, Athletics, and Commencement. He indicated that individual budget lines were essentially at level funding and that no major changes were being proposed.

Mr. Watters explained the Athletics portion of the budget by highlighting the dissolution of the Eastern Pennsylvania Collegiate Conference (EPCC) for most sports and that for 2012-13 the College will be an independent/non-affiliated school for most sports. Men's Soccer and Cross Country will continue to compete as EPCC league members. The reduction of \$10,000 from Men's Basketball takes into account no post-season play as the College will not be participating in any Conference. The increase of \$10,000 in Co-Ed Intramural is to fund the proposed implementation of Co-Ed bowling which is an EPCC sport. Dr. Hirsch indicated that the College will begin the process this coming year of realigning intercollegiate-athletics to transition to the National Junior College Athletic Association (NJCAA) to go into effect fall 2013. This will have budget

implications for 2013-14 due to the data collection requirements of NJCAA and the need to potentially cover cross-country team travel.

Ms. Sumners Rush asked if the College has established academic standards for athletes. Dr. Jackson explained the academic requirements that are currently in place and indicated that due to NJCAA's higher academic requirements the College is planning to put in place additional academic support to ensure athletes maintain positive academic performance.

Ms. Holland questioned the increase in net profits. Mr. Watters responded that while the budget is based on a 4% enrollment decrease, net profits from auxiliary services such as the bookstore are projected to increase by approximately 17% over the current year.

Action: The Student Outcomes Committee of the Board agreed to recommend to the full Board approval of the proposed 2012-13 Budget for Student Activities, Athletics, and Commencement.

(c) Financial Aid Regulations Update

Dr. Hirsch reviewed the 2012-13 Changes to Title IV Student Aid Programs document. He noted that while the current maximum Pell award of \$5,550 will remain the same for next year new regulations are beginning to restrict financial aid eligibility. This seems to be a trend beginning with this year. Dr. Curtis indicated that while the restrictions may only impact a few hundred students now, over time the impact could be significant in terms of eroding access for students into higher education.

Next Meeting

The next meeting of the Student Outcomes Committee is scheduled for Thursday, **June 7, 2012** at **1:30 p.m.** in M2-34.

Attachments

Minutes of March1, 2012
Summary of Proposed 2012-13 Student Activities, Athletics, and Commencement Budget – Table VII-A
Detailed Proposed 2012-13 Student Activities, Athletics, and Commencement Budget – Table VII-B
Proposed 2012-13 Student Activities, Athletics, and Commencement Budget Assumptions and Rationale
2012-13 Changes to Title IV Student Aid Programs

Community College of Philadelphia

*Academic Program Audit: Liberal Arts – Social/Behavioral Science
Option Program*

Division of Liberal Studies

Authors:

John V Moore III
Michelle Williams

Contributors:

Linda Hansel

Date: May 30, 2012

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I. Executive Summary

Introduced in 1995, the Social/Behavioral Science Option within the Liberal Arts program is the 2nd largest option within Liberal Arts. The curriculum enrolls more female, African-American, and Latino/a, younger, and full time students than the College in general. Despite having higher overall graduation rates, the students in the curriculum are marginally less likely to be in good academic standing and have slightly lower GPAs than the College at large. Most students planned on transferring to another institution upon completion of their degree, and students, overall, report high levels of satisfaction with the curriculum and their preparation within it. The addition of a dedicated Psychology program will likely impact the curriculum in terms of student need. Students interested in Psychology were an important part of the student body within the Liberal Arts—Social/ Behavioral Science Option and may result in a significant drop in the number of students enrolled in the curriculum. If other new programs are developed within the disciplines associated with Social and Behavioral Science, it could further compromise the long term viability of the curriculum.

II. Program

Educational Mission and Goals

The Liberal Arts degree program is designed for students planning to transfer to baccalaureate programs or professional schools after study at Community College of Philadelphia; for students seeking a non-specialized associate's degree; for students planning to enter certain select programs at a later date; and for students undecided about their long-term educational goals. Specifically, the Social/Behavioral Science Option is appropriate for students who wish to emphasize social science fields, whether for personal interest or with the goal of transfer to majors in such subjects as sociology, social work, urban studies, political science, geography, anthropology, economics, history or related fields.

The Liberal Arts Curriculum-Social/Behavioral Science Option is designed to provide each of its graduates with a coherent course of study that is the base of a liberal education. The curriculum provides a broad array of general education and specialized courses and allows those students who are undecided about their future plans sufficient flexibility to be prepared for a variety of future options. The planning of the course requirements reflects the desire to provide a solid liberal arts education, and at the same time, facilitate transfer.

Major Goals of the Program

The Liberal Arts Curriculum-Social/Behavioral Science Option has the following student learning outcomes:

Upon completion of this curriculum graduates will be able to:

- Demonstrate critical analysis of arguments and evaluation of an argument's major assertions, its background assumptions and the evidence used to support its assertions.
- Communicate effectively through written and oral means including essays, research papers and classroom presentations.
- Understand principles of human behavior and social structures.
- Understand how the scientific method is used to study human behavior and social structures.

Brief History of the Program and Recent Curricular Revisions

The original conception of the Liberal Arts curriculum had four options, a General Option and three more specific options to guide those students who had an identified interest in Humanities, in Social or Behavioral Science, or in International Studies. Since then, additional Options were added: Women's Studies/Gender Studies, Leadership Studies, African American and African Diaspora Studies, Religious Studies, and the Honors Options. International Studies, Women's Studies and Community Leadership are now independent degree programs.

The Liberal Arts Curriculum—Social/Behavioral Science Option was introduced in Spring 1995, as part of a revision of the Associate in Arts Curriculum. The curriculum was intended to serve those students who chose a traditional liberal arts education, primarily those who planned to transfer to a baccalaureate program. It was originally designed to include students interested in majoring in Psychology. In 2010 a separate Psychology curriculum was designed for those students.

The Liberal Arts Curriculum, Social/Behavioral Science Option was revised in March 2009. This revision sought to maintain the basic structure and goals of the existing curriculum while making requirements simpler for students and advisors to understand. The five major points of the revision are listed below.

1. A key feature of the curriculum was the notion of "Advanced/Sequential" coursework to ensure depth of study. In order to assure adequate depth but in a simpler fashion, the revision replaced the "Advanced/Sequential" requirements with a requirement that students take two courses from a defined set of courses within a single social science discipline or closely related disciplines and two courses from a defined set of courses within a single humanities discipline or closely related disciplines. Breadth was maintained by requiring students to take courses from a range of disciplines.
2. The requirement that all History courses be counted as Social Science or all History courses be counted as Humanities was eliminated.
3. The Aesthetic Understanding/Oral/Creative Expression requirement was renamed the Artistic/Oral requirement. All courses that met the original requirement met the new, renamed requirement. Students can fulfill the new requirement by taking courses where they engage in the creative process (such as painting and creative writing) or by taking courses where they study creative works by others (such as art history and literature).

4. The two International Emphasis courses were replaced with a requirement for two Global Diversity courses in order to make the curriculum's language consistent with the College wide language at the time and reduce confusion. Students were still required to take at least one course that explores American Diversity as well.
5. The Concentration Electives component was eliminated. The Concentration electives required a "unifying focus" which was a subjective concept and very difficult to enforce as a graduation requirement. The notion of depth was retained within the curriculum through the requirement that students take two courses from a defined set of courses within a single discipline or closely related disciplines.

Description of the Current Curriculum

Liberal Arts Social/Behavioral Science Option

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
FIRST SEMESTER			
ENGL 101—English Composition I		3	ENGL 101
Math 118—Intermediate Algebra or above		3	Mathematics
CIS 103—Applied Computer Technology		3	Tech Comp
Social Science or Humanities Elective		3	
Social Science Elective		3	
SECOND SEMESTER			
ENGL 102— The Research Paper	ENGL 101	3	ENGL 102 & Info Lit
1 st in Social Science Cluster		3	Soc Science
1 st in Humanities Cluster		3	Humanities
Social Science Elective		3	
Science (at least one science must include a lab)		3 or 4	Natural Science
THIRD SEMESTER			
2 nd in Social Science Cluster		3	
2 nd in Humanities Cluster		3	
Social Science Elective		3	
Science (at least one science must include a lab)		3 or 4	
Artistic/Oral		3	
FOURTH SEMESTER			
Social Science Elective		3	
Social Science Elective		3	
General Elective		3	
General Elective		3	
General Elective		3	
MINIMUM CREDITS NEEDED TO GRADUATE		61	

GENERAL EDUCATION REQUIREMENTS

All General Education requirements are met through required courses (as indicated above) except for the **Writing Intensive** requirement, the **Interpretive Studies** requirement and the **American/Global Diversity** requirement. Therefore, in order to graduate, students in this program must choose one course that is designated Writing Intensive, one course that is designated Interpretive Studies, one course that is designated American Diversity and two courses designated Global Diversity. The same course may be used to fulfill more than one of these requirements. A list of courses that fulfill these requirements and a more detailed explanation of the College's general education requirements appear elsewhere in this catalog and on www.ccp.edu.

Internal Curricular Coherence

The curriculum is sequenced for students to enroll initially in foundational English, mathematics and an applied computer technology course. The Liberal Arts Curriculum fosters coherence through integrating elements of depth as well as breadth, connected courses as well as flexible choices, required categories of courses as well as flexible options. The curriculum incorporates the College's General Education requirements.

Future Directions in the Field/Program

As described in Section VI, the implementation of the degree in Psychology might well have a significant impact on the demand for this curriculum. In addition, if the direction set by the Commonwealth for State-wide standards and articulation for specific degrees through the Transfer Articulation Oversight Committee is an indication of the trend for higher educational institutions to move from more general to more specific degree programs to facilitate transfer, then the need for this broad option needs to be re-considered.

The current trend toward growth in the curriculum will need to be monitored in light of the creation of the freestanding Psychology program. There remain some questions about the leadership and direction of this option, specifically, and the idea of Liberal Arts Options, generally. Because this program has no coordinator, students are not always aware that they are even in this option, and with a major population being siphoned off, it is not clear that there is an investment in this program large enough to marshal it through the changes necessary for its long-term viability.

III. Faculty

There are no faculty members specifically designated as "Liberal Arts Curriculum faculty." Faculty who teach students enrolled in the various Liberal Arts curricula reside in their appropriate academic department. All full time and part time faculty must meet the minimum educational and experiential requirements defined by the individual department/discipline. Each academic department has an approved faculty evaluation plan guiding both developmental and summative evaluation – helping to ensure that faculty remain current in their discipline. Faculty elect to participate in a variety of professional development activities.

IV. Learning Outcomes and Assessment

Learning Outcomes

The Liberal Arts Curriculum – Social/Behavioral Science Option was designed based on core educational values of breadth, depth, flexibility and transferability.

This curriculum prepares students to achieve the following expected student learning outcomes, which are consistent with the College’s General Education outcomes. Given the openness of course selection intended in this curriculum, the following modified curriculum map is an appropriate tool for assessing alignment of courses with the program outcomes.

Programmatic Learning Outcomes			
Communicate effectively through written and oral means including essays, research papers and classroom presentations.	Understand principles of human behavior and social structures.	Demonstrate critical analysis of arguments and evaluation of an argument’s major assertions, its background assumptions and the evidence used to support its assertions.	Understand how the scientific method is used to study human behavior and social structures.
ENGL 101	Social Science electives/cluster courses (7-8 courses)	Humanities electives/cluster courses (2+ courses)	Science elective (lab) Science elective (lab or non-lab)
ENGL 102		Courses designated as Interpretive Studies (1 minimum; varies by choice)	Social Science electives/cluster courses (7-8 courses)
Courses designated Artistic/Oral (if oral course is selected)			Math 118 (or higher)
CIS 103			
Humanities electives/cluster courses (2+ courses)			
Social Science electives/cluster courses (7-8 courses)			
In addition, students select 3 general electives; depending student choice, those courses could also support any of the program Outcomes.			

Timeline - Assessment of Program Level Student Learning Outcomes

The following timeline shows a planned sequence for completing the assessment cycle. Because the expected learning outcomes of the Liberal Arts – Social/Behavioral Science Option closely parallel the College’s expected outcomes/ core competencies, a random sample of students enrolled in this curriculum will be assessed as a subset of the College-wide samples. There are still some steps to be taken with this assessment process (see Recommendation 1).

LA-Social/ Behavioral Science Option Learning Outcome	Communicate effectively through written and oral means including essays, research papers and classroom presentations.	Understand principles of human behavior and social structures.	Demonstrate critical analysis of arguments and evaluation of an argument’s major assertions, its background assumptions and the evidence used to support its assertions.	Understand how the scientific method is used to study human behavior and social structures.
Related Core Competency to be assessed	Effective Communication		Critical Thinking	Scientific Reasoning
2011-2012	To be consistent with core competency assessment: Spring 2012- collect data	Fall 2012- collect data	Spring 2012 – collect data	TBA – consistent with core competency assessment
2012-2013	Fall 2012- analyze data, propose changes; Spring 2013 - Implement changes	Spring 2013 - analyze data, propose changes; Fall 2013 - Implement changes	Fall 2012 – analyze data, propose changes; Spring 2013 – implement changes	
2013-2014	Fall 2013– collect data; Spring 2014 - analyze new data, complete report	Fall 2013– collect data; Spring 2014 - analyze new data, complete report	Fall 2013 – collect data; Spring 2014 – analyze new data, complete report	

Graduates

The number of graduates in the Liberal Arts – Social/Behavioral Science curriculum has more than doubled since 2006. The average number of graduates over the past 5 years is 74.

Number of program graduates

	2006	2007	2008	2009	2010	2011
Program	41	41	61	82	78	106

Student Profile

The Liberal Arts – Social/Behavioral Science curriculum enrolls a diverse student body. Enrollment data drawn from the College's Office of Institutional Research website indicates that students in the curriculum are predominantly female students.

The credit headcount in the Liberal Arts – Social/Behavioral Science curriculum more than doubled between Fall 2007 and Spring 2011, the highpoint for enrollment. There had been a steady increase in the number of students enrolled in the curriculum until Fall 2011. The largest increase was between Fall 2010 and Spring 2011, an 86 student increase in enrollment; this, however, was followed by an almost equally sized drop (62) the following Fall.

Headcount

	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011
Program	243	255	251	298	354	409	444	530	468
College-wide	17,334	17,661	17,327	18,024	19,047	19,963	19,503	20,170	19,756

FTE headcount

	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011
Program	177	183	186	220	273	312	340	399	349
College-wide	11,881	11,823	11,883	12,128	13,362	13,786	13,697	13,863	13,685

The following table indicates that the majority of Liberal Arts – Social/Behavioral Science curriculum are females. The curriculum has consistently enrolled more female than male students every semester. On average, the curriculum enrolls 8.2% more female students than the College as a whole.

Curriculum Enrollment by Gender as Compared to College-wide Enrollment (Percent)

Gender		Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011
Female	Program	74.9%	77.3%	72.5%	73.8%	70.3%	73.1%	75.5%	72.1%	73.5%
	College	66.7%	66.4%	66.3%	65.9%	65.3%	65.3%	64.6%	64.2%	64.5%
Male	Program	25.1%	22.7%	27.5%	25.8%	29.1%	26.4%	23.9%	27.5%	26.3%
	College	32.3%	32.8%	32.8%	33.1%	33.7%	33.9%	34.8%	35.3%	35.1%
Unknown	Program	0.0%	0.0%	0.0%	0.3%	0.6%	0.5%	0.7%	0.4%	0.2%
	College	1.0%	0.8%	0.8%	1.0%	0.9%	0.8%	0.6%	0.5%	0.3%

The following tables indicate that the Black students represent the largest racial/ethnic group in the Liberal Arts – Social/Behavioral Science curriculum. On average, 57.5% of the curriculum consists of Black students. The curriculum also enrolls a higher proportion of Hispanic students in comparison to the College as a whole.

Program Enrollment by Racial/Ethnic Background as Compared to College-Wide Distribution (percent)

Race		Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011
Native American	Program	0.8%	1.6%	1.2%	0.7%	0.8%	0.5%	0.7%	0.6%	1.1%
	College	0.5%	0.4%	0.4%	0.4%	0.4%	0.3%	0.5%	0.5%	0.5%
Asian	Program	3.3%	2.7%	2.8%	2.7%	2.0%	2.2%	3.2%	3.6%	4.1%
	College	8.3%	7.9%	7.2%	7.1%	6.9%	6.8%	7.2%	6.9%	7.0%
Black, Non-Hispanic	Program	57.2%	56.5%	60.2%	56.4%	57.1%	56.5%	56.3%	57.9%	59.6%
	College	47.1%	48.0%	46.8%	47.4%	47.2%	48.0%	47.7%	49.1%	49.2%
Hispanic	Program	7.4%	7.1%	6.8%	9.4%	9.6%	10.8%	8.3%	8.1%	6.4%
	College	6.5%	6.4%	7.0%	6.6%	7.0%	7.2%	6.6%	6.1%	5.2%
Other	Program	2.9%	3.1%	3.6%	2.3%	2.5%	2.7%	2.9%	2.8%	2.4%
	College	26.1%	25.5%	26.1%	25.4%	25.4%	24.4%	24.8%	24.4%	24.9%
Unknown	Program	8.6%	10.2%	8.4%	7.7%	6.8%	6.6%	8.3%	7.9%	7.5%
	College	4.2%	4.3%	4.1%	3.9%	4.2%	4.3%	4.0%	3.8%	3.2%
White, Non-Hispanic	Program	19.8%	18.8%	17.1%	20.8%	21.2%	20.8%	20.3%	19.1%	19.0%
	College	7.4%	7.5%	8.4%	9.2%	9.1%	8.8%	9.2%	9.1%	9.9%

The following table indicates that students are predominantly under the age of 30. On average, about 74.5% of Liberal Arts – Social/Behavioral Science students are between the ages of 16-29. When compared to the College as a whole, the Liberal Arts – Social/Behavioral Science curriculum enrolls a similar student body in terms of age.

Enrollment by Age as Compared to College-wide Enrollment (Percent)

Years		Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011
16-21	Program	35.0%	32.5%	41.4%	36.9%	44.4%	39.1%	45.3%	35.1%	39.3%
	College	36.9%	30.7%	36.7%	29.7%	35.5%	29.6%	36.0%	29.4%	35.8%
22-29	Program	38.7%	37.6%	33.1%	36.6%	31.6%	35.9%	32.4%	40.6%	34.8%
	College	30.4%	35.1%	30.8%	36.2%	33.0%	37.3%	33.6%	38.1%	34.3%
30-39	Program	11.5%	18.4%	15.1%	13.1%	13.3%	14.2%	11.9%	13.2%	12.6%
	College	15.9%	16.8%	15.9%	17.4%	16.2%	17.8%	16.5%	17.7%	16.2%
40+	Program	12.3%	9.4%	8.0%	11.4%	9.9%	10.5%	9.9%	10.9%	13.2%
	College	13.8%	14.6%	14.3%	14.6%	13.7%	14.0%	12.6%	13.7%	12.7%
Unknown	Program	2.5%	2.0%	2.4%	2.0%	0.8%	0.2%	0.5%	0.2%	0.0%
	College	3.0%	2.7%	2.4%	2.2%	1.5%	1.3%	1.3%	1.1%	0.9%

Although there are some fluctuations in full- and part- time students, in the period between Fall 2007 and Fall 2011 the ratio of students enrolled full time to students enrolled part time in the Liberal Arts – Social/Behavioral Science curriculum generally remained steady. Compared to the College as a whole, the curriculum is currently enrolling more full-time students and fewer part-time students.

Program Full-time/Part-Time Enrollments as Compared to College-wide Enrollments (Percent)

		Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011
Full Time	Program	39.9%	37.6%	44.2%	41.9%	50.0%	43.5%	45.5%	39.8%	38.9%
	College	32.8%	29.2%	32.7%	30.0%	35.3%	32.2%	34.2%	30.5%	31.2%
Part Time	Program	60.1%	62.4%	55.8%	58.1%	50.0%	56.5%	54.5%	60.2%	61.1%
	College	67.2%	70.8%	67.3%	70.0%	64.7%	67.8%	65.8%	69.5%	68.8%

Retention Data

Students enrolled in the Liberal Arts – Social/Behavioral Science curriculum in the Fall Semester are likely to return to the same curriculum the subsequent Spring semester. In addition, students enrolled in the curriculum graduate at higher rates in the Spring than the College as a whole, averaging 2.3% higher over the last five years.

Students who returned to the Same Program or a different program in the subsequent Spring Semester (Percentage)

		Fall 2007	Fall 2008	Fall 2009	Fall 2010
Returned Same Program	Program	63.8%	63.7%	65.8%	69.6%
	College	64.2%	64.6%	66.8%	66.9%
Returned Different Program	Program	6.2%	3.2%	3.1%	3.8%
	College	5.2%	5.1%	4.8%	4.9%
Graduated Fall	Program	3.3%	5.2%	3.4%	5.4%
	College	2.1%	1.8%	2.0%	2.2%
Did not return Spring	Program	26.7%	27.9%	27.7%	21.2%
	College	28.6%	28.5%	26.4%	25.9%

Students enrolled in the Liberal Arts – Social/Behavioral Science curriculum in the Fall semester are likely to either return to the same curriculum or not return to the College the subsequent Fall semester. On average, students in the curriculum are graduating at a 6.8% higher rate than those of the College.

Students who returned to the Same Program or a different program in the subsequent Fall Semester (Percentage)

		Fall 2007	Fall 2008	Fall 2009	Fall 2010
Returned Same Program	Program	32.1%	31.1%	38.7%	36.5%
	College	35.0%	37.1%	38.5%	37.0%
Returned Different Program	Program	5.8%	6.8%	4.2%	7.0%
	College	8.2%	8.5%	7.6%	9.1%
Graduated	Program	14.8%	19.5%	10.2%	15.8%
	College	8.1%	8.3%	8.1%	8.5%
Did not return Fall	Program	47.3%	42.6%	46.9%	40.8%
	College	48.8%	46.1%	45.8%	45.3%

Academic Performance

The average course completion of students enrolled in the Liberal Arts – Social/Behavioral Science curriculum is 86.5% with an average GPA of 2.55 over the last nine semesters. The vast majority of students were in good standing (averaging almost 80%). When compared to the College as a whole, Liberal Arts – Social/Behavioral Science students are performing at a slightly lower level academically than the College as a whole (with an average GPA of 2.55 compared to 2.67 for the College). However, more students in the curriculum are experiencing long-term success at departure than the College as a whole as well as greater graduation rates.

Course Completion and Average GPA

		Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011
Percent of credits completed	Program	91.1%	85.5%	89.9%	86.3%	82.2%	83.7%	89.2%	86.9%	83.7%
	College	88.8%	87.8%	89.9%	89.0%	88.5%	87.7%	88.8%	87.7%	85.8%
Average GPA	Program	2.70	2.45	2.61	2.63	2.42	2.51	2.62	2.52	2.47
	College	2.65	2.63	2.69	2.68	2.66	2.64	2.67	2.63	2.54

Academic Standing (percent)

		Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011
Good Standing	Program	80.7%	77.3%	78.9%	78.2%	78.8%	76.5%	82.2%	81.9%	79.9%
	College	83.8%	82.2%	85.0%	83.0%	85.6%	83.6%	84.4%	84.1%	83.8%
Dropped: Insufficient Progress	Program	1.6%	5.1%	3.6%	3.4%	1.1%	1.2%	1.4%	1.1%	0.9%
	College	1.7%	3.2%	2.2%	3.3%	0.7%	0.9%	1.1%	1.1%	1.3%
Dropped: Poor Scholarship	Program	2.9%	4.3%	2.0%	1.7%	0.3%	0.7%	0.9%	0.4%	1.1%
	College	1.7%	2.3%	1.5%	2.2%	0.5%	0.8%	0.8%	0.8%	0.8%
Probation Full-time Status	Program	12.8%	10.6%	11.2%	12.8%	15.0%	13.9%	9.5%	11.5%	10.5%
	College	10.5%	9.7%	8.7%	8.8%	9.3%	10.1%	9.2%	9.3%	9.3%
Provisional Full-time Status	Program	1.6%	2.7%	2.8%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%
	College	1.2%	1.7%	1.5%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Probation Part-time Status	Program	0.4%	0.0%	1.6%	2.3%	4.8%	7.6%	6.1%	5.1%	7.7%
	College	1.0%	0.8%	1.0%	1.3%	4.0%	4.7%	4.5%	4.7%	4.8%

Success at departure (percent)

		Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009
Graduated	Program	9.3%	22.0%	16.9%	28.6%	13.3%
	College	6.5%	13.7%	6.0%	14.4%	7.2%
Long term success*	Program	37.0%	38.5%	36.9%	29.4%	28.9%
	College	34.2%	36.1%	35.9%	35.5%	36.9%
Short term success**	Program	16.7%	5.5%	9.2%	11.9%	13.3%
	College	18.8%	17.2%	18.4%	17.3%	18.2%
Unsuccessful***	Program	37.0%	33.9%	36.9%	30.2%	44.4%
	College	40.5%	33.0%	39.8%	32.8%	37.7%

* Departure with a GPA of 2.0 or greater and 12 or more cumulative hours earned.

** Departure with GPA of 2.0 or greater with 11 or fewer cumulative hours earned.

*** Departing students not otherwise classified, including students who never completed a College-level course.

Transfer by Credits

		2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Graduated	Program	64%	71%	65%	65%	78%
	College	65%	61%	61%	60%	48%
45+ Credits	Program	100%	31%	62%	44%	25%
	College	57%	57%	53%	53%	68%
24 to 44 credits	Program	55%	43%	56%	41%	41%
	College	49%	43%	41%	40%	40%
12 to 23 credits	Program	33%	50%	52%	21%	31%
	College	39%	40%	38%	31%	28%
<12 credits	Program	42%	38%	33%	37%	15%
	College	31%	29%	27%	26%	20%

Because the transfer numbers are cumulative, more recently graduated/departed students have had less time to transfer than those who have left several years ago. This means year to year comparisons generally do not reveal much. However, it is clear that in most categories, the Liberal Arts – Behavioral/Social Science Option transfers students at a higher rate than the College in general.

Summary of Student Survey Results

A survey for 400 students currently enrolled in the Liberal Arts-Social Behavioral Science curriculum, 310 graduates of the curriculum, and 311 former students was emailed (via Survey Monkey) or mailed via US mail. A total of 78 of the 900 current students responded (8.6 % return rate) while 16 of the 310 curriculum graduates (5.2 % return rate) responded. Finally, 3 of the 311 (approximately 1%) former students responded to the survey. The complete survey results are shown in Appendix A.

Current students were asked, **“Which of the following reasons were important to you when you enrolled in the Liberal Arts-Social/Behavioral Science Option Curriculum at CCP.”**

The top three responses were:

- 83.1% indicated that preparing for transfer to a 4 year institution was important.
- 66.2% indicated that earning an Associate’s degree was important.
- 21.1% indicated that learning skills needed to enter the job market, immediately upon graduation, was important.

Additionally, 7% of the respondents chose other as a response. Their responses were:

- “To help others and myself.”
- “My goal is to establish and oversee a community resource center for all people. I would also like to be accepted to Lincoln university two year master program.”
- “I love the study of behavior.”
- “I’m interested in obtaining a four year degree in Human Services because I want to give back to my community. I’m not sure though if I want to become a social worker.”

- “I always knew I wanted to be an elementary teacher or a College professor. Unfortunately, in Fall 2009 I transferred from another College to CCP with the intention of applying and continuing with Education major, but most of my credits were not accepted including practicum courses and internship. ...”

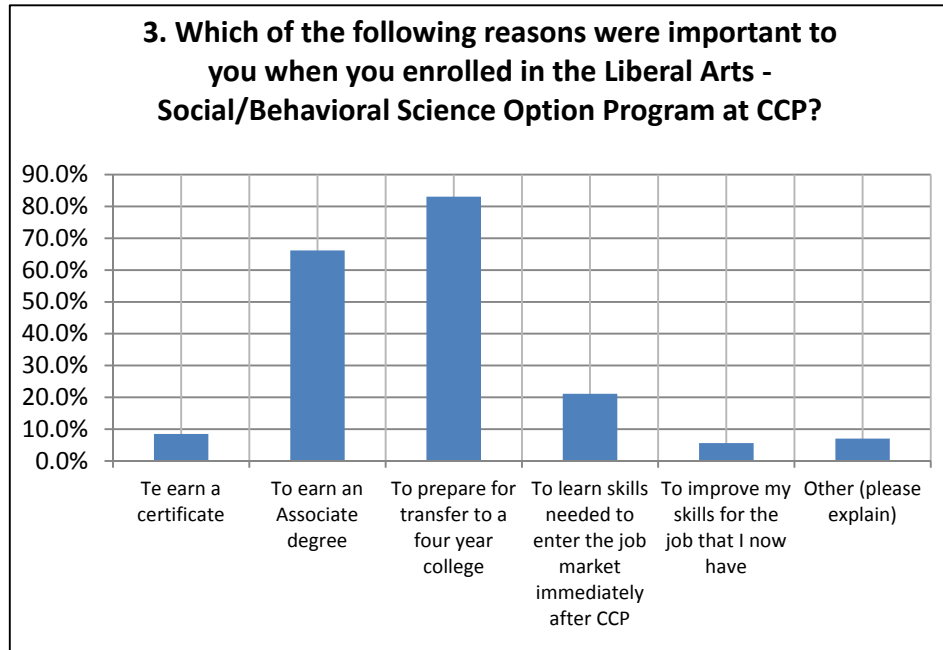


Figure 1

86% of current students, 100% of curriculum graduates, and 100% of former students¹ are/were satisfied with the instruction they received while in the curriculum. In addition, 100% of former students (n= 3) and curriculum graduates were satisfied with the support they received from curriculum faculty. For instance, many graduated students mentioned the faculty’s willingness to help with planning their schedules and coordinating their transfers out of CCP. Current students on the other hand, were less satisfied by the support they receive from curriculum faculty. While, many of these students cited the accessibility and support of their professors, some felt they were not given enough support in terms of general counseling and class selection.

In response to the question, **“Do you feel that you are accomplishing/have accomplished the educational objectives you set for yourself at Community College of Philadelphia?”**

- 100% of curriculum graduates
- 98.6% of current students

said they either fully or partly accomplished their objectives.

Current students and curriculum graduates were asked how well the curriculum prepares its students for transfer. Of the students who responded

¹ Only three (3) former students responded to this survey; so the 100% should be interpreted with caution because of the small sample size.

- 74.6% of current students
- 85.7% of curriculum graduates said that preparation is/was either excellent or good.

Current students were also asked how well the curriculum prepares them for obtaining a job in their desired field. Of the respondents, 14.7% said that preparation is excellent, 45.6% said preparation is good, and 30.9% felt that preparation is fair.

When asked **what the strengths were of the program**, the most frequent responses were related to the quality of instructors and variety of classes offered. Sample comments from the surveys are listed below.

- The professors are your strengths. All of them in the Social/Behavioral Program are excellent.
- The broad selection of courses that fit in the curriculum.
- The classes teach you to broaden your horizons, and step out of one's "box" and take in the knowledge and learn to comprehend from it.
- The different elective choices. The diverse selection allows for different people to select different concentrations.
- The wide range of classes I am able to choose from is one of the strengths of the Liberal Arts-Social/Behavioral Science Option Program. Another strength is the flexibility in the times/days of the classes. One other strength is the professors and the direction they choose to take with the course for the semester.

In response to the question **"What do you feel needs to be changed or added to the Social/Behavioral Science program in order to improve the program,"** current students made the following comments:

- No changes (9)
- More explanation about graduation requirements/transfer credits (5)
- Add more Psychology courses (5)
- More internship experience/bigger outreach center (2)
- Greater accountability/sensitivity training for professors
- Change the name of the major
- More involvement from staff/faculty
- Require two semesters of a foreign language
- Behavior Health classes would be a good addition
- I think it would be beneficial to be assigned an advisor
- More help via phone
- Limit necessary courses
- Licensing
- Combine lab and lecture classes
- The department should do some case studies in Philadelphia and use the findings for classroom purpose.

Graduates of the curriculum responded to the question "What courses or topic could have been added to the Social/Behavioral Science curriculum that would have been more useful to you in performing your current job?" with the following suggestions:

- N/A (3)
- No opinion/none (2)
- I am not sure, but in generality I would like to see the following courses added: Sociology, Stats, Research and Design Methods, Immigration, Psychology, Behavioral Analysis
- More business classes or economic classes would help with improvement of sales

V. Resources

Facilities and Equipment

There are no dedicated facilities or items of equipment for the Liberal Arts curriculum options.

VI. Demand and Need for the Program

The curriculum is designed to be the basis of a liberal education, and one that provides for transfer. The College has dual admissions agreements that allow for students who graduate with an A.A. degree to be accepted to the transfer institution with the following Colleges and universities:

- Cabrini College
- Chestnut Hill College
- Cheyney University
- Eastern University
- Temple University

An agreement to articulate the Liberal Arts Social/Behavioral Sciences Option to Temple's BSW program was signed in December of 2011.

In addition, the College has dual admissions agreements that specify that all Liberal Arts options or specific Liberal Arts options will transfer. The following dual admissions agreements cover the Liberal Arts - Social/Behavioral Science Option:

- St. Joseph's University College of Professional and Liberal Studies- for transfer to Psychology or Professional and Liberal Studies.
- Holy Family University – for transfer to Psychology
- Rosemont College (all LA options) – for parallel programs, i.e. Psychology, Sociology and Political Science.

In addition, there is a program to program agreement with Universidad del Sagrado Corazon for transfer of this Option to their General Social Science degree.

Further, there is an articulation agreement with Philadelphia University's Community Scholars Program in Psychology.

Recent changes both within and outside the College led to a need for separating out Psychology majors from the more general group of Behavioral/Social Science majors. External factors included the emergence of the movement for state wide standards and articulation for specific

degrees through the Transfer Articulation Oversight Committee. In order to participate in the process, a discipline specific degree needed to be developed. In addition, the Psychology faculty had gathered both formal and informal data on student interest in a Psychology major at Community College of Philadelphia. In Spring 2009, the department completed a survey of 150 students in two hundred level Psychology classes and found that 88.7% planned to attend a four-year College and 56.8% of them were interested in majoring in Psychology. In Spring, 2008, the faculty examined the data forms of all students enrolled in Liberal Arts- Social/Behavioral Science Option curriculum to see how many students might be possible Psychology majors. Faculty classified those students who had taken two or more Psychology courses to be possible majors. Out of a total of 250 students in the curriculum, 81 students fit the criterion as possible Psychology majors. Since many of the students in that curriculum were only in their first or second semester at the College and had not yet had the opportunity to take additional Psychology courses, the number of possible majors could be considerably higher. This suggested that a specialized Psychology major would be more helpful for those students.

There was also significant informal evidence of student interest in a Psychology program. Many students in Psychology courses have expressed an interest in majoring in Psychology.

Until then, most students who are interested in Psychology had taken the Liberal Arts- Social/Behavioral Science Option because that curriculum most closely fits their needs. There are, however, several problems with this curriculum for a Psychology major. First, since it is a broad curriculum for students interested in the social sciences, it does not give the potential Psychology major enough direction. The student can easily end up taking courses that are unnecessary or are a poor match with transfer requirements. Many students, for example, fail to take important classes, such as statistics, which are required by baccalaureate programs in Psychology.

A second issue was that there is no practical way to identify students who wished to be Psychology majors. This makes mentoring and advising these students challenging. A Psychology curriculum made it possible to identify Psychology majors, so that they can be advised and mentored by full-time Psychology faculty. Research on best practices clearly shows that improved advising leads to higher student satisfaction and better retention and graduation rates.

It is anticipated that the advent of the new Psychology degree could decrease the demand for the Liberal Arts: Social and Behavioral Sciences option by as much as 25% to 35%.

VII. Operating Costs and Efficiency

Because the specialized options within the Liberal Arts programs are not separated out individually (e.g. there are no, specific courses with the Liberal Arts – Social and Behavioral Science label), it is not possible to examine the costs directly associated with these programs effectively.

VIII. Findings and Recommendations

Students are generally quite pleased with the quality of the curriculum. Specifically they note the quality of the instruction and diversity of the courses available to them. The vast majority of the students are interested in both earning their Associate's Degree (63%) and/or continuing on with their studies at another institution (88%).

Students have mixed reactions to the advising they receive. Those that indicate they have reached out to advising speak of strong relationships they have with them and praise the guidance they receive. Other students suggested that they were confused about requirements or the transfer process and that a more concerted effort to reach out to them is needed. Given the importance of transfer in the educational mission (see section II), it might be worthwhile for more data to be collected on the types of programs that students transfer into. Responses from the small numbers of curriculum graduates indicate that about half transfer into Psychology programs. Several students indicated that there was a need for a more specific Psychology curriculum; this need has already been addressed by the Division.

There seem to be, while looking at the slight decline in some academic indicators (e.g. GPA) and the student comments, a kind of bifurcation within the students enrolled in the option. There are a group of more highly aware and engaged students who find the advising and faculty to be of high quality. Although it is not possible to track these responses back to students' grades, it can be assumed from the nature of responses of those who graduated from the program, that these students are also the higher performing and more likely to graduate. There is another smaller group who feels disconnected from the College and the Option; they indicate, most often, a lack of understanding of what program they are in or what the requirements are to graduate or transfer. These students, though a smaller group, need to be better identified and educated about the Option, its requirements, and the opportunities it offers.

Recommendations

1. Utilize the materials developed by the Psychology program for the PSYC 101 class as a model for assessing the students in the Liberal Arts – Social/Behavioral Sciences program as it is a required course for all students. This process should be carried out within the 2012-2013 academic year.
2. In the next year, the Dean of Liberal Studies or an assigned proxy should convene a group of relevant faculty and staff including:
 - a. Faculty who teach courses within the Liberal Arts - Social/Behavioral Science Option,
 - b. The Department Heads for Psychology, Education, and Human Services and Social Services
 - c. Representative(s) from Academic Advising and/or Counseling.

This group needs to discuss the long term viability of this program, including such issues as the impact of the psychology major, and the unique contributions that this program could and does make to the College. The status of transfer agreements also need to be determined. Given the

current trend toward more specific programs focused on transfer, is there still a place for the Liberal Arts Options, generally, and the Social Behavioral Science Option, specifically?

3. If it is decided that there is a long-term place for this program, there needs to be more clear leadership in the program. The Division should seek out an individual who will take responsibility for the administration of the Option. Responsibilities might include such things as maintaining curricular coherence, marketing of the program (such as designing ways to let students know their options in terms of career paths and transfer opportunities), assisting with transfer and articulation requirements specific to this program, and creating an identity for the program so that students in it are more aware of and engaged with the Option. This leadership will also need to monitor the ongoing impact of the Psychology program on enrollments through tools such as the QVI. Without this leadership, it may not be possible for the Option to maintain a place at the table as CCP evolves.

APPENDICES

Survey Results – Current Students

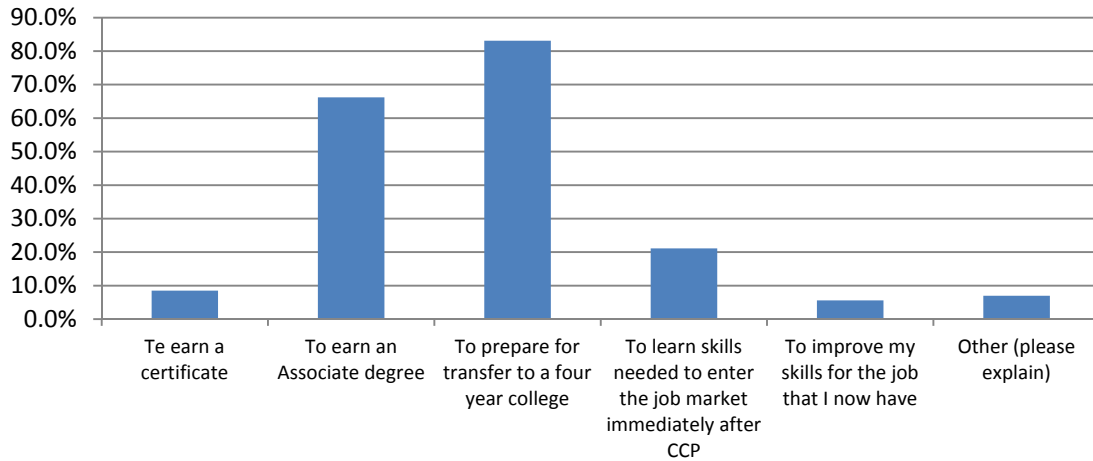
N = 71

1. When did you enter the Liberal Arts - Social/Behavioral Science Option?					
Spring 2005	Fall 2005	2005	Fall 2006	Spring 2007	2007
2	1	1	1	1	1
Fall 2008	Spring 2009	Fall 2009	Spring 2010	Summer 2010	Fall 2010
6	5	11	4	3	27
No Response					
5					

2. Are you currently attending CCP full-time or part-time?		
Answer Options	Response Percent	Response Count
Full-time	62.0%	44
Part-time	38.0%	27

3. Which of the following reasons were important to you when you enrolled in the Liberal Arts - Social/Behavioral Science Option at CCP? (Mark all that apply)		
Answer Options	Response Percent	Response Count
To earn a certificate	8.5%	6
To earn an Associate degree	66.2%	47
To prepare for transfer to a four year College	83.1%	59
To learn skills needed to enter the job market immediately after CCP	21.1%	15
To improve my skills for the job that I now have	5.6%	4
Other (please explain)	7.0%	5
Number	Other (please explain)	
1	To help others and myself.	
2	My goal is to establish and oversee a community resource center for all people. I would also like to be accepted in the Lincoln university two year masters program.	
3	I love the study of behavior.	
4	I'm interested in obtaining a four year degree in Human Services because I want to give back to my community. I'm not sure though if I want to become a social worker.	
5	I always knew I wanted to be an elementary teacher or a College professor. Unfortunately, in Fall 2009 I transferred from another College to CCP with the intention of applying and continuing with Education major, but most of my credits were not accepted including practicum courses and internship. XXXXX from Welcome Center reviewed my application and helped me to decide a program that was suitable for the number of credits that were accepted. Therefore, I agreed and decided to major in Liberal Arts & Social/Behavioral Science program.	

3. Which of the following reasons were important to you when you enrolled in the Liberal Arts - Social/Behavioral Science Option Program at CCP?

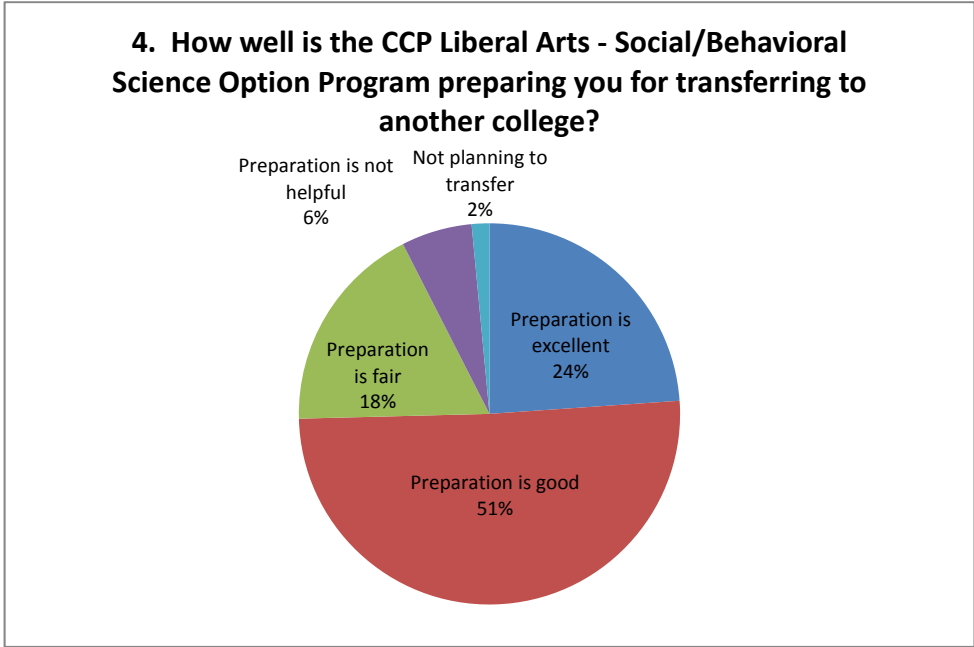


4. How well is the CCP Liberal Arts - Social/Behavioral Science Option preparing you for transferring to another College?

Answer Options	Response Percent	Response Count
Preparation is excellent	23.9%	16
Preparation is good	50.7%	34
Preparation is fair	17.9%	12
Preparation is not helpful	6.0%	4
Not planning to transfer	1.5%	1
Please explain. We would appreciate your comments on your Liberal Arts - Social/Behavioral Science Option courses as well as your other general education courses.		25
Number	Please explain. We would appreciate your comments on your Liberal Arts - Social/Behavioral Science Option courses as well as your other general education courses.	
1	I always knew I wanted to be an elementary teacher or a College professor. Unfortunately, in Fall 2009 I transferred from another College to CCP with the intention of applying and continuing with Education major, but most of my credits were not accepted including practicum courses and internship. XXXXX from Welcome Center reviewed my application and helped me to decide a program that was suitable for the number of credits that were accepted. Therefore, I agreed and decided to major in Liberal Arts & Social/Behavioral Science program.	
2	I love the study of behavior.	
3	I'm interested in obtaining a four year degree in Human Services because I want to give back to my community. I'm not sure though if I want to become a social worker.	
4	MY GOAL IS TO ESTABLISH AND OVERSEE A COMMUNITY RESOURCE CENTER FOR ALL PEOPLE. I WOULD ALSO LIKE TO BE ACCEPTED IN THE LINCOLN UNIVERSITY TWO YEAR MASTER PROGRAM.	
5	To help others and myself.	
6	I see a wide range of instructors, from the brilliant caring inspiring ones, to the ones who use a	

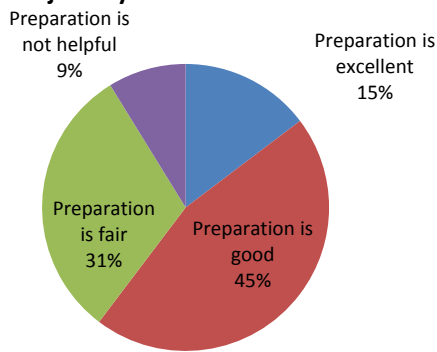
	community College classroom as their biased soap box. As an aspiring child psychologist who already works in the field and runs a mental illness support group, I know many of the basics that have come with job training. I enrolled in child psych this term to learn the basics about theoretical approaches to the genre, only to find out my prof will only teach us what she wants from her worldview. I wish there were more accountability and more preparation given to professors, who sometimes let other students who have never been in a College classroom disrupt the class, or who ask of us (who are working, busy, or may not have as much money as students at a four year) things that are inappropriate. The latest was "Why don't you have your own printer?" What? We're at community College for a reason.
7	I've been out of school for over twenty years. Working as a union carpenter. I'm preparing for my retirement and to work with young men in my union. Thus far the courses have been great at bringing me up to speed, in both the liberal arts and general education courses
8	Classes for behavioral health would be a good addition to the curriculum.
9	I attended a four year College for three years prior to CCP. I have learned more at CCP in two summer sessions and half of this fall semester than I ever have at my other school. I feel this is one of the best programs I could have joined. The professors have been consistent, the classes are challenging and provide information that I know I will use after my time is up at CCP. I am so grateful for the experience with this program at this school. It is very enjoyable and I learning a lot. I really feel if I were to have graduated from my last school I would have had no direction. CCP makes me feel prepared and confident for my next academic endeavors.
10	I am only in my first semester so I am not sure yet, but the courses seem to fit the direction I plan to go.
11	While the courses are certainly challenging enough, there is not enough advertised assistance for students seeking to transfer.
12	Many of the necessary courses are 'blanket' and are a waste of time/money. There should be more choices to tailor to specific degree sought.
13	The classes are very broad and the work is fair. The teachers work with you to help you to understand the material, so that you know what you are doing. The teachers are always asking if any of the students have questions after every discussion, and they encourage the class to ask questions and not be quiet about it.
14	Not sure.
15	Since I have no experience with a four-year College, I have no context to answer the question asked. However, the professors in the Honors psych/English courses are excellent and knowledgeable.
16	I have had some misunderstanding about required courses for this major. Upon applying for graduation, I was told I need yet another Social Science course when I have exceeded what I thought was the proper amount. I have spoken to advisors, and they eventually referred me to the individual I needed to talk to, yet it was not easy to get the answers I needed. I suggest a more detailed description of course requirements in relation to the major.
17	Many of the courses that I am taking are the transferable and help me keep up with what the four `year Colleges want. But the only problem I have is that there are not a variety of times and days that the BHHS classes are offered just about all of them are evening classes and there is no way that I can take them
18	I feel that this program is very good in that it allows me to explore other areas of interest while I study Behavioral Health topics. However, I do feel that there is more transfer guidance and curricular planning for students in the BHHS program as opposed to students of the Liberal Arts- Option program.
19	I do not know. I have not sat down with my counselor to go over my curriculum requirements yet. I am really too new in this program to comment. I would like an array of classes available @ NERC. You do not have any.
20	I have not been given any advice or information about the transfer process or what is expected of me in class to make that process easier.
21	Thus far I feel I'm getting the basic information I need to garner an awareness of what lies

	ahead in this field. I do feel that some science classes should go with a lab to get a fuller understanding such as Environmental Science.
22	Good so far. This is my first semester.
23	CCP has been nothing but discouraging, especially the entire counseling process.
24	I have had some bad professors, but I have also had excellent professors, which I have learned so many things from. I have enjoyed my College experience at CCP.
25	The Liberal Arts has done nothing to help me transfer. I am please with my classes other than that. I thought that I had to go to a transfer department for a transfer.



5. How well is the CCP Liberal Arts - Social/Behavioral Science Option Program preparing you for obtaining a job in your desired field?		
Answer Options	Response Percent	Response Count
Preparation is excellent	14.7%	10
Preparation is good	45.6%	31
Preparation is fair	30.9%	21
Preparation is not helpful	8.8%	6
Please explain. We would appreciate your comments on your Liberal Arts - Social/Behavioral Science Option courses as well as your other general education courses.		14
Number	Please explain. We would appreciate your comments on your Liberal Arts - Social/Behavioral Science Option courses as well as your other general education courses.	
1	I did not feel like my interests were really explored and I was given info I had already found on the BLS website.	
2	I am not far enough to know what I don't know. I have never had a job in this field.	
3	This program gave student a wide knowledge academically in many fields, especially in social science study even it is under Liberal Art. Personally, I am planning in transfer.	
4	We learn much of these in on the job training.	
5	N/A I am not looking for a job right now.	
6	I am only in my first semester so I am not sure yet, but the courses seem to fit the direction I plan to go.	
7	While I am happy to have been able to take several courses in the fields of Sociology, Psychology & Anthropology- I still feel unprepared to enter the field of Psychology. I think this program should concentrate more on the specific field and its components, and assistance should be provided regarding internships to gain experience with regard to their particular field of study.	
8	The teachers encourage note taking, question asking, and open responses to the class out loud.	
9	Again, no knowledge or experience in this field so I have nothing to compare it with.	
10	There should be more workshops catered to those students who wish to transfer to a four year institutions, as well as work study programs that enable students to be better prepared for the workforce upon graduation	
11	Students in the certificate or BHHS major program seem to gain more experience to better prepare them for entering into the field immediately.	
12	I think there should be more night classes available as I am a psych major and the majority of the classes are held in the morning.	
13	I have not inquired about this, thus far.	
14	Some of the professors did not stand up to my standard. They too much work and talk to you like your low-lass.	

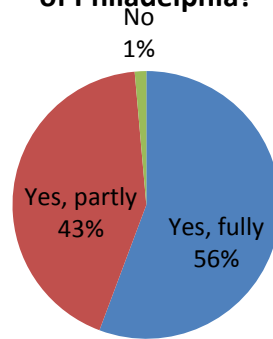
5. How well is the CCP Liberal Arts - Social/Behavioral Science Option Program preparing you for obtaining a job in your desired field?



6. Do you think you are accomplishing the educational objectives that you set for yourself at Community College of Philadelphia?

Answer Options	Response Percent	Response Count
Yes, fully	55.7%	39
Yes, partly	42.9%	30
No	1.4%	1
Please comment		12
Number	Please comment	
1	I am struggling with health issues mentally and this semester physically so my focus is somewhat marred.	
2	I have challenging classes and I am able to maintain a 4.0.	
3	Some unnecessary courses.	
4	I have been going through a lot as far as my personal life with my 2 kids, child care and court issues with their father. So it's been a lot harder for me to keep up and excel how I know I can and am still trying to do.	
5	just returning to school	
6	Because I am remaining consistent in taking my courses.	
7	I am ready to enter a four year College because of the courses I took. Also by obtaining an Associate's degree I hope I can get a job.	
8	I have been able to select classes that were tailored around my life and that helped me make the most of a full-time education, family and work.	
9	I'm eager to finish so that I can graduate and start my 4 year degree program in Human Services.	
10	I challenge myself with course selections. The straight BHHS curriculum was too soft for my taste; I needed more challenging work; natural sciences Psychology, Philosophy	
11	Hard to accomplish any goals with such discouragement.	
12	Yes MY objectives.	

6. Do you think you are accomplishing the educational objectives that you set for yourself at Community College of Philadelphia?



7. What do you think are the strengths of the Liberal Arts - Social/Behavioral Science Option Program?	
Number	Response Text
1	Creating a well round program that touches all the aspects of the major.
2	The teachers.
3	The Psychology classes are exceptional.
4	The broad selection of courses that fix in the curriculum.
5	They're doing a good job
6	The strengths of the program are the professors and their willingness to share their experience.
7	I have encountered very competent teaching staff.
8	The wide range of classes I am able to choose from is one of the strengths of the Liberal Arts-Social Behavioral/Science Option Program. Strength is the flexibility in the times/days of the classes. One other strength is the professors and the direction they choose to take with the course for the semester.
9	They have a lot of social behavior classes.
10	the courses being offered
11	I hear great things about the Sociology instructors.
12	Flexibility
13	I think the strengths are the materials covered in the sociological subjects (psych, anthro, soc)
14	That it is available at all. Otherwise I wouldn't be a CCP student.
15	Thant it relates to Psychology a lot so it will be easy to transfer to a 4 year university to major in Psychology
16	The classes teach you to broaden your horizons, and step out of one's "box" and take in the knowledge and learn to comprehend from it.
17	helping people
18	n/a at this time
19	Not sure.
20	The different elective choices. The diverse selection allows for different people to select different concentrations.
21	no comments
22	2 of the best professors XXXXX and XXXXX
23	My strength is I learn about different subjects and I'm gaining knowledge from each one.
24	The professors.

25	A variety of courses that other College's are looking for.
26	The strength of this program is that it doesn't lock you into one specific field of study. A student can take other enrichment courses.
27	Good teachers
28	N/A - Semester has just begun.
29	Good amount of psych classes, needs more though
30	I think the heavy concentration in the Social sciences that are required prepares students for what's in store.
31	The professors of the department are well prepared and willing to get students ready to join their disciplines.
32	The program is very organized.
33	I was able to fulfill all requirements and still take the courses I was most interested in. (Psych. & bio-chem.)
34	n/a
35	The professors are your strengths. All of them in the Social/Behavioral Program are excellent.
36	To be honest, The only person who helped me was XXXXX. I was just taking classes, not even knowing if they were the right classes, until I met Ms. XXXXX, I had no idea what I was doing.

8. What do you think needs to be changed or added to the Liberal Arts - Social/Behavioral Science Option Program in order to improve the program?	
Number	Response Text
1	None that I can think of, since I have just started taking the courses. Ask me later.
2	Again I don't know...
3	I think the name of the major should be changed. I think it is very broad and when I tell people what I have a degree in; they don't know what I'm talking about.
4	I would like to see a bigger outreach center either on campus or somewhere the school could recommend and work out with hospitals or outreach to volunteer and receive experience.
5	It is too broad that students might not be able to know what to choose if they did not work closely with counselor.
6	Greater accountability and sensitivity training for your professors. Somehow get them to be understanding of students who attend community College, but also hold students accountable enough as adults to learn information at a collegiate level. Many of the classes I need for work (such as Spanish and child psych) have been dumbed down for students who can't handle being in a College classroom. I've seen other professors deal with this wonderfully, but right now I'm pretty disappointed with the level of education I've paid for this semester.
7	Nothing should change
8	I think there should be more classes for this major like drug addiction, child abuse. I also think there should be more internships
9	Behavioral Health classes would be a good addition.
10	I think it would be beneficial to be assigned an advisor.
11	more Psychology courses
12	The program needs more involvement from staff and faculty. The program is not well known.
13	More help via phone. It's hard to get in touch with them.
14	Clearer direction for new students entering the program on which classes are needed to complete a degree.
15	previously responded
16	Limit necessary courses.
17	add more Psychology classes
18	I feel that everything is fair and acceptable, and if one was to miss out then it's a lot harder-coming from my own experience.

19	more program
20	no comments at this time
21	Licensing.
22	More explanation. The counselors do not seem like they are very knowledgeable about what is needed to transfer to specific schools.
23	no suggestion
24	I think having to take Math is stupid...I'm not going to use it in my everyday life
25	Nothing
26	More varied times for the BHHS courses
27	A bit more structure for transfer students and more psyche classes.
28	Nothing
29	Hold more events for this program that will help guide the students to meet their goals.
30	N/A - Semester has just begun.
31	more Psychology classes
32	I strongly feel that if there is a 3 hour class in the social sciences, 1.5 hours should be spent in the lab. Why have the student take a separate lab class which is not always at a convenient time to attend.
33	The department should do some case studies in Philadelphia, and use the findings for classroom purpose. I do know that a lot of the books have some pieces from Philadelphia.
34	Require two semesters of a foreign language; Almost all liberal arts Colleges want it, so we might as well get it done at CCP
35	more transfer info for Psychology degree seeking students
36	I can't really say. I am happy with the program.
37	Depending on the degree, I feel the department should have a plan set forth in order for new student to know what they are doing. I just started taking classes I didn't know if I needed them, I just liked them. I think for each department there should be a new student professional development so we know how to make the best out of our education.

9. Are you satisfied with the instruction you are receiving?		
Answer Options	Response Percent	Response Count
Yes	86.4%	57
No	13.6%	9

9a. If no, why not?	
Number	Response Text
1	My answer was yes, but the instructions are excellent.
2	See all of the above.
3	The counselors are not very helping they all tell you something different.
4	I have a teacher this semester that is not properly communicating with us. She just graded one paper since the beginning of school, which was one month ago. She doesn't respond to email or anything. The entire class is upset about this issue.
5	I am thus this semester. Last semester had a very poor experience with my Sociology instructor which has been addressed.
6	Counselors could be a little more helpful in four College transitions and also in course selection.
7	I was looking for a better support system in getting help with deciding on if I am eligible to graduate and if I am on the right role and the advising I got wasn't much help.
8	I have not received any instruction
9	N/A - Semester has just begun.
10	Wham instruction?

10. Are you satisfied with the support you are receiving from the program faculty?		
Answer Options	Response Percent	Response Count
Yes	66.1%	41
No	33.9%	21

10a. If yes, please give an example of the type of support you are receiving.	
Number	Response Text
1	My instructors are available at specific times to answer questions and help me by allowing me to explore my own interpretations of the work.
2	When I have problems understand something I email the teacher and a get an answer back almost immediately.
3	Teachers are understanding of outside interference and make themselves pretty available.
4	The visit to Penn Museum for writing the assignment for Art 103 The multiple reading list from English 102 class some videos played in Anth 112 class
5	Being able to contact teachers via email has been very helpful. Also, all of the teachers I have had so far (10 teachers) save for one, have been pleasant and seem eager to answer any question I might have.
6	Last year, after a stint in the hospital, all of my professors were very accommodating.
7	they understand my schedule
8	I have met with a program head Mr. xxxx on a few occasions and the counseling department
9	The counseling staff has been helpful.
10	Everyone is extremely helpful. I have talked to a few different people in the program and everyone is always willing to help to make sure my concerns are taken care of.
11	Dual Admissions Program
12	n/a
13	Any question I have is answered in a timely manner
14	Until this teacher, I was satisfied. I especially love the fact that I have the greatest advisor.
15	The advisors have been great! Those that were less informed have informed me and those that were I could not have gone forward without them. I intend to continue to use their services!
16	when I did not know what to take someone help me get all of my classes in order so that I would not be taking classes that I did not need and so that I can graduate
17	no feedback at this time
18	I have been given the opportunity to participate in educating others about Family Violence for the Awareness this month
19	By being able to transfer credits to a four year College
20	When writing papers, the professors take their time to advise me of any strengths or weaknesses that need to be addressed.
21	If the answer I need can't be answered by one person, they direct me to another.
22	Many professors and counselors gave me advice on what major I should pursue based on my situation and goals.
23	Life happens! Most of the staff in this department really seems to understand that and they work with the students to ensure their success.
24	There is a program???
25	N/A - Semester has just begun.
26	They provide extra help outside of class.
27	Able to ask questions when needed and tutoring if needed
28	I have received no support
29	The teachers are supportive. However, I feel some of the counselors need to be more attentive, caring to students' needs.

30	I have one Professor who is my mentor: he guides me on what to do to become successful in my major.
31	I am receiving very good advising.
32	tutoring, inspirational, formal and informal academic advising
33	Great Advising (XXXXX), He is very resourceful
34	They are personable.
35	Well, I can recall meeting with three different faculty members once since fall 2009 to present and the faculty members were very helpful and knowledgeable in setting me for success.
36	I have only really dealt with one counselor to guide me through the process of signing up for my necessary classes, and I have been very pleased.
37	I received support only from XXXXX.

10b. If no, what type of support are you looking for and are not receiving?	
Number	Response Text
1	Better care from counselors and staff. More updated information.
2	I haven't needed support yet but I'm sure I will!
3	I seek interaction (in class and online) from the teacher. I expect work to be graded in a timely fashion, just as they expect to have work turned into them in the same fashion.
4	To be able to do make up assignments from missed class work so that I know what to expect when I return to class, and what has been going on in the class. It would be reasonable to be graded fairly for those assignments; especially if it is from serious issues at home that I had to put up with and get myself out of; especially if I have the paperwork to prove it. But yes I do understand the penalties of not being in class and what could happen to financial aid and so on.
5	I just about it not yet get help or anything
6	Help in my transfer into Temple's Social Work program. I was told I had to take this curriculum, but now I kind of feel I am left in the dark. I am supposed to be finished here in December, but I'm not quite sure what I have to do next in order to get to Temple, or what classes I need to choose there.
7	I was looking for a better support system in getting help with deciding on if I am eligible to graduate and if I am on the right role and the advising I got wasn't much help.
8	I want to know if I'm taking the correct classes for Psychology at temple
9	More support to help guide me towards meeting my goal of graduation and transferring to a 4 yr university.
10	I don't really know much about the program and no one has reached out to me to explain it in detail
11	N/A - Semester has just begun.
12	How to go about looking into a four year College and what I need to do to prepare for that both in class and with paperwork
13	I am not receiving any help from the program faculty.
14	Counseling support is awful. Never want to help, always steering you in a bad direction, VERY discouraging.
15	I have three classes left, but when I came to the College for the first time I had no idea what was going on. Even the counseling department doesn't explain why they are assigning you the classes they assigned you. That why I started picking my own classes.

11. What is your current job title and what type of work you do in your primary job?	
Number	Response Text
1	Unemployed
2	Clerk - Finance
3	I am not working. I am
4	I work with clients that are mentally disabled in their homes and I work with children in a classroom setting.
5	Cashier- Kmart
6	unemployed
7	Crisis intervention counselor. I provide safety and options counseling to families experiencing domestic violence.
8	I am a union carpenter, have been doing that for over twenty years.
9	Manager!
10	Gastroenterology office staff- scheduling
11	Working at a family business
12	My current job title is a hostess.
13	Cake Decorator
14	Stay at home mom/student
15	assistant property manager of 2 high rise office buildings.
16	Administrative Assistant for CCP. I do research for the Student Success Initiatives program and other office work.
17	just student
18	Current, accounting clerk-temporarily but juvenile court clerk, by choice, at time of enrollment.
19	None I am a full time student
20	i am currently unemployed and looking for a job. I usually do retail and/or grocery retail. But I am looking for something other than retail and grocery like clerical work because I am going for Psychology and there are clerical positions in the field, and that are in the city that interest me.
21	work study
22	Patient services in major hospital setting
23	Residential Advisor
24	n/a
25	customer service
26	Resident Assistant
27	I work for the Philadelphia Eagles as an Event Staff...I greet the fans as they enter the stadium and I wish them a safe drive home when they leave
28	I'm working with children in urban schools by helping them to have a better future.
29	Service Analyst- process health coverage for small new business groups with the NJ, DE, & PA areas
30	I am coming from a sales/business background
31	Restaurant Server, Artistic Model
32	I work for the City in the Health Dept in the fiscal unit.
33	Admin. Asst.
34	I am a Med. Technician - I give medication to people, Mental health Support Counselor
35	Attendance Coordinator
36	I am a file clerk and I work part-time. I file, scan, copy, and maintain a clean and neat file room.
37	Full time Student
38	Administrative Assistant

39	I am currently employed with Olive Garden Italian Restaurant.
40	Administrative Assistant - Basically do secretarial work.
41	School District of Philadelphia/ Teacher's Assistand Head Start

12. Is this job directly related to the field of Social/Behavioral Science?		
Answer Options	Response Percent	Response Count
Yes	27.3%	12
No	72.7%	32

13. Was your enrollment in the Liberal Arts - Social/Behavioral Science Option Program helpful to you in getting this job?		
Answer Options	Response Percent	Response Count
Yes	13.6%	6
No	86.4%	38

14. Were you employed in this job prior to enrolling in the Liberal Arts - Social/Behavioral Science Option Program at CCP?		
Answer Options	Response Percent	Response Count
Yes	51.2%	22
No	48.8%	21

15. If yes, have your experiences in the Liberal Arts - Social/Behavioral Science Option Program at CCP helped you do your job better?		
Answer Options	Response Percent	Response Count
Yes	44.1%	15
No	55.9%	19

16. How could your Community College of Philadelphia education be more useful to you in performing your job?	
Number	Response Text
1	If you guys held more visible practical training workshops or gave us the opportunity to learn in the field...
2	I don't think the CCP program could help with the hosting job I have. My job is pretty basic!
3	N/A
4	dealing with tenants and employees on a more professional basis.
5	When I get a degree I will be able to move up in the higher education field.
6	N/A
7	I could use the knowledge I have and had learned to use, in the field of Psychology after I receive my Degree and Certification.
8	will enable me to change career paths
9	Take the time to listen and give feed backs.
10	By guiding us what jobs accept liberal arts
11	I hope to learn the skills I need to get a job in the field
12	Basically, I have applied my life experience skills along with what I'm learning now and have incorporated a better understanding of how to better work with people from all backgrounds.
13	It enriches my social knowledge; thereby, being more equipped to work with diverse cultures.
14	My education is very useful to my job right now. Upper level paralegal courses will benefit me more in my daily duties as a file clerk.

15	Useful for transfer only
16	I have learned much more than book education in the classrooms of CCP. I have learned life skills that I should of learned years ago, had I went to College right after high school. But its like they say, "it's never too late to learn."

17. How many hours per week on average do you work in this job?	
Number	Response Text
1	40
2	0
3	30
4	20
5	20
6	30
7	40
8	40
9	35
10	25
11	20-40
12	45
13	30
14	40
15	40
16	40 hours
17	24
18	20
19	30
20	37.5
21	40
22	30
23	7
24	7.5
25	35-37.5
26	Forty hours.
27	88 hours
28	12
29	N/A
30	40
31	It varies from time to time, but I currently work 25+ hours.
32	40
33	40

18. If you are not employed now, is this employment status by your choice?		
Answer Options	Response Percent	Response Count
Yes	48.6%	17
No	51.4%	18

Survey Results – Graduates

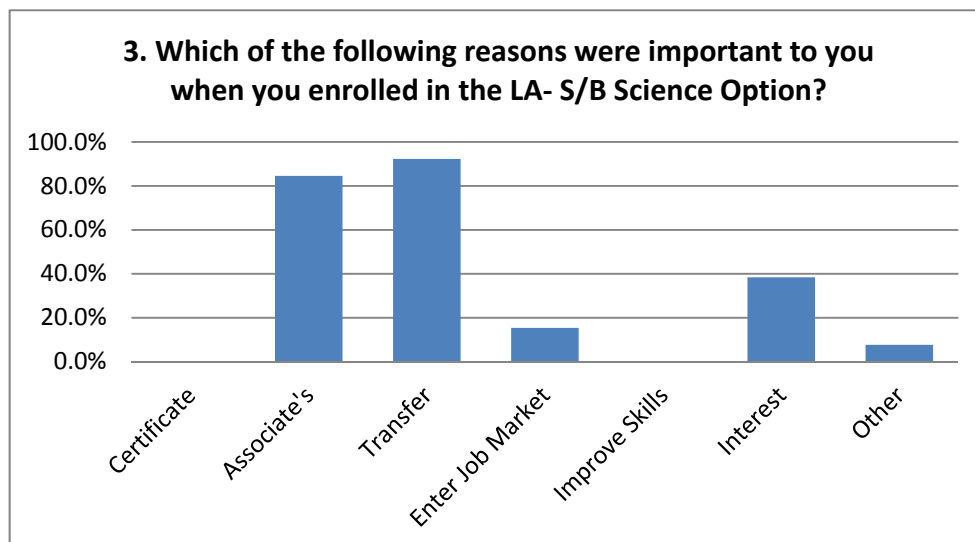
N = 13

1. When did you enter the Liberal Arts - Social/Behavioral Science Option Program?				
Spring 2004	Fall 2004	2004	Fall 2005	Fall 2006
2	1	1	1	1
Spring 2007	Fall 2007	Fall 2008	No Response	
1	1	1	3	

2. When did you graduate from the Liberal Arts - Social/Behavioral Science Option Program?				
Spring 2006	Summer 2006	Fall 2006	Spring 2009	Fall 2009
1	1	1	2	2
Spring 2010	Summer 2010	No Response		
4	1	1		

3. Which of the following reasons were important to you when you enrolled in the Liberal Arts - Social/Behavioral Science Program at CCP? (Mark all that apply)		
Answer Options	Response Percent*	Response Count
To earn a certificate	0.0%	0
To earn an Associate degree	84.6%	11
To prepare for transfer to a four year College/university	92.3%	12
To learn skills needed to enter the job market immediately after CCP	15.4%	2
To improve my skills for the job that I now have	0.0%	0
To take courses that interested me.	38.5%	5
Other (please specify)	7.7%	1
Number	Other (please specify)	
1	To meet xxxx and xxxx	

*In each case, the percent is based on 13 total respondents. Non-responders, while not listed, are still counted in the total for the percentage. In some cases, more than one response was valid, so the total response count and tot response percent may add to over 100%.

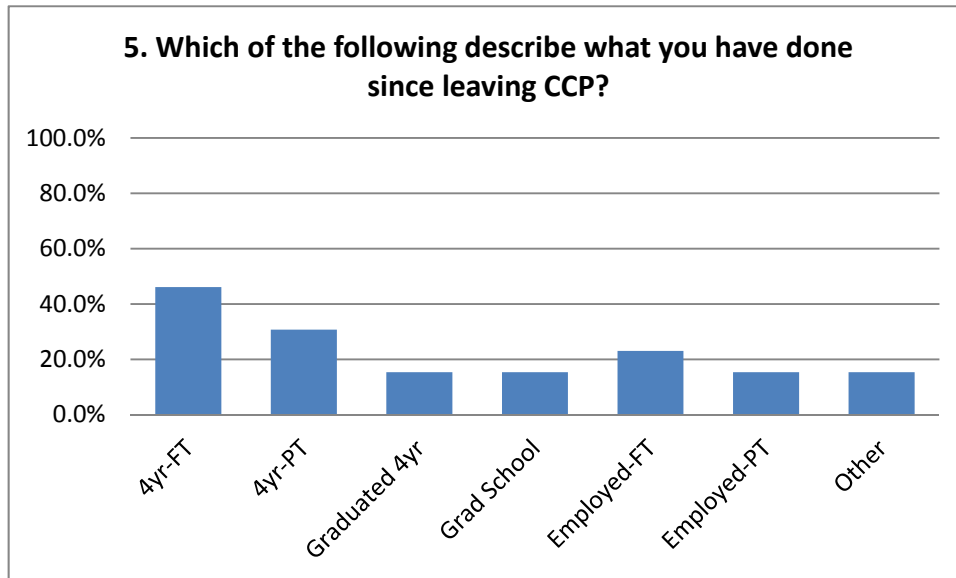


4. Did you accomplish the educational objectives that you set for yourself at Community College of Philadelphia?

Answer Options	Response Percent	Response Count
Yes, fully	84.6%	11
Yes, partly	15.4%	2
No	0.0%	0
Comments		
1	Got my associate's and got into a 4 year College afterwards.	
2	I haven't gotten the creative writing certificate.	
3	I graduated with a GPA of 3.8 or higher.	
4	I earned my degree and transferred over to a 4yr university. And I had an interest in Psychology and was able to take all of those classes.	

5. Which of the following describe what you have done since leaving CCP? (Mark all that apply)

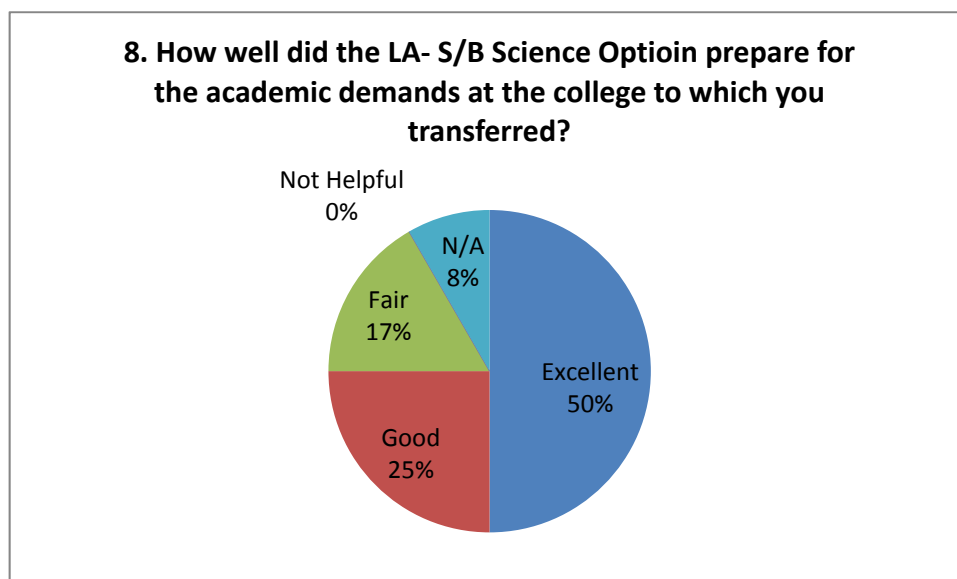
Answer Options	Response Percent	Response Count
Attended a four-year College/university full time	46.2%	6
Attended a four-year College/university part time	30.8%	4
Graduated from a four-year College/university	15.4%	2
Attended a graduate school	15.4%	2
Secured full time employment	23.1%	3
Secured part time employment	15.4%	2
Other (Please explain)	15.4%	2
Number	Other (please specify)	
1	Still attending Temple University, main campus	
2	Re-enroll at CCP taking a certificate program	



6. Name of most recently attended College, date started, major:	
Number	Response Text
1	Arcadia University
2	Philadelphia College of Osteopathic Medicine, June 2010, School Psychology
3	Art Institute of Pittsburg, March 2009, Web Design and Multimedia
4	Temple University, Fall 2010, History
5	Chestnut Hill, January 2010, Human Services
6	LaSalle University, September 2010, Psychology
7	Temple University, Fall 2010, English and Sociology
8	Temple University, July 2009, Social Work
9	Temple University, August 2009, Psychology
10	Temple University, Spring 2010, Psychology
11	Temple University, Social Work
12	Temple University, Fall 2008, Psychology and Women Studies

7. Present enrollment status at the College listed in Question 6		
Answer Options	Response Percent	Response Count
Still attending full time	46.2%	6
Still attending part time	38.5%	5
Stopped attending before graduating	0.0%	0
Graduated	7.7%	1
Number	If graduated, what is your degree and date of graduation?	
1	Social Work	

8. If you transferred to another College, how well did the Liberal Arts - Social/Behavioral Science Program prepare for the academic demands at the College to which you transferred?		
Answer Options	Response Percent	Response Count
Preparation was excellent	46.2%	6
Preparation was good	23.1%	3
Preparation was fair	15.4%	2
Preparation was not helpful	0.0%	0
Number	Please explain. We would appreciate your comments on your Liberal Arts - Social/Behavioral Science courses as well as your other general education courses.	
1	Have not processed my transfer yet, will do so by next spring.	
2	As the field was not the same, only the general classes transferred.	
3	Prepared on all fronts except Chicago citation. More prep on citation would have been nice.	
4	I have no comments- sorry.	
5	Comparing the classes I am now taking at Temple, they are relatively easier than classes I have taken at CCP. In other words, CCP was more of a challenge academically.	
6	I was in dual admissions program. A semester before I graduated I simply filled out some paperwork and was then contacted by Temple to set up a date to enroll in my classes. Very easy and simple.	



9. Were you satisfied with the instruction you received in the Liberal Arts - Social/Behavioral Science program?		
Answer Options	Response Percent	Response Count
Yes	100.0%	13
No	0.0%	0

10. Were you satisfied with the support you received from the program faculty?		
Answer Options	Response Percent	Response Count
Yes	100.0%	13
No	0.0%	0
Number	If yes, please give an example of the type of support you received from the program faculty.	
1	Help in taking the right classes to finish up with my degree.	
2	My transfer classes are excellent; the university took most of my classes.	
3	Class's orientation towards the requirements for my major.	
4	I was very happy with the counselor.	
5	All of my advisors helped me with choosing classes that would transfer over to Temple.	
6	ACT 101, good advising from all my professors, XXXXX, XXXXX, XXXXX, XXXXX, XXXXX, XXXXX, XXXXX, XXXXX, and the list continues.	
7	When I needed to choose my last two classes, I needed assistance with my choice. The director of the program was more than willing to assist me and recommended women's studies, which was an excellent class.	
8	Open door policy and email replies.	
9	Time management and paper writing/research.	
10	One of my classes was "U" or unknown for the grade, the professor fix the problem ASAP.	
11	The out of office support in form of emails and text messages were very useful.	
12	Planning to transfer to a 4 yr. College (dual-dual).	

11. What do you think are the strengths of the CCP Liberal Arts-Social/Behavioral Science Option Program?	
Number	Strengths
1	Teachers, courses, skills
2	I think it prepares me for the major I intend to pursue in the 4 yr College of my choice.
3	The staff and student support.
4	The ability to be able to transfer into any other College program with enough knowledge.
5	Again I have no opinion- sorry.
6	For those who are interested in a career in the social services field, this curriculum was excellent and enjoyable. All my classes and professors were amazing. I wish CCP was a four year College.
7	Having Professor XXXXX.
8	The courses are informative, and prepare you for coursework at other universities.
9	The teachers.
10	Smaller classes.

12. What do you think needs to be change or added to the Liberal Arts-Social/Behavioral Science Option Program in order to improve the program?	
Number	Changes/Additions
1	A few more courses in the Psychology department might help because I still have a lot more to cover in the 4yr program
2	Make sure to explain to students that BHHS classes and psych classes are not the same thing.
3	More time focus on research/writing skills, formatting.
4	No opinion- sorry.
5	Nothing.
6	None.
7	The financial aid office is terrible.
8	A Psychology major (to declare Psychology as an option as a major).

13. If you transferred to another College or university, did your transfer institution accept your Liberal Arts - Social/Behavioral Science courses?		
Answer Options	Response Percent	Response Count
Yes, all of them	61.5%	8
Yes, some of them	30.8%	4
None of them	0.0%	0
Number	Please list the courses that did not transfer.	
1	The core psych classes.	
2	But...Temple is making me take two general elective which I don't need, ugg!	
3	Not sure but all of my credits were accepted except 9.	
4	Don't remember but most of my courses were accepted. I transfer 72 and more than 60 was accepted.	

14. If you transferred to another College/university, did your transfer institution accept your non-Liberal Arts - Social/Behavioral Science courses?		
Answer Options	Response Percent	Response Count
Yes, all of them	46.2%	6
Yes, some of them	30.8%	4
None of them	0.0%	0
Number	Please list the courses that did not transfer.	
1	Unsure.	
2	English 098.	
3	Not sure but all my credits were accepted except 9.	

15. What is your current job title and what type of work do you do in your primary job?	
Number	Job
1	Therapeutic Staff Support: Provide wrap around services to children with autism in the school or home and community.
2	Teller: I work in a bank accepting deposits and cashing checks.
3	Furniture Specialist: In charge of furniture department, dealing with sales and customers along with co-workers.
4	Senior Timekeeper: I do payroll for the nursing department at a hospital.
5	Consultant: Assist low-income applicants with health insurance options and enrollment.
6	Customer Service, floor manager, Sports Favorites: I am in retail, so I handling sports novelty and clothing memorabilia.
7	Program assistant: Case management, orientation, paperwork, assist clients with obtaining GED and employment.
8	Clerk of Court: All paperwork for defendants at the Criminal Justice Center.
9	MHT: Work at a Psyc. Unit.

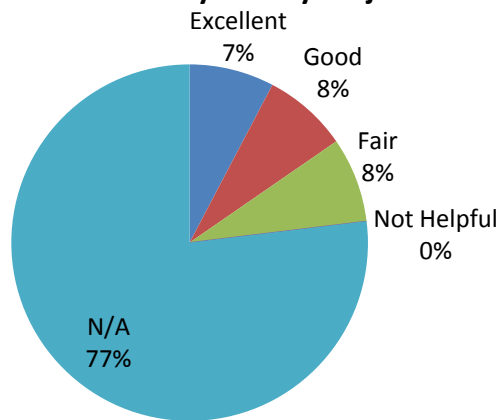
16. Is this job directly related to the field of Social/Behavioral Science?		
Answer Options	Response Percent	Response Count
Yes	30.8%	4
No	38.5%	5

17. Was your enrollment in the Liberal Arts - Social/Behavioral Science Program helpful to you in getting this job?		
Answer Options	Response Percent	Response Count
Yes	15.4%	2
No	53.8%	7
Number	If your enrollment in the Liberal Arts-Social/Behavioral Science Option Program was "not" helpful to you in getting this job please list the reasons below.	
1	Had job before school.	
2	I would've needed at least a bachelor's degree which I now have.	
3	I had this when I was a senior in high school.	
4	Position was obtained prior to choosing major.	
5	My job was obtained before I was in the program.	
6	Had the job prior to getting degree.	
7	I got this job before I graduated.	
8	Also needed a bachelor's.	

18. Were you employed in this job prior to enrolling in the Liberal Arts - Social/Behavioral Science Program at CCP?		
Answer Options	Response Percent	Response Count
Yes	38.5%	5
No	30.8%	4

18a. If no, how well did the Liberal Arts - Social/Behavioral Science program prepare you for your job?		
Answer Options	Response Percent	Response Count
Preparation was excellent	7.7%	1
Preparation was good	7.7%	1
Preparation was fair	7.7%	1
Preparation was not helpful	0.0%	0
Number	Please explain. We would appreciate your comments on your Liberal Arts - Social/Behavioral Science courses as well as your other general education courses.	
1	I always had people skills that always pushed me, but going to school for whatever course made my coworkers see me as a genius.	

18a. How well did the LA-B/S Science Option prepare you for your job?



18b. If yes, did completion of the Liberal Arts - Social/Behavioral Science Program at CCP help you do your job better?

Answer Options	Response Percent	Response Count
Yes	15.4%	2
No	30.8%	4

19. What courses or topics could have been added to the Liberal Arts - Social/Behavioral Science curriculum that would have been more useful to you in performing your current job?

Number	Courses
1	I have no opinion- sorry.
2	N/A
3	N/A
4	None.
5	I am not sure, but in generality I would like to see the following courses added: Sociology, Stats, Research and Design Methods, Immigration, Psychology, Behavioral Analysis.
6	N/A, the job has nothing to do with the course.
7	More business classes or economics classes would help with improvement of sales.

20. How many hours per week on average do you work in this job?

Number	Hours
1	18
2	40
3	25
4	24
5	27.5
6	40
7	40
8	24
9	40

20. If you are not employed now, is this employment status by your choice?

Answer Options	Response Percent	Response Count
Yes	30.8%	4
No	15.4%	2

Survey Results – Former Students

N = 3

1. When did you enter the Liberal Arts - Social/Behavioral Science Option Program at CCP?			
2002	Fall 2009		
1	2		

2. When did you leave the Liberal Arts - Social/Behavioral Science Option Program at CCP?			
2006	Summer 2009	Spring 2010	
1	1	1	

3. Which of the following reasons were important to you when you enrolled in the Liberal Arts - Social/Behavioral Science Option at CCP? (Mark all that apply)		
Answer Options	Response Percent	Response Count
To earn a certificate	0.0%	0
To earn an Associate degree	100.0%	3
To prepare for transfer to a four year College	66.7%	2
To learn skills needed to enter the job market immediately after CCP	33.3%	1
To improve my skills for the job that I now have	0.0%	0
Other (please specify)	0.0%	0

4. What factors led you to leave the Liberal Arts - Social/Behavioral Science Option before completing it? (Check as many as appropriate)		
Answer Options	Response Percent	Response Count
I learned skills that I wanted to know	0.0%	0
Conflict with work schedule	0.0%	0
Conflict with family responsibilities	33.3%	1
Transferred to another College	33.3%	1
Financial reasons	0.0%	0
Problems with Financial Aid	0.0%	0
Personal reasons/illness	33.3%	1
Academic difficulties	0.0%	0
Courses that I needed were not offered when I needed them	0.0%	0
Courses were not required at transfer institution	0.0%	0
Did not like the program	0.0%	0
No longer interested in the field	0.0%	0
Changed my major	33.3%	1
Other (please specify)	0.0%	0

5. Which of the following describe what you have done since leaving CCP? (Mark all that apply)		
Answer Options	Response Percent	Response Count
Secured full time employment	33.3%	1
Secured part time employment	0.0%	0
Attended another two-year College part-time	0.0%	0
Attended another two-year College full-time	0.0%	0
Attended another four-year College full-time	66.7%	2
Attended another four-year College part-time	0.0%	0
Graduated from a four-year College	0.0%	0
Attended a graduate school	0.0%	0
Other	0.0%	0

6. What do you feel are the strengths if the Liberal Arts - Social/Behavioral Science Option?	
Number	Response Text
1	The selection of courses. The teachers.
2	I really enjoyed the program and I'm looking forward to returning to the program.
3	The strengths are the amount of credits and types of courses they tell you that are required to complete the program. I mean all majors have a required list but I found that feature most useful and well-guided for me.

7. Were you satisfied with the instruction you received?		
Answer Options	Response Percent	Response Count
Yes	100.0%	3
No	0.0%	0

8. Were you satisfied with the support you received from the program faculty?		
Answer Options	Response Percent	Response Count
Yes	100.0%	3
No	0.0%	0

8a. If yes, please give an example of the type of support you received.	
Number	Response Text
1	Professors of the subjects in the program are supportive because they are experienced and gave motivation to pursue my major they also told me what I was going to expect too.
2	Great support from teachers, such as Pro. Perkins. She would extend herself to help myself and others, sometimes before or after class.
3	The instructors are very helpful.

8b. If no, what type of support were you looking for and did not receive?	
Number	Response Text

9. What do you feel needs to be changed or added to the Liberal Arts - Social/Behavioral Science Option in order to improve the program?	
--	--

Number	Response Text
1	I'm not sure because I did not fully complete the program, so I wouldn't know. When I was in the program everything seemed fine at the time, I'm sure there can be improvement in some areas but I am not knowledgeable in what should be done.
2	More programs are often better.

***Culture, Science and Technology
Second Audit Follow-up Report***

Submitted by:

Laura Davidson

Curriculum Coordinator, Culture Science and Technology Program

Francesca Di Rosa

Coordinator, Mathematics, Science and Health Careers Division

Mary Anne Celenza

Dean, Mathematics, Science and Health Careers Division

August 30, 2012

INTRODUCTION

The Culture, Science and Technology (CST) curriculum evolved out of the need to restructure the former General/Liberal Studies/ Interest Code curricula to ultimately provide a more coherent and structured pathway for students transitioning into a Health Career, Science, and/or Technology-related Program, at the College or at a transfer institution. The 2011 audit of the Culture, Science and Technology (CST) Curriculum documented the strengths and weaknesses of the program as follows:

Strengths

- The program has a diverse student population
- Enrollment in the program is increasing.
- The program's intentional flexibility serves students who successfully transfer into select programs in health careers, science, engineering, and technology either at CCP or at a four-year institution.
- A large percentage of current CST students are in good academic standing and almost three-fourths of the students in the curriculum successfully move beyond the developmental English level by the accumulation of 18 credits.
- The Curriculum Coordinator has initiated varied strategies to enhance communication to students.
- The CST program provides access to students who are either not yet ready to enter another College program or who are waiting for the next admissions cycle for a select program.
- The majority of the students who have completed the program and responded to the graduate survey or to the survey sent out for the purposes of the audit indicated that their preparation for transfer was either excellent or good.

Weaknesses

- From 2005 to 2009, the program has had a very low graduation rate that is on average, approximately 3.3% on average, lower than that of the College rate overall.
- A higher proportion of CST students are unsuccessful in achieving their goals in comparison with the College population in general.
- Some students perceive that the program lacks coherence. This may also prompt their concern about needing more advising and information about the program.
- There is a general lack of knowledge among students about the existence of the availability of the CST Curriculum Coordinator.

- About a half of the current students who responded to the survey indicated that their program preparation was preparing them well for the future.
- The program may not be meeting the educational and career goals of a large number of students in the program. This difficulty in meeting students needs has several causes: 1) the very large number of students in the program, 2) the program is not located within a department and thus has no dedicated program faculty, 3) the fact that the program includes students interested in four broad areas of study: health care, mathematics, science, and technology, and 4) the fact that many of the students cannot meet their goals due to the limited number of spaces in the health career programs and/or due to academic weaknesses.

The program has been revised over the years to provide a more coherent pathway for students. For a number of students the program is working well. Although the CST curriculum is much more substantive in design and purpose than the former interest coding curricula, the issues inherent in the CST curriculum remain quite similar in nature as its predecessor. A number of problems persist and prevent or deter students from achieving their goal. These problems are described below.

I. Lack of Student Progression

Research in the CST follow-up report (February 2012) demonstrated that student outcomes are not reflecting the full intent of the curriculum's purpose. Data indicated that over a five year span, an average of 59.1% of CST students (N = 3,068) do not successfully transition from the CST curriculum into the initial curriculum of their choice at the College nor do they transfer to a program at another institution. Both past and present analyses have consistently identified the *level of academic skill-sets* with which students enter the College to be an important factor that contributes to students' success or lack of success in transitioning into their curriculum/career choice. Students who enter the College at the lowest levels of developmental English and Math demonstrate limited achievement of prerequisite coursework and do not maintain the necessary grade point average for health career of science/technology program consideration. Students who are unable to gain acceptance into their initial program of choice have similar difficulty gaining acceptance in other related curricula and either remain in the curriculum or leave the College.

II. Program Identity Confusion and Lack of Connection

Most students in the CST curriculum do not choose the curriculum, but rather are placed into the curriculum because they are either academically unprepared to enter their curriculum of choice or they applied too late for select program consideration during their entering semester. Thus, the curriculum consists of students who enter the college academically prepared (11.2% or 582 students out of a sample of 5,194 are ready to take ENGL 101 and 26.9% or 1396 students who have already taken ENGL 101) and those who are simultaneously placed into developmental English courses (61.9% or 3,216 students) upon admission to the CST curriculum. Regardless of multiple interventions and communications as to the reason why students are placed into the CST curriculum, a majority of students remain confused as to why they are in the CST curriculum. Some students are even unaware of the fact that they have been

placed in the CST curriculum. In addition, a number of students who seek admittance into the Nursing or an Allied Health Program at the College are thwarted in their pursuit of their goals due to capacity limitations and/or requirements of those programs. The large number of students in the curriculum (5,441 as of Fall 2012), the mixture of different student populations (College ready vs. non-College ready), and the lack of connection to a specific curriculum which meets their desired goals contributes to the lack of progress that students demonstrate.

Finally, another concern that works against students being able to identify with the CST Curriculum is the fact that the program is not located within a Department but rather is directly under the Dean for the Division of Mathematics, Science and Health Careers. This is a structure that is difficult to explain to students who are looking to connect with departmental faculty.

III. Difficulty in Identifying Students

Many students who remain in the curriculum continue not to make progress, and leave the College after a few semesters. As is the case with the Liberal Art curriculum, CST is not a program, but rather a structured foundation of coursework designed for: (1) students planning to transfer to baccalaureate programs or professional schools after study at Community College of Philadelphia; (2) students selecting a specialized associate's degree; (3) students planning to enter certain select programs at a later date; and (4) students undecided about their long-term educational goals. Only a small percentage of students (10.9%) enter the original program of choice or transfer to another school (Class of Fall 2010 = 27.8%, Class of 2011 = 34.5%). Since interest codes no longer exist in the College's enterprise system, Banner, and all students receive a program code of CST, there is no way to conclusively identify which program students are interested in unless the student identifies that program. As a consequence, initiatives have been implemented on a "one-size fits all" approach which may work against retention.

IV. Issues with Curricular Coherence

The current curriculum is based on the original conceptual model that attempted to provide students with an integration of Science and Technology with Culture. Despite revisions to the curriculum to bring it more in line with its current function and to clarify curriculum requirements, the curriculum is still difficult for students to understand. Thus there have been occasions where students have taken courses that they do not need or failed to take critical courses that they do need.

Also, students who are interested in a health care career or a science career are often unaware of the options that are available to them. The earlier they can select a pathway that is optimal for them, the better they are able to select courses that will fit that choice. The CST Curriculum was designed for a more broad-based selection of courses rather than specific courses that focus the student on his/her career goal.

V. Special Needs of Developmental Students

The CST Curriculum Coordinator and the students placed into CST are similarly confronted with a dilemma that finds a shift in student focus away from the career/curriculum choice to the more immediate academic need for developing basic skills necessary to begin college-level coursework. This dilemma is further exacerbated when: (1) students remain in developmental coursework for two or more semesters; (2) when students are subsequently not successful in

college course completion; or (3) when they do not receive grades that make them competitive for program consideration. Thus, students either remain in the curriculum without reaching their original goal or find themselves having to explore related options that often have similar requirements as their first program choice. Data shows many students leave the College due to insufficient progress.

The problems surrounding the students' academic basic skills preparedness and ability to successfully complete requisite and prerequisite coursework have proven to be intractable, regardless of the restructuring of the interest coding curriculum and the interventions incorporated into the CST curriculum. The issues related to developmental students are global and systemic, rather than specific to a curriculum, and thereby cannot be ameliorated by changes within a curriculum that is neither programmatic nor selective in nature.

CONCLUSION

For several years, the CST Curriculum Coordinator has invested a significant amount of time and effort in reaching out to students through a variety of avenues to decrease confusion about the curriculum and increase awareness of program opportunities. These efforts have been primarily successful in reaching those students who are enrolled in college level courses and who are successfully fulfilling the necessary coursework for program acceptance or subsequent transfer. Several career and curricular focused initiatives assist and inform these students as they navigate their academic path to program acceptance or transfer. However, alternative methodologies of intervention and curricular paths need to be considered for those populations of students for whom the past and current program structure has been demonstrably incompatible.

ACTION PLAN

The recommendation to address the problems related to CST makes a significant revision of the Curriculum. The proposed revision would allow for more targeted communications and interventions. This will prevent a one-size fits all approach to student needs.

I. Revision of the Curriculum

The curriculum that students apply to must make sense to them and to their academic advisors. Following an intensive review of the data it is recommended that a major curricular structural change would be the most appropriate response to address the diversity of academic and skill-based needs of students who are presently placed into CST. Minimally, the new curricular model must fit the needs of students and enable them to achieve one of the following pathways:

1. Enter a Health Care or Science Curriculum that can lead to employment upon successfully completing the curriculum.
2. Enter a Health Care or Science Curriculum that can lead to transfer to another college or university upon successfully completing the curriculum.
3. Enter a Health Care or Science Curriculum that can lead to acceptance into a program at the College prior to completing the curriculum.

4. Enter a curriculum that addresses the need to fulfill developmental requirements prior to entering a secondary program of choice or graduating.

No one curriculum can fulfill all of the pathways listed above. Therefore the curricular revision must create multiple curricula targeted at particular populations of students. It is in this way that clear communications can be developed which will focus on select student needs and require intentional choices and goal identification. This will eliminate program identity confusion among students, increase student retention and graduation rates and create an environment of academic support and motivation for students. Rather than dealing with over 5,000 students, many of whom remain unknown, program faculty will be able to more readily connect with students. Admissions requirements for each curriculum will be developed and facilitate correct placement of students and the development of a communication plan for students. Thus, rather than one large model, a more tiered approach is suggested in which multiple pathways are provided. See Appendix A for a sample model of curricular revisions.

II. New Curricular Pathways

General Studies Curriculum (A.A. degree)

In the new curricular model students who enter the College and place into the lowest developmental levels in reading, writing and mathematics and who have an interest in pursuing either a science career or a health care career will be placed into the General Studies curriculum either in the Science or Health Care tract. Students in this curriculum will focus on strengthening their academic preparedness to move into another curriculum or to graduate in the General Studies Curriculum. Opportunities for strengthening progress through Developmental English and Mathematics courses can follow the current activities implemented by the Office of Developmental Education in the Division of Educational Support Services. Students in this curriculum could also benefit from linking the College Success Seminar (COL 101) with either ASET 101: Science, Technology and Public Policy or AH 101: Introduction to Health Care Careers.

Depending on the composition of the General Studies curriculum, it could be located in the Division of Educational Support Services, the Division of Liberal Studies, or in the Division of Mathematics Science and Health Careers.

Health Science Curriculum (A.A.S. degree and A.S degree options)

Students who enter the College and place into higher developmental levels in reading, writing and mathematics and who have an interest in pursuing a health care career will be placed into the Health Science Curriculum. Students in this curriculum will either be able to move into a health care program at the College or complete an associate's degree in Health Science. Upon graduation a student will be able to enter the workforce or transfer to a bachelor's degree program.

This Health Science – Career Option curriculum is much more directed than the CST curriculum. The courses have been chosen to prepare those students for entry level jobs in a health care setting (e.g. Patient Service Representative, Medical Office Assistant, Medical Insurance Billing). Electives must be used to earn a health care proficiency certificate. Allied Health 101 is a required course in this curriculum and will educate students on the options in the

field of health care as well as the requirements to achieve success. The curriculum has been designed to better prepare students for careers in health care and offer a legitimate career degree for those who do not enter a select program. Also, by exposing students to more courses in the Allied Health Department, they can broaden their knowledge about possible health care careers.

Students who are interested in transfer may choose the Health Science Degree – Transfer Option. This degree is closely modeled after the CST degree which did prepare students for transfer. This degree allows more student choice and flexibility in preparing for transfer and in compliance with our current transfer agreements. A sample of the curriculum is shown in Appendix B.

The Health Science Curriculum options will be located in the Allied Health Department in the Division of Mathematics, Science and Health Careers.

Direct Entry into a College Program

Students who meet the requirements of either a Science or Health Career Program may apply directly to that program. Students who enter the College at a time outside of the normal admissions period will be placed into either the Health Science program, if the interest is in health care or the Applied Science and Engineering Technology program if the interest is in science.

TARGETED COMMUNICATIONS AND INTERVENTIONS

Outreach efforts established over the past several years have been successful in primarily reaching CST students enrolled in College level courses and who have demonstrated success in prerequisite and requisite coursework. These students respond positively and enthusiastically to program and career information and are at the point in their educational path where such information is both timely and relevant. Hence, these efforts should be continued while bolder efforts should be undertaken by the College to address the diversity of need that lies beyond both the structure and purpose of a curriculum.

The communication to students begins at the point of admissions to the College. A communication plan will need to be developed so that as students enter a curriculum listed above they will understand their options and goals that must be achieved. Once a student is placed into a curriculum additional systematic delivery of information can be tailored to each curriculum in order to guide and inform students. An example of this type of communication or modified early alert system is as follows:

Target 1-Admission

Upon admission, students should be provided with information about the Health Care Studies Program and the General Studies Program, including the curriculum, its goals and its purpose. At that time, students should also be made aware of the importance of academic excellence in reaching program or career goals. Student resources, including the Curriculum Coordinator, Learning Lab and Counseling Center should be highlighted.

Target 2 – General Science

Since the students in this curriculum are grappling with developmental courses the communications to these students should be composed by the Director of Developmental Education in conjunction with the Faculty teaching the courses.

Target 2 – Health Science/ASET

Students who reach the level of English 101 will be invited to a Curricular Welcome. Students will then have an opportunity to speak with program faculty, review their goals and determine a course of action that can facilitate their academic success.

Target 3 - Completion of English 101

Students in either the Health Science or ASET who successfully complete English 101 will be sent an electronic module which explains the degree options including select programs and the Health Sciences program.

Target 4- Early Warning Alert

Students in either the Health Science or ASET curriculum who show inadequate/poor academic performance in courses during their first semester at the College will be sent a communication warning them of the consequences of their performance and suggesting remediation/intervention strategies.

Target 5 – Academic Check-Up

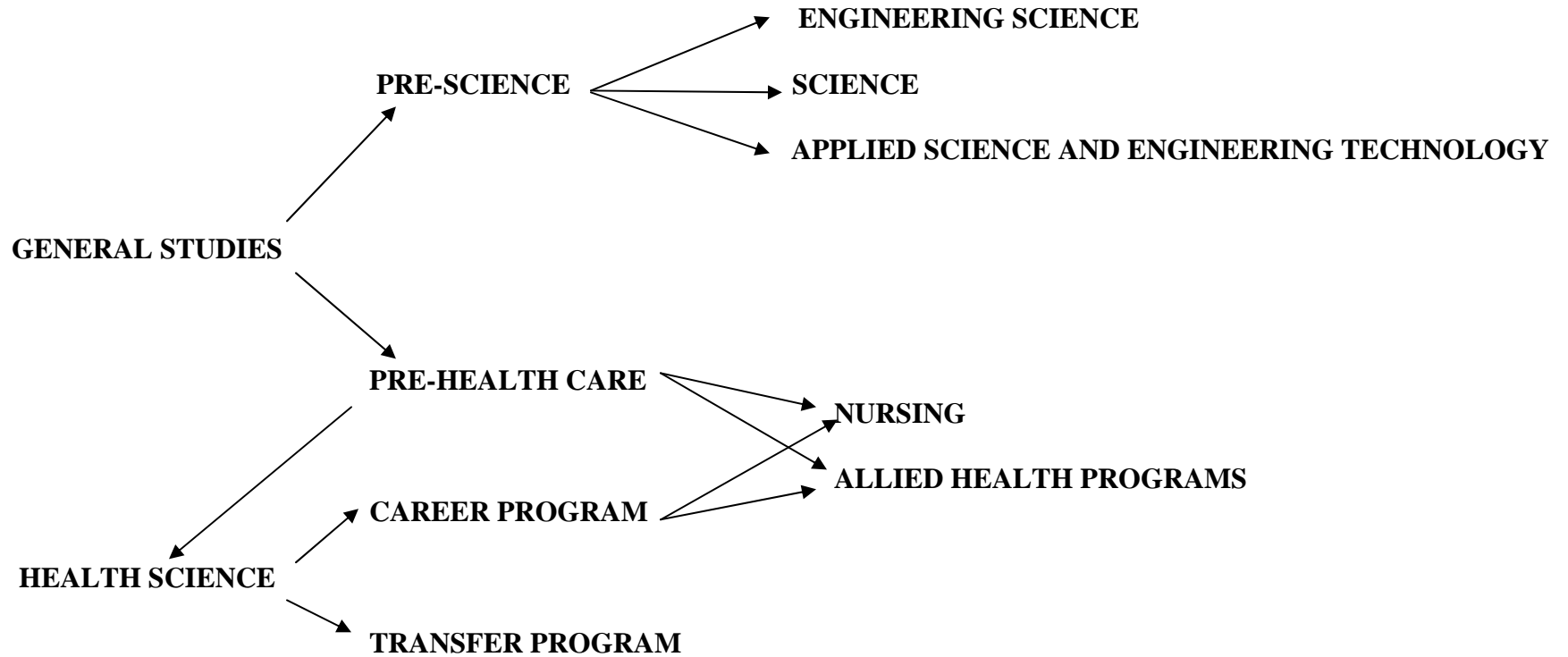
Students in either the Health Science or ASET curriculum who show adequate to good academic performance in courses during their first semester at the College will be sent a communication congratulating them and encouraging them to continue their progress toward their goals.

TIME LINE AND IMPLEMENTATION STEPS

- I. Create a General Studies Curriculum (Fall 2012 to Spring 2013)
 - a. Convene a subcommittee with representatives from the following areas to determine the content of the curriculum, the admission criteria, and the infrastructure for the program as well as to create advising materials.
 - i. CST Curriculum Coordinator
 - ii. Department Head of Allied Health
 - iii. Program Director for ASET
 - iv. Director of Developmental Education
 - v. Faculty representative from Developmental English and Math
 - vi. Director of Advising
 - vii. Dean of MSHC
 - viii. Department Head of Counseling

- b. Determine which areas of the current CST program will need to be moved to the Division of Liberal Studies (e.g. GIS) or the Division of Business and Technology (e.g. Computer Technology).
 - i. Meeting with the appropriate Deans
 - c. Work with Admissions to determine appropriate admissions procedures.
 - d. Work with the Curriculum Facilitation Office to design the curriculum.
- II. Create Health Science Curriculum (Spring 2013 – Summer 2013)
 - a. CST Curriculum Coordinator will work with the Department Head of Allied Health, the Curriculum Facilitation Office and Admissions to create the curriculum and supporting documentation.
- III. Create a Communication Plan for Students (Spring 2013 – Fall 2013)

Appendix A: SUGGESTED CURRICULAR REVISION



APPENDIX B

Draft of the Health Science Degree with a Career and Transfer Option

Health Care Studies-Career Option		Health Science-Transfer
English 101	HUMANITIES	English 101
English 102		English 102
Humanities Elective		Humanities Elective
Math 118	MATHEMATICS & DATA ANALYSIS	Math 118 or higher
Math 150		Math 251
CIS 103	COMPUTER INFORMATION	CIS 103
Sociology 101	SOCIAL SCIENCES	Social Science Elective
Psychology 101		Social Science Elective
Psychology 215		Social Science Elective
Biology Elective with lab	LIFE SCIENCES AND HEALTH	Biology Elective with lab
Biology Elective with lab		Biology Elective with lab
Allied Health 101-Intro		Biology Elective with lab
Allied Health 103-Med Term		Chemistry Elective with lab
Allied Health 190-Human Disease & Health		Any Allied Health or Diet 111
Allied Health 116-Interpersonal & Prof Skills	CAREER/TRANSFER	General Elective-career or transfer
Allied Health 120-Reimbursement		General Elective-career or transfer
Allied Health 202-Basic ICD-9 Coding		General Elective-career or transfer
Allied Health 204-Medical Law & Ethics		General Elective-career or transfer
Allied Health 112-Administrative Procedures		General Elective-career or transfer
60 credits required for degree		60 credits required for degree

Community College of Philadelphia
Academic Program Audit: Associate in Science in Science
Division of Math, Science and Health Careers

Contributors: David Cattell
Mary Anne Celenza
Linda Hansell
Rachel Hammer
Kathleen Harter
Linda Powell

August 16, 2012

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I. Executive Summary

The Associate in Science degree in Science program at Community College of Philadelphia (CCP) offers a comprehensive science curriculum that prepares students to transfer to a baccalaureate institution to continue their studies in a variety of science-related fields. The program was created in 1976 and is housed in the Chemistry Department. The science curriculum consists of a minimum of four Natural Sciences electives each with a lab component, along with Calculus I and II (or a minimum of five natural sciences electives each with a lab component, along with Calculus I) and other required electives and general education courses in multiple disciplines.

Several revisions have been made to the curriculum since it was created in 1976, reflecting a strong commitment to students moving on to four-year institutions, focusing on both the needs of students and the expectations of transfer institutions. Recent curricular revisions have been made to incorporate the Fall 2009 College-wide general education requirements and program-level student learning outcomes have been developed. Program costs are higher than the College average.

Recommendations from this audit focus on increasing enrollment, retention and student awareness of program requirements, investigating future directions for science programs and the potential for increased on-line or hybrid courses, ensuring that lab-based resources meet student needs and addressing the availability of up-to-date technology to meet future needs.

II. Program & Curriculum

Major Goals of the Program

The goals of the Science curriculum are to educate students in major areas of science and provide a foundation for transfer to a four-year college or university. This degree program is designed for students who wish to pursue baccalaureate studies in biological or physical sciences or who plan to continue their education in a professional studies program, such as pre-pharmacy, pre-medical or pre-dental programs. This curriculum parallels the first two years of study offered in the science programs of other colleges and universities.

The Science program has the following student learning outcomes. Upon completion of this program graduates will be able to:

- Successfully transfer into a science-based program at a four-year institution.

- Demonstrate an understanding of scientific principles and concepts and be able to apply this knowledge to the solution of problems and performance of experiments in one or more of the natural science disciplines.
- Competently perform laboratory tasks related to their scientific discipline.
- Communicate information in a manner appropriate to their scientific discipline using verbal, written and graphical means.

History of the Program

The first catalog to show a curriculum for an A.S. degree in Science, independent from the A.S. degree in Engineering Science, was the 1976-1977 catalog. Then as now, the Science program was designed for students who wished to pursue baccalaureate studies in natural or physical sciences. The Science program paralleled the first two years of study offered in the sciences by major area universities (1976-77 CCP Catalogue, Volume XII, No.1). Therefore it was designed to incorporate numerous science courses that allow students to select a broad range of science courses to match their varied academic and career goals.

Description of the Curriculum

Like other A.S. degree programs at the College, the Science program (SCIP) is transfer oriented. The curriculum has a core of science courses that are designed to provide flexibility in course selection for students. To fulfill the curriculum requirements, the student must select a minimum of four Natural Science courses with a lab component. Thus, the program requirements allow students to choose science courses that will best meet their intended baccalaureate degree goal. Calculus I (MATH 171) and II (MATH 172) are also required program courses, although an additional laboratory science course may be substituted for Calculus II (MATH 172) (curriculum revision of Spring 2003). The following chart describes a typical sequence for completing the A.S. degree in Science.

Associate of Science in Science Sequence of Courses

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
FIRST SEMESTER			
ENGL 101 – English Composition I		3	ENGL 101
MATH 171 – Calculus I –OR– MATH 165/166 – Differential Calculus I and II	MATH 162	4	Mathematics
Natural Sciences with Lab Elective		4	Natural Science
CIS 103 – Applied Computer Technology		3	Tech Comp
SECOND SEMESTER			
MATH 172 – Calculus II –OR– Natural Sciences with Lab Elective	MATH 171 or MATH 166	4	Natural Sciences with Lab Elective
ENGL 102 – English Composition II	ENGL 101	3	Engl. 102, Info Lit.
Humanities Elective		3	Humanities
Natural Sciences with Lab Elective		4	
Natural Sciences with Lab Elective		4	
THIRD SEMESTER			
Natural Sciences with Lab Elective		4	
Social Science Elective		3	
Humanities Elective		3	
General Elective		3	
Natural Sciences with Lab or General Elective		3 or 4	
FOURTH SEMESTER			
Natural Sciences with Lab or General Elective		3 or 4	
Social Science Elective		3	
General Elective		3	
General Elective		3	
MINIMUM CREDITS NEEDED TO GRADUATE		60	

Internal Program Coherence

Students can meet their goals within a two-year time span. The necessity of taking any developmental or pre-requisites courses prior to (and in addition to) the program courses will delay attainment of the degree. Independent of increasing the number of sections being offered, the three science departments seek to assure that the students can take multiple science courses in any given semester by paying attention to the timing of the offerings so as to avoid conflicts that would prevent students from being able to register for multiple science courses in the same semester.

In addition, College Chemistry I (CHEM 121) is now offered in a hybrid format supplementing the distance hybrid availability of General and Introductory Chemistry (CHEM 101, 102 and 110). Students in the program can also enhance their study of chemistry by taking the honors section of CHEM 121 and the honors section of CHEM 122. General Biology I (BIOL 106, distance) was also recently developed and is currently being offered in this on-line format. As

more instructors take the required training to be able to offer their courses in this format (distance or distance hybrid), the number of on-line sections available is expected to grow.

The curriculum is designed to create coherence by providing students with opportunities to

1. Select courses in a coherent manner around a common core that addresses their academic and career goals.
2. Combine theoretical scientific principles learned in lecture courses with experiential learning through laboratory exercises.
3. Prepare for science courses by taking the appropriate pre-requisite courses that provide a foundation for learning.
4. Select non-science courses (e.g. courses in mathematics or General Education courses) which will prepare them for transfer to a four year school by either matching the first and second year curriculum at those institutions or by providing them with skills (e.g. critical thinking, communication, writing, etc.) which will apply to future academic endeavors.

Revisions Since Inception of Program

The only revisions on record are those of Spring 2003 and Fall 2009.

- In Spring 2003, the program was revised to allow a four-credit laboratory science to replace Calculus II upon student need. At the time of the revision, Pre-Pharmacy at Temple University required only Calculus I (MATH 171) and many students in the Science program aspired to transfer into pre-pharmacy (see Appendix A).
- In Fall 2009, the program was revised to meet the College's new General Education requirements. A General Elective course was replaced with CIS 103: Applied Computer Technology to meet the Technology Competency requirement (see Appendix B).

Program Activities

The Science program, designed to provide a foundation in any of the natural sciences and/or prepare the student for pre-professional fields, has a very broad base of science courses that are integral and foundational to all these fields. Within that context, it is important to note that curricular innovations and supporting program enhancements within all the science departments have been ongoing and include software updates, new instrumentation, new laboratory experiments and expansion of courses into distance or hybrid format. As basic textbooks change to reflect an expanding knowledge base and new applications, the course content is amended and/or expanded to reflect these developments.

A partial list of recent program activities include:

- In the area of software and technology, use of publisher-provided course management systems and supplementary resources are being incorporated by an increasing number of instructors including *Wiley Plus*, Cengage's *OWL* and McGraw-Hill's *Connect Plus* homework and text resources. Additionally, most instructors are using the 'MyCCP; *MyCourses*' functionality to give students additional digital access to course information, supplementary material and the like.
- Physics has incorporated the use of Pasco equipment and software for data acquisition in the Conservation of Momentum Experiment M-9B and Boyle's Law Experiment H-2B (PHYS 140 and PHYS 111). For data acquisition and control in the Capacitors Experiment EM-3B and Induced Voltage Experiment EM-11B, they are using *LabVIEW* software (PHYS 241 and PHYS 112).
- Instrumentation acquisitions for Biology (such as incubators, microscopes, centrifuges and electrophoresis equipment) have allowed a large expansion of course offerings at the Northeast Regional Campus (NERC) and also on Main Campus, especially in the area of both General Biology I (BIOL 106 and 123) and Microbiology (BIOL 241) (see Appendix C for a full list of newly purchased biology equipment). A new Anatomy and Physiology Lab and a new Biotechnology/Microbiology Lab have been added at the NERC.
- Within the last two years, Chemistry was able to purchase a Fournier Transform Infra-red Spectroscopy (FTIR) (from Thermo-Fisher), an Ultra-violet Visible Spectrophotometer (UV-VIS) and a Gas Chromatograph (GC) (from Shimadzu) and was the recipient of a donated Biomini UV-VIS (from Centacor).
- In Physics, industry-standard software (*LabVIEW*) is used with the Hewlett-Packard equipment for both data acquisition and instrumentation control. Proprietary software packages from Pasco and Vernier are used with the respective equipment.
- New experiments incorporated into current courses include:
 - An 'Instrumentation Lab Experiment,' "Stress and Strain," was developed under the National Science Foundation Course, Curriculum and Laboratory Improvement (NSF CCLI) grant the physics department received in 1999. Real-time data acquisition of stress and strain is performed using National Instruments' *LabVIEW* software.

- Nanotechnology experiments were written under the auspices of a National Science Foundation subcontract issued by Penn State University (2007) to incorporate nanotechnology topics into the curricula of Community College of Philadelphia's natural science courses. As a result, the following laboratory experiments were developed and incorporated:
 - *DNA Microarrays: A Nanoscale Method for the Study of Gene Expression* has been incorporated into the regular laboratory schedule of Cellular and Molecular Biology (BIOL 123).
 - *Self Assembly of a Monolayer: Avogadro's Number and Molecular Size and Preparation of Colloidal Gold Nanoparticles* are a regular part of the laboratory schedule in College Chemistry I and II courses (CHEM 121-122).
 - *Measuring the Length of a Molecule and Measuring Atomic Mass* have been incorporated into the regular laboratory schedule of Survey of Physics (PHYS 105).
- New courses are being written and added to the College catalog in each of the science departments. For example, the Biomedical Technician Training Internship (BTTP 201) has been developed and Biotechnology I (BIOL 255) and Biotechnology II (BIOL 256) have recently been approved. A Biotechnology Proficiency Certificate was implemented in Fall 2011 and it is anticipated that a Biomedical Technician Training Proficiency Certificate will be implemented Fall 2012. These course additions will afford students the opportunity to add an additional credential to their Science degree.
- To strengthen offerings in physical and natural sciences and related technologies, the Center for Science and Engineering Education (CSEE) was created in 2008 to foster collaboration among the science departments and to establish contacts with funders and employers in STEM (Science, Technology, Engineering and Mathematics) related fields. The Center brings together faculty from all three science departments. It also has an active Advisory Board drawn from the College, other institutions of higher education, secondary schools and education-related organizations throughout Philadelphia and STEM industry representatives. A significant part of the CSEE mission is to increase student knowledge, exploration and interest in pursuing STEM careers (see Appendix D and E for CSEE Advisory Board and Bylaws).

Anticipated Revisions and Challenges

Continued good advising is needed to assure that students are taking the proper level and sequence of science courses to fulfill the freshman and sophomore level expectations of their anticipated transfer program and institution. Completion of the A.S. degree enhances transfer opportunities and should be strongly encouraged.

Relationship to College Mission and Strategic Plan

The Science program matches the goals outlined by CCP's mission statement in a number of key ways. The program strives to "provide a coherent foundation for college transfer, employment and life-long learning" and "prepare students for more advanced educational and training opportunities" through a flexible course structure, transfer agreements and overall skill-building. Science is a growing field (as illustrated in section VI) and thus gives students the training to "meet current and evolving labor market needs."

The science curriculum provides course selection flexibility to make coursework parallel to regional four-year degree programs. This supports the 2008-2012 Strategic Plan in that it allows for student planning "for the future through strengthened partnership efforts." CCP has dual admissions agreements through which a student can earn a science degree and transfer with junior standing at Cabrini College, Cheyney University, Temple University, La Salle University, Rosemont College, Chestnut Hill College and Drexel University. CCP also has a specific program-to-program agreement with Philadelphia University based on the science curriculum.

Likewise, there are several other areas where the Science program interfaces with and supports the Strategic Plan. Specifically:

- Goal A1. The College will enhance quality, innovation and effectiveness in the delivery of academic, administrative and student support services.
- Goal A2. The College will establish a more student-centered culture.
- Goal B1. The College will identify and implement improved strategies to support course and program assessment and renewal.

Relationship to Other Programs in the College

Currently, the A.S. degree in Science is one of four options in the Division of Mathematics, Science and Health Careers that students have for pursuing a degree in a scientific discipline. The other three options are the A.S. degree in Engineering Science, the A.A. S. in Chemical Technology and the A.A.S. degree in Applied Science and Engineering Technology. All four programs are alike in that they are overseen by a science Department Head from one of the current science departments, Biology, Chemistry and Physics. The Department Head of Chemistry oversees the Science Degree and the Chemical Technology degree. Full-time faculty

who teach courses in these programs are members of one of the three science departments. However, unlike the Engineering Science and Chemical Technology programs the Science, and the Applied Science and Engineering Technology programs have no discipline specific full-time faculty members who teach only in one department or program.

Both the Engineering Science and the Chemical Technology programs prepare students for a focused scientific area. In contrast, the Science degree and the Applied Science and Engineering Technology degree are broader in scope. The long-standing A.S. in Science, which has a direct focus on immediate transfer to a baccalaureate program, is an appropriate complement to the newly developed Applied Science and Engineering Technology Degree program which focuses on preparing students to enter the workforce directly upon graduation and possibly continuing their education at a later time.

In terms of student trajectory, students who are planning to transfer into a four-year institution to pursue a natural science or a pre-professional science-oriented degree are encouraged to enter this program when they have met the preliminary math criterion of passing Pre-Calculus I (MATH 161) with a C or better. Thus, students cannot enter the College with a degree code of 'science;' instead, they must request a change in curriculum no sooner than the completion of their first semester at the College. The mathematics requirement is necessary to keep students on track for transfer to four year colleges and universities who expect students to have mastered these courses in the first two years of college.

Most students who do enter this select program move into it from the Culture, Science and Technology Program (CSTP) or from Liberal Arts (LA) program. Students are unlikely to enter the Science program from other programs within the College unless they drastically change their career goals while here. Exiting from the Science program into other College programs is equally unlikely unless the student chooses to drastically change his/her career orientation. Other College programs into which students could exit should they want a more immediate career-oriented program, versus transfer, are Chemical Technology and the Applied Science and Engineering Technology (ASET) programs.

Future Directions in the Field and Program

Future directions in the science field are expanding and the foundational level science courses that constitute this two-year science program are expected to have increased demand. Fields which demand a strong scientific foundation continue to be biology, chemistry and physics (in all their subspecialties), as well as research, pre-medical, pre-dental and pre-pharmacy. Along with that, however, is an increasing number of emerging cross-disciplinary science fields such as biotechnology and nanotechnology (see the EMSI data on expected job growth in these areas in section VI and Appendix F).

III. Faculty

There are no faculty members specifically designated as “Science curriculum faculty.” Faculty members who teach students enrolled in the various science, mathematics and Liberal Arts courses reside in their appropriate academic departments. In fact, depending on their selection of natural science courses, students in the Science curriculum may take science classes with only a small percentage of all the faculty in the natural science departments.

All full- and part-time faculty members must meet the minimum educational and experiential requirements defined by the individual department/discipline as well as meeting the College requirement of Fall 2005, which requires that all full-time faculty members hold a Master’s degree in their discipline or discipline related area. Part-time faculty are required to hold a Master’s degree and 18 graduate credits in the discipline in which they teach. Each academic department has an approved faculty evaluation plan guiding both developmental and summative evaluation – helping to ensure that faculty members remain current in their discipline. In addition, individual departments hold discipline-specific professional development in-service days at least once a year.

The current (Spring 2012) composition of the three science departments is as follows:

- Biology has 27 full time faculty members (and approximately 29 adjuncts).
- Chemistry has 10 full time faculty members (and approximately 23 adjuncts).
- Physics has 4 full time faculty members (and approximately 6 adjuncts).

All full-time and part-time faculty members in the natural science departments have a degree in a science area. The university degrees of the faculty within each department vary and even with a given department, they are quite diverse. As new faculty members are hired, there is a strong emphasis on assuring that they can fulfill the needs of the department not only to teach current courses but also recently added or anticipated offerings.

Professional Development

The College requires all full-time faculty members to participate in two weeks and two days of professional development, one in the Fall semester and one in the Spring semester. The faculty of the three natural science departments (as well as the faculty college-wide) are expected to stay current with changes and research advances within their discipline and also with changing educational pedagogy and technology. Faculty (about 30%) from all three science departments have presented at national and regional conferences, during the College’s Professional Development Week and in the Teaching Center. Approximately 15% of the full-time Faculty in the Biology Department have recent publications in peer-reviewed journals. All faculty in the science departments have engaged in professional development activities within their own departments (e.g. Chemistry faculty have received training on a new HPLC instrument and on

the Wiley Plus on-line teaching/learning system; Biology faculty have received updated training in laboratory safety, and on-line learning systems).

Contributions to the Life of the College

Faculty from the science departments participate in the life of CCP by contributing to committee work, presenting at professional development days, working with faculty in other divisions and departments and organizing programs for high-school students and teachers and also for Community College of Philadelphia's own students. Examples of faculty engagement include but are not limited to the following:

- Two faculty members co-chair the Executive Committee of the Center for Science and Engineering Education.
- Six other faculty members serve on the Executive Committee of the Center for Science and Engineering Education.
- All full-time faculty in the Chemistry and Biology departments participate on departmental committees.
- Four faculty members from the Biology, Chemistry and Physics departments gave presentations to high school students as part of the College Connection for Science and Engineering Education (CCSEE).
- In Spring 2011, 15 faculty members had students who participated in the student poster session. These faculty assisted their students in researching and presenting current topics in a science area. In Spring 2012, 16 faculty had their classes participated in the poster session.
- One faculty member from the Biology department participated on the Assessment Committee for General Education.
- Faculty members from the Biology and Chemistry Departments have been members of the Curriculum Committee.
- Faculty members from the Biology, Chemistry and Physics Departments have run summer camps for high school students for the past two summers.
- Faculty from the Biology, Chemistry and Physics Departments have participated in College open houses and other recruitment activities.
- Faculty from the Biology, Chemistry and Physics Departments have participated in the Philadelphia Science Festival in Spring 2011 and Spring 2012.

- Faculty from the Biology and Chemistry Departments were members of a panel which presented information to the community at the opening of the new building at the Northeast Regional Center.

IV. Outcomes and Assessment

Program Documentation

There is no original Science curriculum document on file in the Curriculum Facilitation Office. There are two curriculum revision documents on file. Although the program was started in the 1976-77 academic year, there is no previous program audit on record. There is documentation, from 2003, of minor program changes and, in Fall 2009, further revisions were made due to changes in the College's General Education requirements.

An Assessment Plan for the Science Curriculum was completed in Fall 2011. The Quality/Viability Indicator (QVI) has been completed for the Science program in Spring 2011. The results of the QVI showed that the Science program had high quality (3.0/4.0) and average viability (2.0/4.0). Of the 5 viability measures used in this assessment, Fall to Fall retention was the lowest score.

Course-Level Evaluation

Although the Science program itself does not have program-specific science courses, each science course in the individual science departments is Chapter 335 compliant as of April, 2012 and contains documentation for course-level evaluation. For example, the Chapter 335 documentation (see Appendix G for full documentation of an example, based on CHEM 121) clearly states how the course relates to the College mission, is equivalent to similar courses at other institutions and adequately prepares students for the next course in the sequence. With an action plan to ensure compliance, this course documentation indicates the push for relevant and up-to-date materials.

The chemistry, biology and physics departments have completed course-level student learning outcomes for all science courses. Appendix H contains an example of the student learning course goals for CHEM 121. Assessment Plans for biology, chemistry and physics course student learning outcomes were completed in Fall 2011. To date the following science courses have completed an assessment of course student learning outcomes:

Course	Student Learning Outcomes	Data Collected
BIOL 106	1	Fall 2010, Spring 2011
	2	Fall 2010, Spring 2011
	3	Fall 2010, Spring 2011
	4	Fall 2010, Spring 2011
	5	Fall 2010, Spring 2011
	6	Fall 2010, Spring 2011
BIOL 110	1	Spring 2011
	2	Spring 2011
	3	Spring 2011
	4	Spring 2011
BIOL 123	1	Fall 2011
	2	Fall 2011#
	3	Fall 2011#
	4	Fall 2011#
	5	Fall 2011#
	6	Fall 2011#
	7	Fall 2011#
	8	Fall 2011#
	9	Fall 2011#
CHEM 101	1	Fall 2010, Spring 2011
	2	Fall 2010, Spring 2011
	3	Fall 2010, Spring 2011
	4	Fall 2010, Spring 2011
	5	Fall 2010, Spring 2011
	6	Fall 2010, Spring 2011
	7	Fall 2010, Spring 2011
	8	Fall 2010, Spring 2011
	9	Fall 2010, Spring 2011
	10	Fall 2010, Spring 2011
	11	Fall 2010, Spring 2011

Course	Student Learning Outcomes	Data Collected
CHEM 102	1	Spring 2011, Summer 2011
	2	Spring 2011, Summer 2011
	3	Spring 2011, Summer 2011
	4	Spring 2011, Summer 2011
	5	Spring 2011, Summer 2011
	6	Spring 2011, Summer 2011
	7	Spring 2011, Summer 2011
	8	Spring 2011, Summer 2011
	9	Spring 2011, Summer 2011
	10	Spring 2011, Summer 2011
CHEM 203	1	Spring and Summer 2011
	2	Spring and Summer 2011
	3	Spring and Summer 2011#
	4	Spring and Summer 2011#
	5	Spring and Summer 2011#
	6	Spring and Summer 2011#
	7	Spring and Summer 2011#
	8	Spring and Summer 2011#
	9	Spring and Summer 2011#
	10	Spring and Summer 2011#
	11	Spring and Summer 2011
CHEM 203	12	Spring and Summer 2011
	13	Spring and Summer 2011
	14	Spring and Summer 2011
	15	Spring and Summer 2011
	16	Spring and Summer 2011
	17	Spring and Summer 2011
PHYS 101	1	Fall 2011
PHYS 108	1	Fall 2011
PHYS 125	1	Spring 2011

The Science degree, is composed of a course sequence that permits students to customize their choice of science courses. From Fall 2008 to Fall 2010, the most frequently taken science courses from each discipline as taken by a sample of Science program students (N = 270) is presented in the following table:

Table II.1: Three Most Common courses taken by Science students in Each Discipline

Course	Student Count	% Earning Grades of A, B and C
Chem 121	117	89.7
Chem 122	108	79.6
Chem 221	73	91.8
<i>(totals 298 of the 467 students taking Chem courses)</i>		
Biol 109	91	89.0
Biol 123	80	71.2
Biol 106	61	95.1
<i>(totals 232 of the 437 students taking Biol courses)</i>		
Phys 111	40	77.5
Phys 140	32	100
Phys 241	22	86.4
<i>(totals 94 of the 146 students taking Phys courses)</i>		

As the data shows, overall success rates were high for students in all courses cited above as shown by the average percent success rates for Chemistry (87.03%), Biology (85.1%) and Physics (87.9%).

Program Outcomes

The program attributes that were assessed by this audit to determine the success of the program in meeting its stated goals are:

- Number of students in the program who successfully complete the program and graduate.
- Time frame to graduation.
- Number of students who successfully transfer into a science-based program at a four-year institution.
- GPA of graduating Science program students
- Retention data

Enrollment

Enrollment in the Science program over the last 12 semesters has fluctuated moderately (table IV.D.1). The average number of enrolled students is approximately 141 students per semester. The highest credit FTE enrollment was in Fall 2010 at 148 FTEs and the lowest enrollment was in Fall 2006 at 89 FTEs (table IV.D.2).

Table IV.D.1: Student Credit Headcount

	Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
Program	152	147	119	150	124	147	132	151	123	113	186	146
College-wide	16,236	16,978	16,871	17,019	17,334	17,661	17,327	18,023	19,047	19,965	19,503	20,170

Table IV.D.2: Credit FTE Headcount

	Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
Program	119	113	89	109	95	113	104	114	97	92	148	120
College-wide	11,017	11,329	11,523	11,296	11,881	11,823	11,883	12,128	13,361	13,784	13,697	13,863

Graduates

With the exception of 2009, the number of graduates in the Science program has remained somewhat consistent. The average number of graduates in the Science program over the last six academic years is 53 students per year (table IV.D.3).

Table IV.D.3: Number of Program Graduates, 2006-2011

2006	2007	2008	2009	2010	2011
39	46	52	84	45	57

Data from a random sample of 120 Science students enrolled from Summer II 2006 to Fall 2010 showed that students in this sample typically took an average of 2.19 years (median of 2.35 years) or approximately seven semesters to complete the program. It is difficult to use this average time frame as typical, as students are able to apply to the Science program either at the end of their first CCP semester or the day they apply to graduate.

Student Profile

The Science program enrolls a diverse student body. Table IV.D.4 indicates that the Science program has consistently enrolled more females than males every semester. Over the last 11 semesters, the program has enrolled an average of 6.5% fewer female students but 5.9% more male students than are enrolled in the college as a whole.

Table IV.D.4: Program Enrollment by Gender as Compared to College-wide Enrollment (Percent)

Gender		Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
Female	Program	59.9	68.1	61.3	62.1	57.8	56.8	57.6	53.7	58.4	58.1	58.9
	College	66.5	66.5	66.8	66.6	66.4	66.3	65.8	65.3	65.3	64.6	64.2
Male	Program	38.8	30.3	36.7	36.3	40.8	40.9	39.1	44.7	40.7	41.4	41.1
	College	32.2	32.3	32.1	32.3	32.7	32.9	33.1	33.8	33.9	34.8	35.3
Unknown	Program	1.4	1.7	2.0	1.6	1.4	2.3	3.3	1.6	0.9	0.5	0
	College	1.2	1.2	1.1	1.1	.9	.9	1.1	.9	.8	0.6	0.5

Tables IV.D.5 and IV.D.6 indicate that Black, Non-Hispanic, and White, Non-Hispanic students represent the largest racial/ethnic groups in the program. The Science program has seen a slight increase of Hispanic students enrolled in the program from semester to semester. In addition, the program enrolls nearly three times as many Asian students as are enrolled in the College as a whole.

Table IV.D.5: Program Enrollment by Racial/Ethnic Background

Race	Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
Amer Indian or Alaskan Native	1	1	1	2	2	2	2	2	0	0	1	1
Asian	35	25	40	30	30	38	27	31	23	23	31	35
Black, Non-Hispanic	49	46	51	47	49	56	46	51	36	28	59	38
Hispanic	4	2	2	4	4	5	9	12	10	11	14	8
Other	15	8	15	10	9	8	9	8	8	8	15	17
Unknown	12	9	12	9	8	13	19	16	15	12	18	10
White, Non-Hispanic	31	28	29	22	20	25	25	31	31	31	48	37

Table IV.D.6: Program Enrollment by Racial/Ethnic Background as Compared to College-Wide Distribution (percent)

Race		Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
Amer Indian or Alaskan Native	Program	0.0	0.7	0.8	0.7	1.6	1.4	1.5	1.3	0.0	0.0	0.5	0.7
	College	0.5	0.6	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.3	0.5	0.5
Asian	Program	27.6	23.8	21.0	26.7	24.2	25.9	20.5	20.5	18.7	20.4	16.7	24.0
	College	7.4	7.3	7.7	8.1	8.3	7.9	7.2	7.1	6.9	6.8	7.2	6.9
Black, Non-Hispanic	Program	30.9	33.3	38.7	34.0	39.5	38.1	34.8	33.8	29.3	24.8	31.7	26.0
	College	46.7	47.8	46.9	47.4	47.1	48.0	46.8	47.4	47.2	48.0	47.7	49.1
Hispanic	Program	3.9	2.7	1.7	1.3	3.2	3.4	6.8	7.9	8.1	9.7	7.5	5.5
	College	5.9	5.8	6.1	6.2	6.5	6.4	7.0	6.6	7.0	7.2	6.6	6.1
Other	Program	9.2	10.2	6.7	10.0	7.3	5.4	3.0	5.3	6.5	7.1	8.1	11.6
	College	5.0	4.8	4.6	4.6	4.2	4.3	4.1	3.9	4.2	4.3	4.0	3.8
Unknown	Program	8.6	8.2	7.6	8.0	6.5	8.8	14.4	10.6	12.2	10.6	9.7	6.8
	College	6.1	6.5	6.8	6.9	7.4	7.5	8.4	9.2	9.1	8.8	9.2	9.1
White, Non-Hispanic	Program	19.7	21.1	23.5	19.3	17.7	17.0	18.9	20.5	25.2	27.4	25.8	25.3
	College	28.4	27.3	27.4	26.3	26.1	25.5	26.1	25.4	25.4	24.4	24.8	24.4

This table (IV.D.7) indicates that the largest percentage of students is between the ages of 22 and 29, most of the last 12 semesters with the exception of Fall 2010 where students in the 16-21 age range represented the largest percentage of students in the program. Compared to the College as a whole, the science program enrolls 8 to 15 percent fewer students aged 40 years and older.

Table IV.D.7: Enrollment by Age as Compared to College-wide Enrollment (Percent)

Years		Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
16-21	Program	35.5	26.5	31.9	24.0	29.8	23.1	34.1	21.2	32.5	24.8	44.1	27.4
	College	33.8	28.3	35.8	30.0	36.9	30.7	36.6	29.7	35.5	26.9	36.0	29.4
22-29	Program	47.4	55.1	49.6	53.3	55.6	57.1	50.8	60.3	52.8	54.9	37.1	48.6
	College	30.2	33.6	30.0	34.2	30.3	35.1	30.7	36.1	33.0	37.3	33.6	38.1
30-39	Program	11.8	15.6	12.6	17.3	9.7	12.9	11.4	14.6	8.1	15.0	11.8	17.1
	College	17.2	18.1	16.2	17.4	15.9	16.8	15.9	17.4	16.2	17.8	16.5	17.7
40+	Program	3.3	1.4	2.5	1.3	0.8	4.1	3.0	2.6	4.1	3.5	4.3	4.8
	College	14.6	15.6	14.2	14.9	13.8	14.6	14.3	14.6	13.7	14.0	12.6	13.7
Unknown	Program	2.0	1.4	3.4	4.0	4.0	2.7	0.8	1.3	2.4	1.8	2.7	2.1
	College	4.1	4.4	3.8	3.6	3.1	2.8	2.5	2.2	1.6	1.3	1.3	1.1

Table IV.D.8. shows that, with the exception of Fall 2009 and Spring 2010, slightly more students in the science program consistently tend to be part time students (average = 53.7 students) than full time students (average = 46.3). This finding is comparable to the overall pattern college wide where more students tend to be part time students (average = 68.3 students) than full-time students (average = 31.7). However, the science program tends to enroll slightly more full-time students than the college as a whole.

Table IV.D.8: Program Full-Time/Part-Time Enrollments as Compared to College-wide Enrollments (Percent)

		Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
FT	Program	44.7	43.5	42.0	37.3	44.4	41.5	50.0	47.7	51.2	52.2	47.8	53.4
	College	31.8	30.0	33.3	29.0	32.8	29.2	32.7	30.0	35.3	32.2	34.2	30.5
PT	Program	55.3	56.5	58.0	62.7	55.6	58.5	50.0	52.3	48.8	47.8	52.2	46.6
	College	68.2	70.0	66.7	71.0	67.2	70.8	67.3	70.0	64.7	67.8	65.8	69.5

Retention Data

The following table (IV.E.1) indicates that two-thirds to three-quarters of Science students enrolled in the Fall semester are likely to return to the same program the subsequent Spring semester. Fall 2010 is the exception with a little less than a half of the students returning to the science program and more students returning to other programs. The average percentage of students who did not return to the Science program is slightly lower (22.2%) than that of the college overall (27.8%). In addition, Science program students are two to nine percent more likely to graduate than the entire student body. This may be due to the flexible nature of the program and students' strong desires to transfer upon completion of the program requirements.

Table IV.E.1: Students who returned to the same Program or a different program in the subsequent Spring Semester (Percentage)

Status		Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011
Returned Same Program	Program	64.5	69.7	66.1	76.5	61.8	48.9	73.4
	College	65.6	64.3	64.2	64.6	68.4	66.9	65.3
Returned Different Program	Program	3.9	2.5	2.4	1.5	3.3	22.0	1.6
	College	3.6	4.1	5.2	5.1	4.8	4.9	6.2
Graduated Fall	Program	5.9	10.1	8.1	3.8	8.9	4.3	5.4
	College	1.9	1.7	2.1	1.8	2.0	2.2	2.0
Did not return Spring	Program	25.7	17.6	23.4	18.2	26.0	24.7	19.6
	College	28.9	29.9	28.6	28.5	26.4	25.9	26.5

On average, a slightly higher percentage of Science program students (53.8%) enrolled in the Spring semester are likely to either return to the same program in the subsequent Fall semester, or graduate from the College than the overall College student (44.8%). . The average percentage of students who did not return to the Science program is somewhat lower (40.3%) than that of the college overall (47.2%). (Table IV.E.2).

Overall, the retention rate for students in the Science Program is slightly better than the overall College's rate and thus could be improved.

Table IV.E.2: Students who returned to the same Program or a different program in the subsequent Fall Semester (Percentage)

		Fall 2005	Fall2006	Fall2007	Fall 2008	Fall 2009	Fall2010
Returned Same Program	Program	32.9	33.6	34.7	28.8	39.0	19.9
	College	36.0	36.2	35.0	37.1	38.5	37.0
Returned Different Program	Program	3.9	7.6	3.2	0.8	2.4	17.2
	College	7.2	7.5	8.2	8.5	7.6	9.1
Graduated	Program	15.8	24.4	22.6	29.5	23.6	18.3
	College	7.7	8.1	8.1	8.3	8.1	8.5
Did not return Fall	Program	47.4	34.5	39.5	40.9	35.0	44.6
	College	49.1	48.3	48.8	46.1	45.8	45.3

Academic Performance

Science program students are academically successful, as evidenced by course completion, average GPA, academic standing and success at departure. On average, Science program students complete 93.7 percent of college-level credits they attempt, which is slightly more than the average percent the College as a whole completes (88.1 percent). In addition, the majority of students are in good standing graduating on average with a GPA of 2.99 as compared to a College-wide average GPA of 2.63. The majority of the students are in good academic standing (average = 92%) at a rate that is slightly higher than the College as a whole (average = 85%). Most students enrolled in the Science program either graduate or experience long-term success at departure from the College at a higher rate than the overall rates for the College. (Tables IV.E.3, IV.E.4 and IV.E.5).

Table IV.E.3: Student Course Completion and Average GPA (percent)

		Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
Percent of college-level credits attempted/completed	Program	92.0	94.5	92.1	94.8	92.3	93.1	94.7	95.3	95.5	91.6	95.4
	College	88.9	88.7	87.1	88.5	87.6	89.4	88.2	87.1	86.7	88.8	87.7
Average GPA	Program	2.88	2.9	2.94	2.94	2.96	2.9	3.01	3.07	3.12	2.91	3.31
	College	2.64	2.62	2.59	2.64	2.61	2.67	2.65	2.60	2.59	2.67	2.63

Table IV.E.4: Student Academic Standing (percent)

		Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011
Good Standing	Program	98.0	93.2	95.0	92.0	87.9	87.8	86.4	90.1	90.2	94.7	92.5	95.2
	College	90.8	88.1	88.8	86.2	83.8	82.2	85	83.0	85.6	83.2	84.4	84.1
Dropped insufficient progress/poor scholarship	Program	1.3	0.0	1.7	1.3	1.6	2.0	0.8	4.0	0.8	0.0	0.5	0.7
	College	2.6	3.8	3.0	4.3	3.4	5.5	3.7	5.7	1.2	1.7	1.9	1.9
Probation - FT/PT/Prov.	Program	0.7	4.8	3.4	4.7	8.9	7.5	12.2	3.9	4.1	1.8	7.0	4.1
	College	6.5	8.2	8.1	9.5	12.7	12.2	11.2	11.5	13.3	15.1	13.7	14.0

Table IV.E.5: Levels of Student Success at Departure (percent)

Status		Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009
Graduated	Program	16.7	27.1	31.3	21.5	25.0	33.9	15.0	42.9	25.8
	College	5.8	12.1	5.2	13.9	6.5	14.0	6.0	14.4	7.2
Long-term success	Program	77.8	57.6	50.0	63.1	67.9	48.4	60.0	44.3	54.8
	College	38.3	38.4	35.5	35.3	33.6	35.6	35.9	35.5	36.9
Short-term success	Program	5.6	1.7	12.5	3.1	3.6	8.1	1.0	4.3	16.1
	College	17.4	16.9	18.1	16.4	19.0	17.1	18.4	17.3	18.2
Unsuccessful	Program	0.0	13.6	6.3	12.3	3.6	9.7	1.5	8.6	3.2
	College	38.4	32.6	41.1	34.4	40.9	33.4	39.8	32.8	37.7

- Long term success is defined as departure with a GPA of 2.0 or greater and 12 or more cumulative hours earned
- Short Term success is defined as departure with GPA of 2.0 or greater with 11 or fewer cumulative hours earned.
- Unsuccessful is defined as all departing students not otherwise classified including students who never completed a college-level course

Transfer Data

Over the last six years, an average of 82.5% of students responding to the Institutional Research (IR) Graduating Student survey transferred to another institution shortly after graduating from the college which is a higher rate than the overall college average of 58.9%. With the exception of the graduating class of 2009, all students responding to the Graduating Student survey believed that their preparation for transfer was either excellent or good. (See table IV.E.6 and IV.E.7).

Table IV.E.6: Percentage of Science Students who transfer shortly after Graduating from the College

	2005	2006	2007	2008	2009	2010
Program	90.0	75.0	100.0	80.0	87.5	62.5
College	58.2	53.2	58.0	65.7	61.5	57.1

Table IV.E.7: Percent of Students who Felt Their CCP Preparation for Transfer was either Excellent or Good

	2005	2006	2007	2008	2009	2010
Program	100.0	n/a	100.0	100.0	85.7	100
College	93.8	88.3	96.9	91.3	92.8	92.5

Student Survey Results

Surveys were mailed and/or emailed to current, former and graduated students in the science program. Surveys were sent to:

- 167 current students in the Science program
- 342 former students of the Science program
- 264 graduates of the Science program
- (773 total surveys)

Students currently enrolled in the Science program were emailed a link to an electronic survey on the Survey Monkey platform through their CCP-based email. Hard copies of the survey were mailed to graduates and former students of the Science program. Survey questions focused on student's academic demographics, attitudes about preparation by the Science program and how this is related to their current employment status.

The survey return rate was 8.0 percent overall, with 62 of the 773 surveys returned. Thirty (18%) current student surveys were returned; 12 (3.5%) former student surveys were returned and 20 (7.6%) graduate surveys were returned]. Caution should be used in interpreting the data, as this is a moderate to low return rate.

When asked about their initial reason for enrolling in the Science program, the majority of survey respondents noted transfer to a four-year institution as an important reason for enrolling at CCP. All former student respondents (12 respondents) alongside 90 percent of current students (27 respondents) and graduates of the Science program (17 respondents) stated this as a reason for enrolling, in areas such as pharmacy, physics and biology. In terms of earning an A.S., 47

percent of current student respondents (14 respondents), more than 50 percent of graduates of the Science program (10 respondents) and one third of former students (33 percent, four respondents) noted this as an important motivator. Additionally, respondents noted that gaining skills for a current or future job and taking courses that interested them were motivators in enrollment.

Former students are a unique case, as this category includes those who were no longer in the Science program at the time of the survey, but had not graduated the Science program – this includes those who transferred to another institution before completing the Science program or moved into an alternative program. When asked what factors led these students to leave the Science program, a majority of former students left CCP in order to transfer to another college (67 percent, eight respondents), which indicates that ‘former’ students are not necessarily unsuccessful. Additionally, former respondents left due to a conflict with work, academic difficulties, loss of interest in the field of science or a change of major (one respondent each).

As transferring is important to over ninety percent of all respondents, many noted that they had received high levels of preparation in the Science program. Twenty-seven percent (eight respondents) of current students felt that the preparation they are receiving for transferring to another college or obtaining a job in their desired field was excellent. Another 30 percent (9 respondents) of these respondents felt the preparation was good, 27 percent (eight respondents) felt the preparation was fair and 3 percent (one respondent) felt it was not helpful (former students were not asked this question).

Since leaving CCP, almost eight in ten (79 percent, 15 respondents) graduates of the Science program have transferred to another institution, with 74 percent (14 respondents) attending or graduating from a four-year college and 21 percent (four respondents) attending or graduating from a graduate school. A majority of graduates of the Science program had their full course-load transfer (87 percent, 13 respondents) and felt as though preparation for transfer was either excellent or good (67 percent/10 respondents and 27 percent/four respondents, respectively), where another six percent felt it was fair preparation for transfer. Graduates remarked on this preparation as very positive, with notes about “excellent professors” and the science program offering “a solid foundation” (see Appendix I for full comments). Additionally, many former student respondents (67 percent, eight respondents) have attended a four-year college part time, with an additional 25 percent (three respondents) having attended a graduate school, at institutions including Temple University, Widener University, Philadelphia University, American Public University, Rutgers University and Columbia University. In terms of employment, 74 percent (14 respondents) of graduates and 34 percent (two respondents each) are employed part- or full-time (current students were not asked this question).

Overall, student respondents were asked about their level of satisfaction with the instruction at CCP. All of the graduate respondents were satisfied with their instruction from CCP. Former student respondents were very positive about their experience with the Science program: all

respondents (100 percent, 12 respondents) felt satisfied with the course instruction and 92 percent (11 respondents) were satisfied with overall support they received from academic advising, course professors, financial aid, and other support services at CCP.

Students were asked about the strengths of the Science program. Current students noted a “well informed” and supportive faculty with “great transfer options.” One current student noted that the Science program is “similar to programs at four year institutions which means students won't be intimidated by the curriculum if they choose to complete a four-year degree,” where another focused on the flexibility “between general electives and natural science.” Graduate respondents noted the strengths of clear connections between course curriculum and transfer to four-year institutions, good selection of courses and also remarked positively on non-science program elements such as course professors and the financial aid support. Lastly, former students saw instruction as an area of strength for the CCP Science program, with tutoring noted as a benefit.

In turn, students were also asked what could be changed or added to improve the Science program. Students from each category remarked that more modern or technologically advanced lab equipment would serve as a benefit. Current students indicated that more mentoring, career or transfer oriented advising, connections between lab and lecture sections and changes to course offerings or requirements would add to the usefulness of the program. Graduates of the Science program had several suggestions for improvement: more tutoring for struggling students, connections to employment through internships or a co-op, courses in Latin, peer study groups, field trips, connections with local companies and seminars by experts in scientific fields (doctors, a post-doc, a Boeing employee, Merck employee, etc.). Former student improvement suggestions included additional diverse courses (including histology and immunology), transfer options and information, one-on-one academic counseling and more academic advising support towards degree completion rather than just a set of courses.

V. Resources

Facilities and Equipment

There are no facilities or items of equipment specifically dedicated for the sole use of those enrolled in the Science curriculum. Science laboratories and equipment are under the auspices of the respective science departments of Biology, Chemistry and Physics.

The facilities of the Biology, Chemistry and Physics departments from which the science courses originate are all used to support this program. Each department has developed a facility maintenance plan. These plans were incorporated into the College's previous 1997 Facilities Master Plan.

The most recent additions to the facilities are the two new biology laboratories just opened at the NERC following its campus expansion and the planned Microbiology/Biotechnology lab that will be built at the Main campus.

In addition, the natural science departments all monitor their immediate needs on an annual basis and appropriate requests are placed in their capital budget requests. Although they manage in the best way possible with available resources, some attention needs to be paid to outdated equipment and laboratory renovations in some areas are needed. The College is in the midst of developing a new Facilities Master Plan and science laboratories will be included. Even before the new Facilities Master Plan will be completed, science faculty have begun to work with the College Administration on designing two new laboratories and renovating a third laboratory.

How Well Current Facilities Support Program Needs

In academia, the laboratories in particular have undergone a transformation in design that allows for a quick transition from bench work to lecture/discussion areas. At the bench, the newer configurations allows for more easily accomplished group work. In addition, the technology capabilities of these spaces have been greatly enhanced to permit Internet access, image and information storage, instrumentation-based measurement, etc. CCP's Facilities Master Plan does have requests for this type of upgrading but the reality of the expense involved has continually delayed implementation.

On the main campus, Biology currently has two Microbiology Labs and five additional labs that are utilized for General Biology, Anatomy and Physiology I and II, Cellular and Molecular Biology, Organismal Biology and Genetics labs. A new microbiology/biotechnology lab will be created at the Main campus and is expected to operational for the Spring 2013 semester. New biology lab spaces were necessitated by the increasing demand for course offerings and to accommodate the implementation of the biotechnology program at Main and NERC campuses. Chemistry maintains four laboratories plus an instrumental lab on Main campus. Physics has one laboratory.

There is a single Chemistry laboratory space at the NERC, which is shared with Physics, and a laboratory at NWRC that is shared with Biology. With the exception of the lab at NWRC, these labs seem to fit the current needs of the program, though updates based on changes in technology will be necessary to meet future needs.

Chemistry and Physics laboratories at the Main campus, while adequate, need renovation. The Chemistry instrumentation room is poorly designed with many permanent benches and no sight lines to the room from other laboratories. In addition to the large number of instruments and their ancillary components (computers, printers, etc.) which are positioned on the benchtops, some of the area is taken up by a desk for one of the lab aides and much of the cabinetry is used for additional equipment and supply storage. As a result of its poor physical layout, it does not allow much space around the individual instruments for instruction. This space was particularly addressed in the Facilities Master Plan to overcome these impediments to instruction, student access and student supervision.

As mentioned above, at the NWRC, there is a single shared Biology-Chemistry laboratory. This shared lab space at the NWRC is inadequate for both Biology and Chemistry courses. Although the design of the laboratory adequately meets the needs of a Biology lab it is lacking in many ways as an appropriate Chemistry lab. Specifically, all the lab benches are around the perimeter of the room so that the instructor does not have good sightlines for oversight, there is no central area where necessary equipment and chemicals can be made easily available to the students so much is placed on carts and rolled into and out of the room each lab period, there are no natural gas outlets in the room and very limited ventilation hood space which has necessitated modifications to the performance of fairly common laboratory experiments and techniques. There is not instructor's demonstration bench or area to place the chemicals for an experiment except to use the perimeter benches which then makes the remaining available benchtop space very crowded. These benchtops are the wrong height for chemistry labs and are designed more for biology labs where students typically sit at the bench whereas chemistry students are more likely to stand during experiments. Chemistry Faculty had implemented procedures designed to compensate for the inadequacies of the laboratory but the situation is not the optimal one for student learning. Thus the space is not capable of fully supporting biology's or chemistry's current and future needs. There is a dire need to add space and to retrofit space at this campus to alleviate this situation. One way to address these concerns would be to add a separate chemistry lab area at NWRC and allow Biology to completely utilize the current lab space with additional renovations.

Lastly, at the West campus, only biology courses are offered.

What Future Needs Can Be Identified

Future needs revolve around reconfiguration of laboratory space for these three natural science course areas and enhancing technological capabilities throughout. A re-thinking of how the space should be designed and utilized should be given serious consideration when the time comes for renovation of these laboratory facilities.

Technology

Technology capabilities of the laboratory spaces in biology, chemistry and physics need to be greatly enhanced to permit internet access, image and information storage, instrumentation-based measurement, etc. White boards, projection systems, computers and access along with additional electrical capacity should be embedded. Future needs of science labs will require the enhanced technology so that students will benefit from the incorporation of video broadcasts, virtual demonstrations and access to on-line teaching materials.

The implementation of science courses through an on-line venue has proceeded cautiously due to the belief that hands-on laboratory experiences are essential for student learning. Currently there are only two Biology courses (BIOL 106: General Biology and STS 101: Introduction to Science, Technology and Society) which are offered via distance education. Chemistry offers

six courses on-line (CHEM 101-102: General Chemistry I and II, CHEM 103-104: General Chemistry I and II (without lab), CHEM 110: Introductory Chemistry, and CHEM 121: College Chemistry I). CHEM 101, 102, 110 and 121 are offered through a hybrid format in order to provide in-class laboratory experiences for students.

Other Resources

Equipment and instruments should be maintained, replaced and purchased as needed for the science classes that are most frequently taken by the “Science program” students. Very limited capital expenditures have severely impacted this ability. If the average useful life-span of an instrument is considered to be 10 years, most of the instruments in the three science departments have well-exceeded this threshold. Not only does this lead to a need for a large “repair budget,” but it also impacts the students who are being trained on less-than state-of-the-art instruments thus limiting their operational knowledge of the newer models and their exposure to newer instrumental methods found in industry.

Access to professional journals through the library should be enhanced as the College moves towards implementing undergraduate research experiences. Subscriptions to the online versions of journals such as the American Chemical Society’s Chemical and Engineering News (C&EN), Chemical Abstract Service (CAS) and *SciFinder* would be beneficial to students.

VI. Demand and Need for the Program

Since Fall 2005, demand for the program has been moderate as compared to the college as a whole (see table IV.D.2 and IV.D.3). The median number of students in the Science program has been 139, with 152 and 113 students serving as the high and low counts, respectively. This serves to be approximately two to four percent of the total Math, Science and Health Careers population at CCP. Enrollment has dipped in the last two semesters and while it too early to know if it is a trend, the Spring 2010 enrollment represents a 25 percent drop from the Spring 2009 enrollment (see Section IV.D and IV.E for further statistics).

In regards to the current and future job market, the Science program is needed, as illustrated by growth statistics published by the Occupational Outlook Handbook (OOH)¹ and the Bureau of Labor Statistics (BLS)². The OOH, published through the BLS, projects that “scientific and medical research—particularly research related to biotechnology—will be the primary driver of employment growth, but the development and production of technical products should also

¹ Source: Solis, Hilda L. and Keith Hall, 2010. “*Occupational Outlook Handbook* Index.” *Occupational Outlook Handbook, 2010-11 Edition*, Bureau of Labor Statistics / U.S. Department of Labor. Retrieved September 26, 2010 from http://www.bls.gov/oco/ooh_index.htm#P

² Source: Bureau of Labor Statistics, 2010. “Current Employment Statistics Highlights October 2010.” *Bureau of Labor Statistics*, November 5, 2010. Retrieved November 21, 2010, from <http://www.bls.gov/ces/#publications>

stimulate demand for science technicians in many industries”². For more traditional science-based areas, issues of the aging workforce are responsible for a great majority of employment opportunities, rather than creating new jobs in these fields.

The OOH focuses both on demand for training in certain fields, projections for demand and required education levels for a variety of occupations. “Job opportunities are expected to be best for graduates of applied science technology programs who are well trained on equipment used in laboratories or production facilities.”²

- Many health occupations are based in either health service fields or have a research / laboratory focus, including Physicians, Dentists, Pharmacists, Veterinarians and a variety of technicians or assistants for these occupations.
- Overall, admission into these specialized programs requires at least two years of prior undergraduate coursework. Physicians and Surgeons are required to complete a bachelors degree, where many dental, pharm.d., and veterinary programs will take students prior to the completion of their bachelor’s degree.
- By 2018, the BLS projects above national average increases in positions for these occupations (from a 16 percent increase for Dentists, depending on the specific specialization and up to 33 percent increase for Veterinarians).
- Additionally, environmental science and conservation technicians are seen as having the highest levels of growth (29 percent nationally from 2008 to 2018), with an “increased emphasis on specific conservation issues.”²
- High levels of growth are expected in areas which require cross-disciplinary backgrounds, including bio- and nanotechnology, especially in areas of research and development: environmental scientists have an expected eight percent increase and physical scientists have an expected 11 percent increase from 2004 to 2014 (see Appendix F for a selection of more detailed ESMI reports).³

Although the BLS does not address careers in ‘science’ by name, it notes recent job growth rates in the ‘healthcare’ area (ambulatory health care services, offices of physicians, outpatient care centers, home health services, hospitals and other health-related areas) with 8,000 or more jobs added each month since January 2008.

According to Pennsylvania Work Stats (PWS)⁴, there are several occupations that are projected to have total growth in Pennsylvania and nationally by 2016 (see figures in Table IV.1 below),

³ Source: Economic Modeling Specialists, Inc.

⁴ Source: PA Work Stats, 2010, based of figures from the PA Dept of Labor and Industry. “Occupational Employment & Projections.” Center for Workforce Information and Analysis. Retrieved October 1, 2010 from

based on 2006 figures. Significant levels of growth are projected for Life Scientists, Biological Technicians and Biomedical Engineers. PWS also projected moderate growth for Chemical Technicians and Chemists. Positions for Biological Scientists were projected to have moderate growth nationally, but see a moderate decline in job creation for the Pennsylvania workforce, due to no job growth and very little job replacement. In terms of Physicists, there are a consistent number of jobs for Pennsylvania residents and moderate growth nationally, also due to issues of replacement occurring rather than new job creation (see table VI.1 for specific values).

Table VI.1: PA Work Stats, Occupational Employment and Projects (2006)

Occupation	Pennsylvania Expected Change; Total Percentage Change 2006-2016	Nationally Expected Change; Total Percentage Change 2006-2016
Biological Scientists	Moderate Decline; -3.1 percent	Moderate Growth; 3.7 percent
Biomedical Engineers	Significant Growth; 23.2 percent	Significant Growth; 15.9 percent
Chemists	Moderate Growth; 6.4 percent	Moderate Growth; 9.1 percent
Dentists (General)	Moderate Growth; 8.2 percent	Moderate Growth; 9.2 percent
Life Scientists (various positions)	Significant Growth; 12.5 percent	Significant Growth; 15.3 percent
Pharmacists	Significant Growth; 15.5 percent	Significant Growth; 21.7 percent
Physicians and Surgeons	Significant Growth; 13.6 percent	<i>No Information Available</i>
Physicists	Steady/Constant; 0 percent	Moderate Growth; 6.8 percent
Veterinarians	Significant Growth; 30.1 percent	Significant Growth 35 percent

Source: PA Dept of Labor and Industry

VII. Operating Costs and Efficiency

Although the program has no budget code, program cost is determined by Full Time Equivalents (FTEs) within the program code through the College's Office of Planning and Finance.

2009-2010 statistics show the following:

- **Direct cost of program = \$444,261**
- **FTEs in program = 122.7**
- **Direct Cost program cost per FTE = \$3,620.47**

These statistics puts the Associate in Science program slightly above the median cost for all college programs (\$3,243.46) for the 2011 fiscal year. A year by year breakdown in the following charts indicate that Science program's direct cost per FTE and total cost per FTE have consistently been close to, but slightly higher than, the College-wide average.

Table VII.1: FTEs generated by the Science program and program's direct cost per FTE compared to average program direct cost per FTE

Fiscal Year	FTEs generated by the program	Program's direct cost per FTE	Average College-wide program direct cost per FTE
2003-2004	191.1	\$2,940.65	\$2,490.69
2004-2005	177.7	\$3,125.71	\$2,786.84
2005-2006	146.9	\$3,457.93	\$3,051.99
2006-2007	127	\$3,609.37	\$3,309.45
2007-2008	132.1	\$3,677.24	\$3,495.88
2008-2009	139.4	\$3,788.70	\$3,494.41
2009-2010	122.7	\$3,620.47	\$3,400.11

Source: Office of Finance and Planning: Table 30

Table VII.2: Annual Total Program Costs Per FTE

	2005-2006	2006-007	2007-2008	2008-2009	2009-2010
Program	\$6,946.64	\$7,269.92	\$7,7679.17	\$7,579.04	\$7,411.05
College-wide Average	\$6,666.82	\$7,019.64	\$7,486.11	\$7,343.31	\$7,190.51

Source: Office of Finance and Planning: Table 30

VIII. Findings and Recommendations

The goals of the Science program support the mission of the College by providing “a coherent foundation for College transfer, employment and life-long learning,” through a program that has built in course selection flexibility, specifically for transfer to a four-year institution. Dual admission agreements with Cabrini College, Cheyney University, Temple University, La Salle University, Rosemont College, Chestnut Hill College and Drexel University illustrate the clear trajectory students can follow in order to complete their coursework and transfer.

With national emphasis on the study of Science, Technology, Engineering and Mathematics (STEM), the Science degree is significant in its objective to meet the transfer needs of students. On the whole, students in the program do well in science courses as shown by the overall success rates of students in the three most common courses taken by students in all three disciplines and by the higher course completion rates, GPA, academic standing and success at departure as compared to the College as a whole. Most of the students who graduate from the Science program believe their preparation for transfer was either excellent or good and at least two-thirds to 100% per year transfer to another institution shortly after graduating from the College. Results of student and graduate surveys document that overall, students are very satisfied with the level of instruction received in the Science program. They particularly cite a “well informed” and “supportive faculty”

While all current science laboratories seek to update equipment as needed, capital funding has been limited over the years. Thus some key laboratory equipment has become dated and needs to be replaced. This was also noted by some of the students responding to the audit surveys.

The College has increased the availability of technology in the classroom but the availability of technology in the laboratory to increase student learning has not been as readily addressed. Thus the ability to bring the most current information to students can be hampered. Given that students have choices among different science-oriented degrees at the College, the message about which degree may be more or “the most” appropriate for the student may not always be clear. This is especially true in aligning career goals with program outcomes. It is especially important for students to have pertinent information early in their academic career. This may be a factor in the current retention rates for the program and the decreases in enrollment.

Recommendations

1. Increase enrollment in the program by developing a Recruitment/Retention Plan (Spring 2013) which will contain the following information:
 - a. Review of the curriculum to determine if new directions or alternative teaching strategies (i.e. hybrid courses) are warranted.
 - b. Course management schedule to assist students in selecting the correct sequence of courses in a timely manner
 - c. Plan to better utilize the Center for Science and Engineering Education as a vehicle to support recruitment of students
 - d. Analysis of retention issues and potential solutions so as to develop strategies to increase retention and provide stronger connections between students and the Science program.
 - e. Review of current and future mechanisms to increase the effectiveness of advising efforts related to the Science Program.

2. Review equipment and facilities needs (Fall 2012) in order to fully participate in the following initiatives:
 - a. New Facilities Master Plan discussions
 - b. Renovation and creation of new laboratories
 - c. Need for additional technology in the current and new laboratories

IX. APPENDICES

Appendix A – Program Revision, Spring 2003

Associate in Science

Minor Program Revision

Written by: Kathleen Harter

Chair, Department of Chemistry

Facilitator: Deborah D. Rossi

Date: July 7, 2003

Associate in Science (AS) Curriculum: Minor Revision

During discussions held in the Chemistry Department's faculty meetings over the past year, a need was recognized to revise the Associate in Science curriculum to increase students' eligibility to meet graduation requirements for the AS degree. Students who choose this select curriculum plan to transfer to a four-year institution and major in one of the natural sciences, engineering, pre-medicine or pre-pharmacy. As a result of anecdotal information garnered through faculty advising experiences for this curriculum, a significant number of students have left the College without being eligible for their AS degree, primarily because they have opted not to take MATH 172, Calculus II. Instead they have taken an additional laboratory science course. Many of the students leaving the College are pre-pharmacy majors and MATH 172 is not a required course for this very popular program. (Attached are the recommended course requirements and CCP equivalencies for Temple University and for several programs at the University of the Sciences in Philadelphia, including their pharmacy program). This minor revision to the AS Curriculum would require that the current MATH 172 core requirement be amended for students to have the option to take MATH 172 or another Laboratory Science course. Adding this course option will positively impact the College's graduation rate in the Science curriculum.

Program revision in order to comply with General Education requirements

College-wide general education requirements go into effect in Fall 2009. This information documents that the program is in compliance with the new general education requirements. The General Education Requirements are as follows:

Social Science (3 cr.)
Humanities (3 cr.)
Mathematics (3/4 cr.) – at or above MATH 118
Natural Science (3/4 cr.)
English 101
English 102 or 112
Writing Intensive (3 cr.)
Interpretive Studies (3 cr.)
American/Global Diversity (3 cr.)
Information Literacy (Engl 102)
Technological Competency (CIS 103)

Description of Program Compliance

Program: Science

Previous Number of Credits Required for Graduation = 60

Number of Credits Required for Graduation with General Education incorporated into the program = 60

Provide a brief explanation of the decision(s) made to comply with the General Education Requirements and complete the following chart. Indicate how your program meets the General Education Requirements. In the last column show which General Education Requirement each course fulfills.

- A *General Elective* has been replaced with CIS 103 to meet the *Technology Competency* requirement

Science

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
FIRST SEMESTER			
ENGL 101 - English Composition I		3	Composition
MATH 171 – Calculus I Or MATH 165/166 – Differential Calculus I and II	MATH 162 or Dept. Head Approval or placement	4	Math
Natural Science with Lab Elective		4	Science
CIS 103		3	Tech Comp
SECOND SEMESTER			
ENGL 102 - English Composition II	ENGL 101	3	Composition & Info Lit
MATH 172 - Calculus II Or Natural Science with Lab Elective	MATH 171 or 166 or Dept. Head Approval	4	
Natural Science with Lab Elective		4	
Humanities Elective		3	Humanities
Natural Science with Lab Elective		4	
THIRD SEMESTER			
Natural Science with Lab Elective		4	
Social Science Elective		3	Social Science
Humanities Elective		3	
General Elective		3	
Natural Science with Lab or General Elective		3/4	
FOURTH SEMESTER			
Natural Science with Lab or General Elective		3/4	
Social Science Elective		3	
General Elective		3	
General Elective		3	
MINIMUM CREDITS NEEDED TO GRADUATE		60	

GENERAL EDUCATION REQUIREMENTS

All General Education requirements are met through required courses (as indicated above) except for the **Writing Intensive** requirement, the **Interpretive Studies** requirement and the **American/Global Diversity** requirement. Therefore, in order to graduate, students in this program must choose one course that is designated Writing Intensive, one course that is designated Interpretive Studies and one course that is designated American/Global Diversity. The same course may be used to fulfill more than one of these requirements. A list of courses that fulfill these requirements and a more detailed explanation of the College's general education requirements appears elsewhere in this catalog and on www.ccp.edu.

For More Information Contact:

The Division of Math, Science and Health Careers Room W2-7, 1700 Spring Garden Street, Philadelphia, PA 19130, Telephone (215) 751-8430; or the College Information Center (215) 751-8010.

Program Learning Outcomes

Regional accreditors now require that the College lists learning outcomes in the catalog. Please list learning outcomes for your program exactly as you wish them to appear in the catalog.

Upon completion of this program graduates will be able to:

- Successfully transfer into a science-based program at a four-year institution
- Demonstrate an understanding of scientific principles and concepts and be able to apply this knowledge to the solution of problems and performance of experiments in one or more of the natural science disciplines
- Competently perform laboratory tasks related to their scientific discipline
- Communicate information in a manner appropriate to their scientific discipline using verbal, written and graphical means.

Appendix C – NERC Biotechnology/Microbiology Lab Equipment Budget

Ordered as of March 19, 2010, PREP ROOM 317

<i>COMPANY</i>	<i>ITEM</i>	<i>QUANTITY</i>	<i>UNIT COST</i>	<i>TOTAL COST</i>
Cole-Parmer	Shaker, Digital	1	\$3,000	\$3,000.00
Fisher	Microcentrifuge	1	\$1,500	\$1,500.00
Fisher	Isotemp Freezer	1	\$1,000	\$1,000.00
Fisher	Bunsen Burners	21	\$1,430	\$30,030.00
Gettinge	Autoclave	1	\$100,000	\$100,000.00
Adorma	Digital Camera	1	\$300	\$300.00
Fisher	UV illuminator	2	\$475	\$950.00
I Miller	Microscopes	48	\$1,000	\$48,000.00
Fisher	Electrophoresis set-up	11	\$6,000	\$66,000.00
R & S Sales	Ice Machine	1	\$2,400	\$2,400.00
Fisher	Slide Warmer	1	\$690	\$690.00
Fisher	Water Baths	2	\$1,100	\$2,200.00
Fisher	Incubator	2	\$4,700	\$9,400.00
Millipore	Water Still	1	\$5000	\$5,000.00
Total		94		\$270,470.00

The Center for Science and Engineering Education Advisory Board

Spring 2011

Dr. Joseph Bordogna, Alfred Filter Moore Professor of Engineering; Dean Emeritus of the School of Engineering – University of Pennsylvania

Jennifer Cardoso, Program Director Philadelphia Academies
230 South Broad Street, Suite 1300 Philadelphia PA 19102
JBCardoso@academiesinc.org
215-546-6300 ext. 122

Steve Cox, Associate Director Philadelphia Alliance for Minority Participation and Advisory to the Drexel University Chapter of the National Society of Black Engineers – Drexel University

Carol Fixman, Executive Director Philadelphia Education Fund, Philadelphia Math Science Coalition

Pat Hecht, Coordinator Philadelphia Tech Prep Consortium, CCP

John Lucas, Vice President of Academic Affairs, Wistar Institute

Velda Morris, Robotics Education Specialist, School District of Philadelphia, Division of College Readiness
Office of Secondary School Reform, 440 N. Broad Street, Suite 212, Philadelphia, PA 19130
vmorris@philasd.org
(215) 400-4130

Eric Nelson, Executive Vice President, Philadelphia Workforce Investment Board

Sara Snell, President of the National Society of Black Engineers (NSBE), CCP Student

Marcella Stokes, Project Engineer, General Services Administration

Steven Tang, President and CEO University City Science Center

COMMUNITY COLLEGE OF PHILADELPHIA

Bylaws of

The Center for Science and Engineering Education

August 2010

Article I. Mission

Section 1.1 – General Purpose

Subsection 1.1.1 – The Center for Science and Engineering Education (CSEE) will support the development of partnerships and synergistic relationships with science and engineering related employers to further critical College goals. For example, seminars and workshops in high growth employment areas could provide Corporate Solutions with opportunities to reach out to, and build relationships with, new corporate partners. New partnerships could, in turn, provide Institutional Advancement and the Division of Communications and Government Relations with opportunities for additional corporate support, in the form of corporate giving, partnering with the College in grant applications, and in the College's dealings with governmental entities.

Subsection 1.1.2 – The CSEE will create a strong base from which to seek Federal and State grants, as well as other funding that is science and STEM related.

Subsection 1.1.3 – The CSEE will increase scientific literacy in the community by offering seminars and/or conferences highlighting the societal impact of science and engineering, as well as exploring current trends in science and technology education.

Subsection 1.1.4 – The CSEE will assist in effectively marketing science and scientific technology program offerings and services to current and potential students inside and outside the College, including outreach to secondary schools and to industry.

Subsection 1.1.5 – The CSEE will showcase faculty expertise and offerings in the College's science areas and provide a forum for students to present their research projects.

Subsection 1.1.6 – The CSEE will provide a venue for students to obtain information related to different careers and research opportunities in a scientific field.

Section 1.2 – Specific Purpose

Subsection 1.2.1 – Enhance opportunities for students to explore career options in a science-related field.

Subsection 1.2.2 – Improve student retention and address parity issues by providing a focal point for students whereby they can obtain accurate and timely information regarding science and technology programs. A special emphasis will be placed on student groups that have faced the most significant barriers to success and, that have traditionally been underrepresented in science and engineering disciplines including low-income students, women and minority students.

Subsection 1.2.3 – Work to enhance diversity in the science related careers by increasing minority student recruitment, retention and involvement in science and scientific research via programmatic initiatives that build on existing programs, such as Alliance for Minority Participation (AMP), a program designed to increase the number of underrepresented graduates in science, engineering, and mathematics, and Bridges to the Baccalaureate degree initiative, which provides support to help minority students make the transition at a critical stage in their development as scientists. The program is aimed at helping students make the transition from a community college to a four year institution with significant and intentional academic supports and research opportunities.

Subsection 1.2.4 – Promote interdisciplinary collaboration to strengthen offerings in physical and natural sciences and related technologies.

Subsection 1.2.5 – Facilitate efficient and effective communication among departments regarding areas of mutual interest.

Subsection 1.2.6 – Highlight the new areas/fields where it would be important for Community College of Philadelphia to respond quickly to changes in technology and technology-related workforce needs by providing support for the development of appropriate academic and workforce development programs.

Subsection 1.2.7 – Promote a broader understanding of science and emerging technologies and their impact on society to a wider audience.

Subsection 1.2.8 – Promote the importance of science and the scientifically based technology programs at the College to a wide range of audiences.

Subsection 1.2.9 – Provide professional development opportunities for faculty both in scientific content areas and in pedagogy.

Article II. Membership

Section 2.1 – Composition

Subsection 2.1.1 – All faculty in the Biology, Chemistry, and Physics departments, and any future science/technology departments established by the Division of Math, Science and Health Careers in the sciences and/or engineering fields, constitute the members of the CSEE. Full time and visiting lecture faculty have voting rights should the necessity of a vote be required.

Section 2.2 – Annual Meeting

Subsection 2.2.1 – There will be an annual meeting to be held during the professional development week in the Spring semester, the time, date and location of which to be announced in the PD booklet. Preference will be given to the time slot prior to departmental meetings, should this be available.

Section 2.3 – Special Meetings

Subsection 2.4.1 – On the occasion that additional or special meetings are required, these will be announced at least 2 weeks prior to the meeting through an email announcement. Time and date will be established in an attempt to maximize the number of faculty who can attend.

Section 2.4 – Meeting Agenda

Subsection 2.4.1 – A written agenda will be forwarded to faculty by the secretary through email at least 3 days in advance of any meeting.

Subsection 2.4.2 – The agenda will be established by the co-chairs of the CSEE in consultation with the executive board.

Section 2.5 – Voting

Subsection 2.5.1 – Passage of a motion requires a simple majority (i.e., one more than half the members present) should a quorum exist.

Subsection 2.5.2 – Faculty who are unable to attend a meeting may send a written proxy vote through a member of the executive board.

Section 2.6 – Quorum

Subsection 2.6.1 – A quorum will be considered to exist if at least 1 voting faculty of the three departments are represented at the meeting.

Section 2.7 – Conduct of Meetings

Subsection 2.7.1 – The co-chairs of the CSEE will preside over all meetings and the Secretary shall keep the minutes with the current edition of Robert’s Rules of Order governing the conduct of the meeting.

Article III. Executive Board

Section 3.1 – Number and Qualification

Subsection 3.1.1 – Current Department heads are ex officio members of the executive board.

Subsection 3.1.2 – Two additional members of each department are appointed to serve on the executive board. Each department will establish its own criteria for selection (see Appendix A).

Subsection 3.1.3 – Secretary: The Secretary shall be responsible for the minutes of the Board, keep all approved minutes in a minute book, send out copies of minutes to all, and send out the agenda for the annual meeting.

Section 3.2 – Election and Term of Office

Subsection 3.2.1 – Co-chairs: Volunteer/Selected/Elected from the pool of members of the Executive Board.

Subsection 3.2.2 – Secretary: Volunteer/Selected/Elected/Designation from the pool of members of the Executive Board

Subsection 3.2.3 – Terms of office for appointed members of the Executive Board are 2 years, the terms of which are to be staggered.

Section 3.3 – Delegation of Powers

Subsection 3.3.1 – Co-chairs shall preside at all Board meetings, appoint committee members, and perform other duties as associated with the office.

Section 3.4 - Removal or Resignation of Members of the Executive Board

Subsection 3.4.1 – Resignation of a member of the Executive Board must be provided in writing to the Department Head.

Subsection 3.4.2 – The Department Head may remove a member of the Executive Board as outlined by department policy. (See Appendix A)

Section 3.5 - Vacancies

Subsection 3.5.1 – Departments will fill vacancies in accordance with their established written policies. (See Appendix A)

Section 3.6 - Regular Meetings

Subsection 3.6.1 – The executive board will meet monthly or as necessary.

Section 3.7 - Special Meetings

Subsection 3.7.1 – A meeting of the CSEE Advisory board will be conducted at a minimum of once per year.

Section 3.8 - Quorum of the Executive Board

Subsection 3.8.1 – All departments must be represented for a vote to be binding. Voting is by consensus except in the case of these By-laws. (See section VI. Amendments to the By-laws below)

Section 3.9 - Conduct of Meetings

Subsection 3.9.1 – An agenda shall be provided at least 2 days in advance of any meeting.

Article IV. Committees

Section 4.1 – Roles of committees

Subsection 4.1.1 – Planning: propose the long term plans of the CSEE.

Subsection 4.1.2 – Fundraising: work with Institutional Advancement in grant writing and identifying potential sources of funds the CSEE and the events we sponsor.

Subsection 4.1.3 – Events: oversee CSEE events; these should occur at a minimum of once per semester.

Section 4.2 – Other committees to be constructed by the Executive Board as needed.

Article V. Conflict of Interest

Section 5.1 – No decision by the Center can abrogate the Union contract.

Section 5.2 – The Center cannot take any action which infringes on the individual rights of any department.

Article VI. Amendments to the By-laws

Section 6.1 – These by-laws may be amended by a two-third vote of members of the Executive Board present at any meeting, provided a quorum is present and a copy of the proposed amendment(s) are given to each Board member at least one week prior to said meeting. A proxy vote may be presented to either the secretary or one of the co-chairs if an individual cannot attend the meeting.

Appendix A: Departmental Procedures for Determining Representation on the Executive Board

Each department will establish their own procedures.

Biology Department

Appointment of member to the executive board
Removal of member of the executive board
Vacancies

Chemistry Department

Appointment of member to the executive board
Removal of member of the executive board
Vacancies

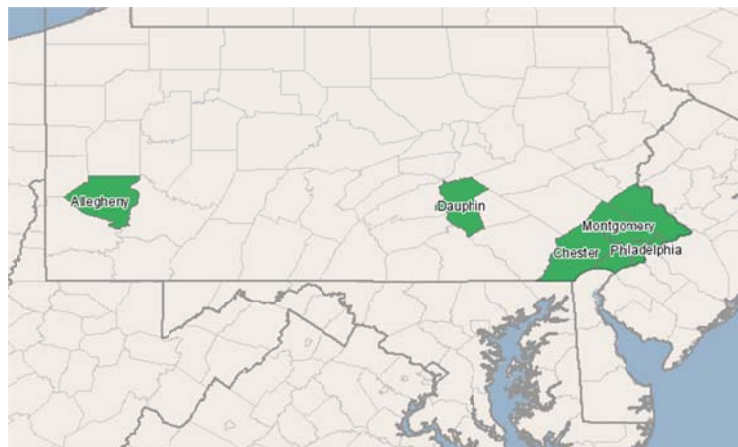
Physics Department

Appointment of member to the executive board
Removal of member of the executive board
Vacancies

Community College of Philadelphia

1700 Spring Garden Street
Philadelphia, Pennsylvania 19130
215.751.8350

Occupation Report



Region Info

Region: Pennsylvania

County Areas: Allegheny, Pennsylvania (42003), Bucks, Pennsylvania (42017), Chester, Pennsylvania (42029), Dauphin, Pennsylvania (42043), Delaware, Pennsylvania (42045), Montgomery, Pennsylvania (42091), Philadelphia, Pennsylvania (42101)

Occupation	Education Level
Environmental scientists and specialists, including health (SOC 19-2041)	Master's degree

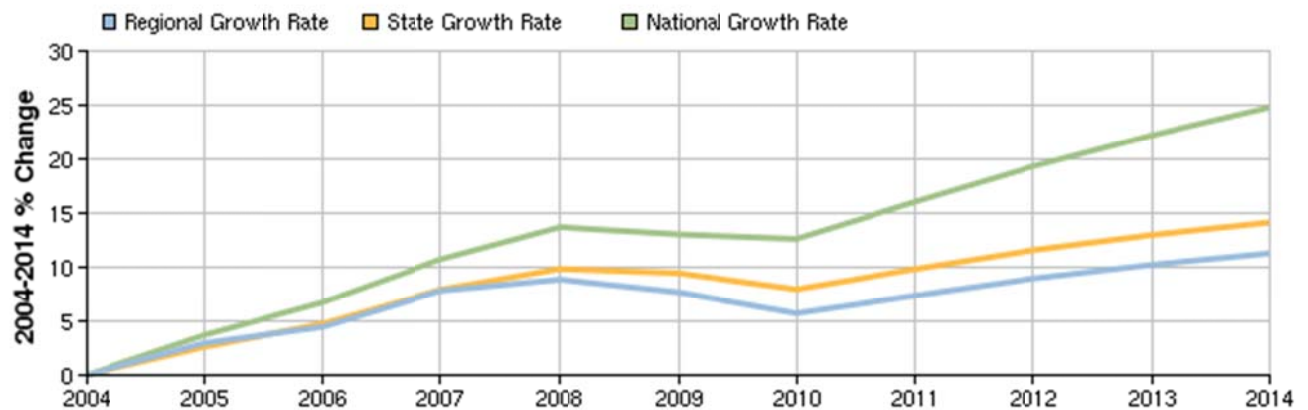
Executive Summary

Basic Information	
2004 Occupational Jobs	1,139
2014 Occupational Jobs	1,268
Total Change	129
Total % Change	11.33%
Openings	534
2010 Median Hourly Earnings	\$29.97

Economic Indicators	
2004 Location Quotient	0.72
2014 Location Quotient	0.66

Source: EMSI Complete Employment - 4th Quarter 2010

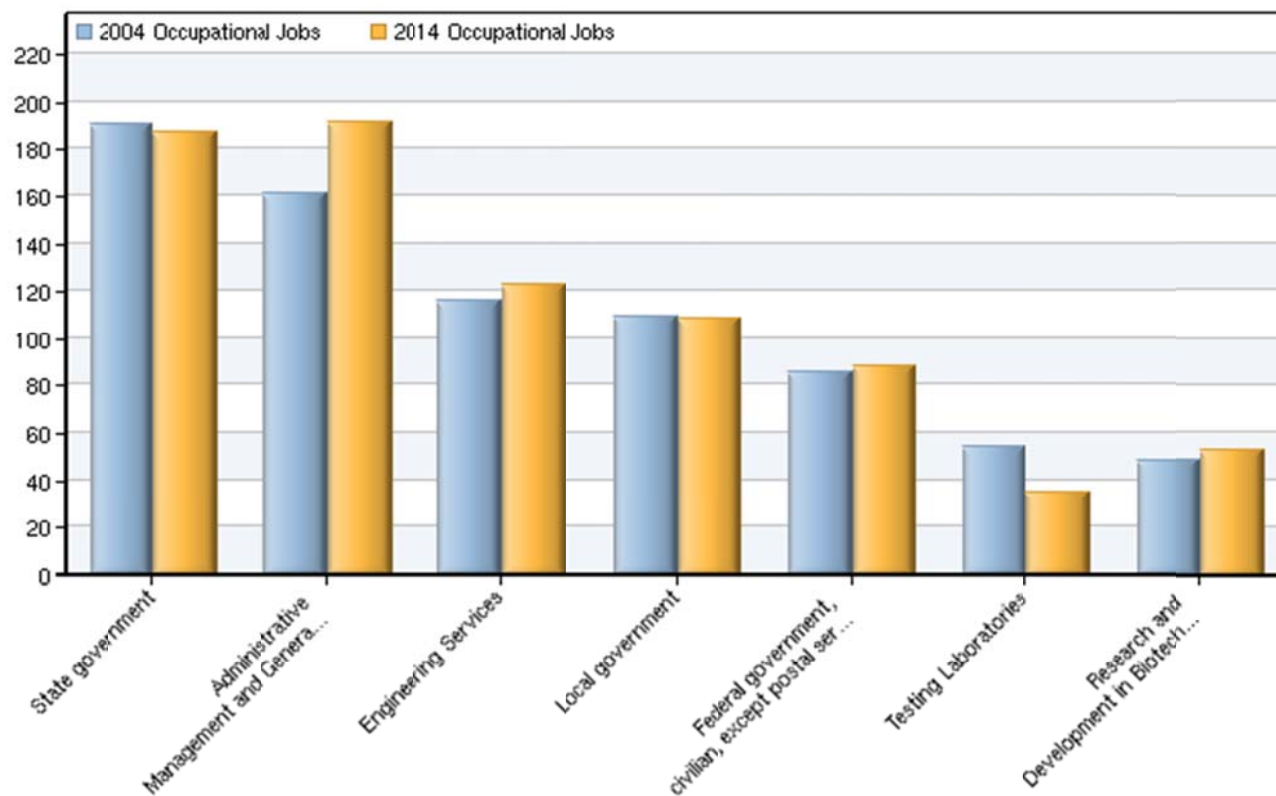
Occupational Change Summary



Region	2004 Jobs	2014 Jobs	Change	% Change	Openings	2010 Median Hourly Earnings
Regional Total	1,139	1,268	129	11%	534	\$29.97
State Total	1,870	2,134	264	14%	934	\$27.21
National Total	80,210	100,099	19,889	25%	49,349	\$28.07

Source: EMSI Complete Employment - 4th Quarter 2010

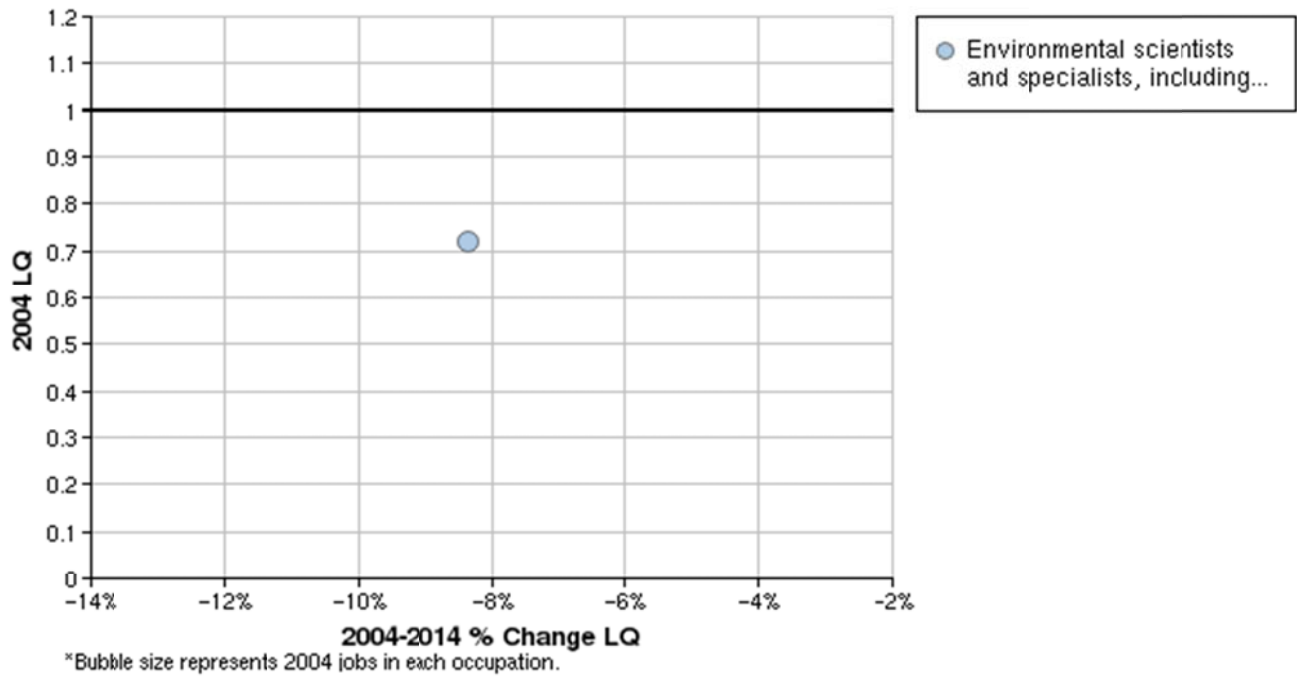
Top Industries for Selected Occupation



NAICS Code	Name	2004 Jobs	2014 Jobs	Change	% Change
920000	State government	190	187	-3	-2%
541611	Administrative Management and General Management Consulting Services	161	191	30	19%
541330	Engineering Services	116	122	6	5%
930000	Local government	109	108	-1	-1%
911000	Federal government, civilian, except postal service	85	88	3	4%
541380	Testing Laboratories	54	35	-19	-35%
541711	Research and Development in Biotechnology	48	52	4	8%

Source: EMSI Complete Employment - 4th Quarter 2010

Location Quotient Breakdown



SOC Code	Description	2004 Jobs	2004 LQ	2014 LQ
19-2041	Environmental scientists and specialists, including health	1,139	0.72	0.66
	Total	1,139	0.72	0.66

Source: EMSI Complete Employment - 4th Quarter 2010

Occupation	Education Level
Physical scientists, all other (SOC 19-2099)	Bachelor's degree

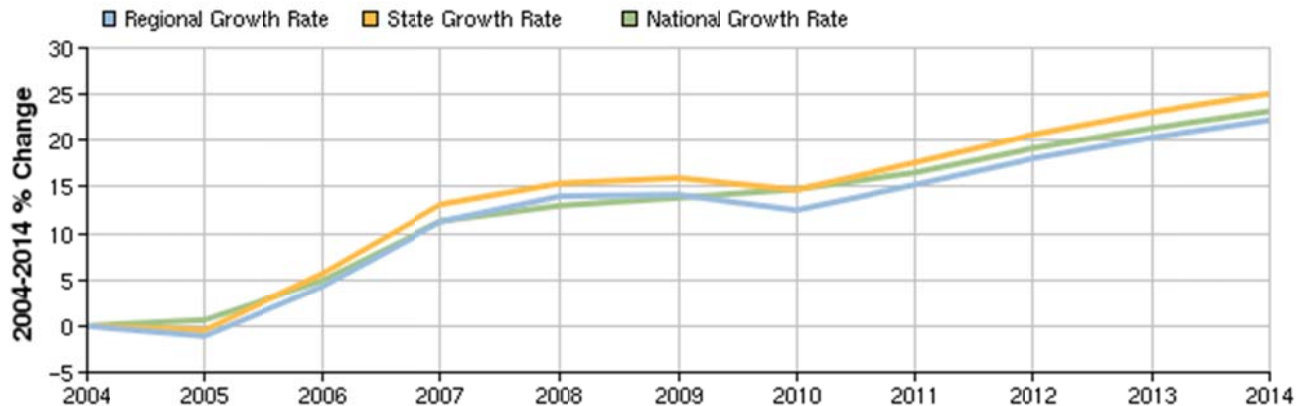
Executive Summary

Basic Information	
2004 Occupational Jobs	445
2014 Occupational Jobs	544
Total Change	99
Total % Change	22.23%
Openings	256
2010 Median Hourly Earnings	\$31.30

Economic Indicators	
2004 Location Quotient	0.75
2014 Location Quotient	0.77

Source: EMSI Complete Employment - 4th Quarter 2010

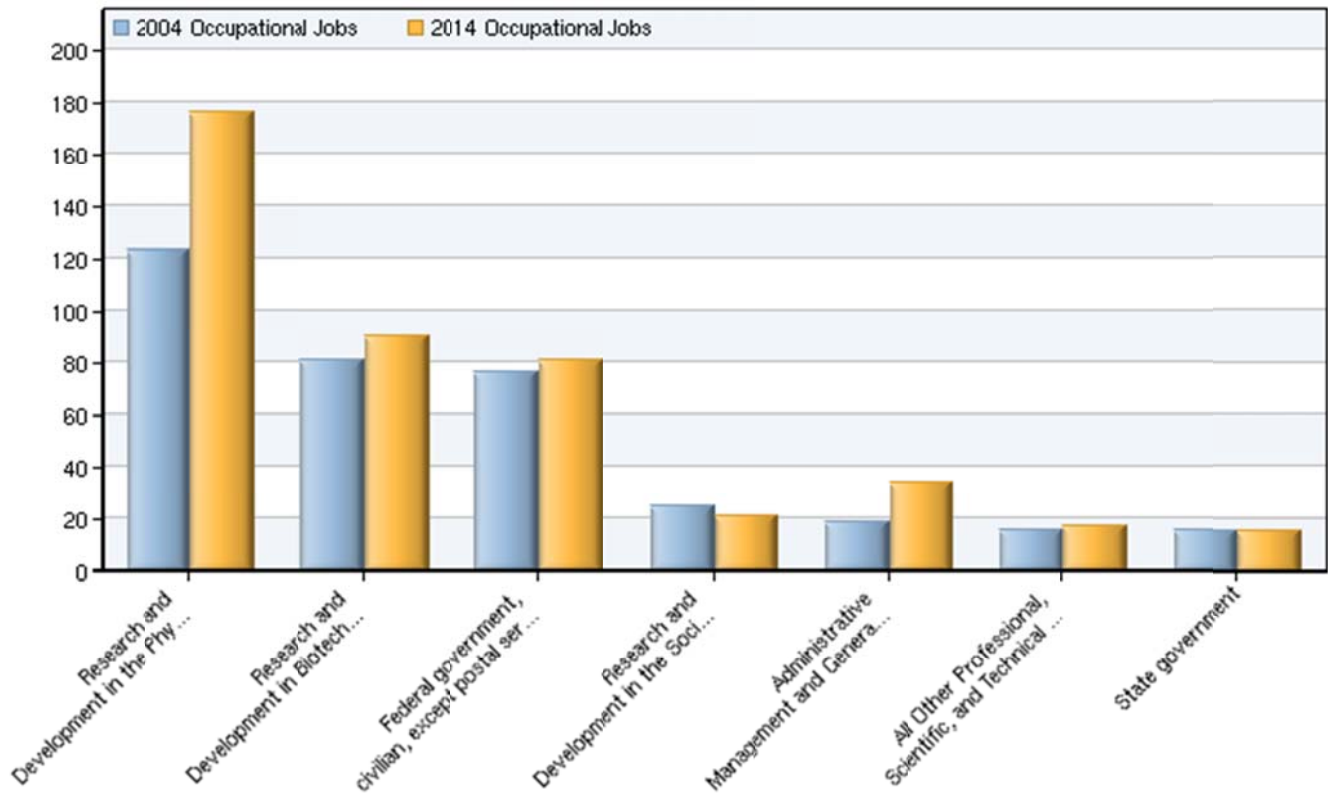
Occupational Change Summary



Region	2004 Jobs	2014 Jobs	Change	% Change	Openings	2010 Median Hourly Earnings
Regional Total	445	544	99	22%	256	\$31.30
State Total	650	813	163	25%	410	\$30.72
National Total	29,948	36,892	6,944	23%	18,166	\$36.72

Source: EMSI Complete Employment - 4th Quarter 2010

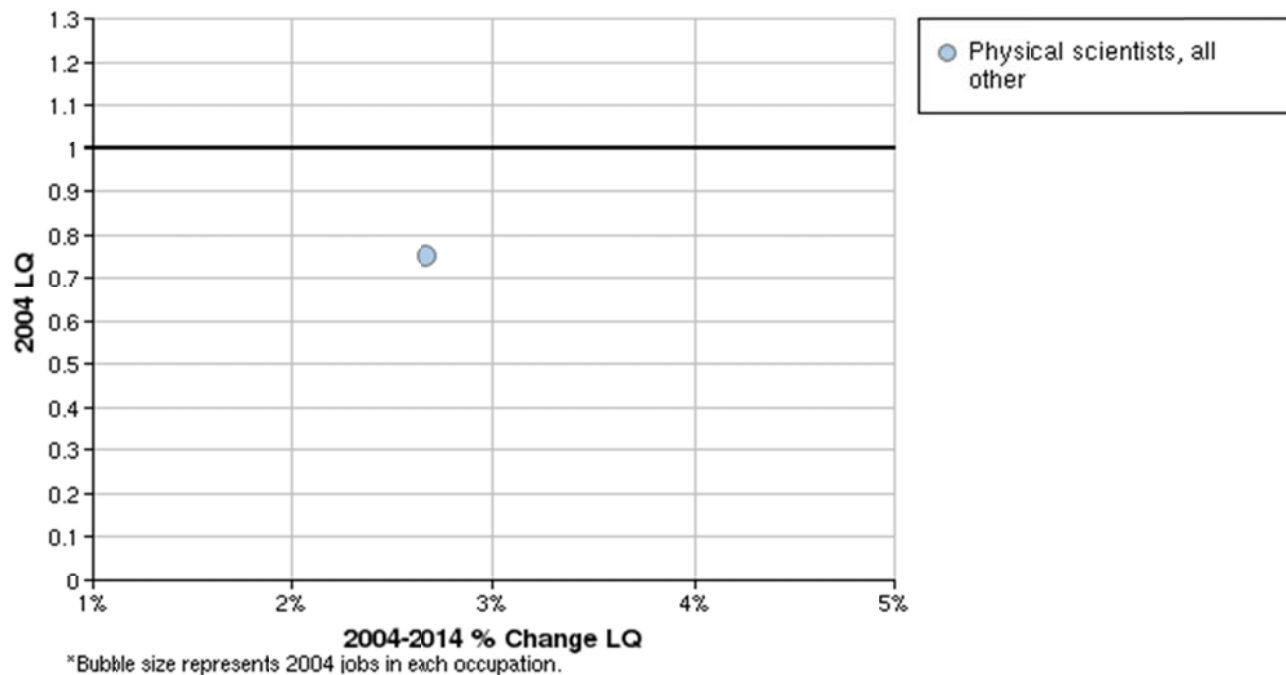
Top Industries for Selected Occupation



NAICS Code	Name	2004 Jobs	2014 Jobs	Change	% Change
541712	Research and Development in the Physical, Engineering and Life Sciences (except Biotechnology)	123	176	53	43%
541711	Research and Development in Biotechnology	81	90	9	11%
911000	Federal government, civilian, except postal service	76	81	5	7%
541720	Research and Development in the Social Sciences and Humanities	25	20	-5	-20%
541611	Administrative Management and General Management Consulting Services	19	34	15	79%
541990	All Other Professional, Scientific and Technical Services	16	17	1	6%
920000	State government	16	15	-1	-6%

Source: EMSI Complete Employment - 4th Quarter 2010

Location Quotient Breakdown



SOC Code	Description	2004 Jobs	2004 LQ	2014 LQ
19-2099	Physical scientists, all other	445	0.75	0.77
	Total	445	0.75	0.77

Source: EMSI Complete Employment - 4th Quarter 2010

Data Sources and Calculations

Industry Data

In order to capture a complete picture of industry employment, EMSI basically combines covered employment data from Quarterly Census of Employment and Wages (QCEW) produced by the Department of Labor with total employment data in Regional Economic Information System (REIS) published by the Bureau of Economic Analysis (BEA), augmented with County Business Patterns (CBP) and Nonemployer Statistics (NES) published by the U.S. Census Bureau. Projections are based on the latest available EMSI industry data, 15-year past local trends in each industry, growth rates in statewide and (where available) sub-state area industry projections published by individual state agencies and (in part) growth rates in national projections from the Bureau of Labor Statistics.

Location Quotient

Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region unique in comparison to the national average.

State Data Sources

This report uses state data from the following agencies: Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis.

**Community College of Philadelphia
Summary Credit
Course Evaluation**

Course Number and Name CHEM 121 College Chemistry I

Catalog Description see attached

1. Is the course consistent with the college Mission?

Yes; it provides a coherent foundation for college transfer and employment.

2. Does the credit assignment meet accepted practices?

Yes; most, if not all, institutions offer College Chemistry as a 4 credit course consisting of three hours of lecture and 3 hours of lab. In some institutions, the lecture and lab may carry separate credits (3+1).

3. Do the course materials reflect the knowledge in the program's field of study?

Yes; the text is current and is updated periodically. Software tutorials are available for student use; they are supplied with the textbook while some other supplements have been purchased. The laboratory schedule is being evaluated for including some "nano" topics.

4. Is the catalog description of the course accurate?

Yes

5. Is this course content appropriate to the goals, purposes and/or objectives/activities of the course?

Yes; this course is designed for students who are majoring in science or a related field such as medicine or pharmacy. As such, it is a very demanding course.

6. Do the goals match needed knowledge base and skills?

Yes; feedback indicates that the students who have had this course are well prepared for their next courses (Organic Chemistry, etc). Likewise, this course transfers appropriately to other institutions.

7. If applicable, is the course content similar to that of other transfer institutions?

Yes, the course transfers to surrounding institutions and is regularly recommended by those institutions to their students as appropriate to take in the summer for reverse transfer of the credits.

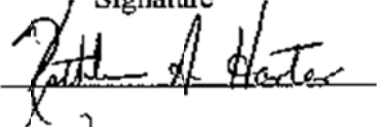

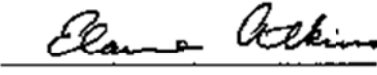
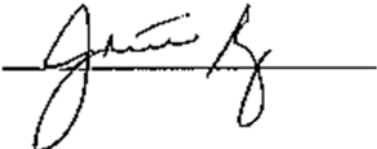
8. Has the Department head presented the Summary of the Credit Course Evaluation findings for departmental review and appropriate action?

Yes; the report is attached. All instructors agreed with the summary; the only comment (from multiple faculty members) was that a recitation period would be beneficial.

Action Plan

- *Insert appropriate nano-science experiments into the lab schedule and to emphasize the nano-realm of atoms in the lecture.*
- *Assess the College's and the Department's multimedia holdings and update them as appropriate.*
- *Seek increased access to the internet from the classrooms*
- *Explore the possibility of a "recitation" period for the course*
- *Incorporate a writing/research assignment into the syllabus to impact student's writing skills and expose them to scientific literature/resources.*

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.

	Signature	Date
Department Head		<u>1-30-06</u>
Dean		<u>2/16/06</u>
Curriculum Development Coordinator		<u>2/21/06</u>
Vice President of Academic Affairs		<u>2/17/06</u>

Course Evaluation Summary Chemistry 121

The results of the *Course Evaluation* submitted by Chemistry 121 instructors have yielded the following information:

Course Design

- The pre-requisites are sufficient. [The Department's *Student Course Evaluation* data concurs with this: 91.7 % of the Spg 04 and 63.6 % of the Fall 03 students agree that the pre-requisites are adequate. Interestingly, 38.9% of the Spring students had taken Math 161 while that % was only 28.8% for the Fall students echoing the Department's concern that lack of math preparation is one of the biggest stumbling blocks to success in the course.]
- The time allotted is sufficient. Nevertheless, a one-hour recitation period per week would be beneficial.
- The course content is stimulating and challenging. Having a separate Honors section is good. Student interest is enhanced by relating the material to other science courses and personal experiences.
- Students are prepared for their next level of studies and for careers. This course is essential for students who wish to go on to medicine, pharmacy, chemistry and chemical technology careers. [Student data: 85.7% agreed that the course increased their desire to continue learning about this material, prepared them to perform professionally (81.3%), was practical and useful for their program (88.3%) and taught them to do careful and accurate work (83.7%)]
- Problem-solving skills are emphasized. The work required is appropriate and very intensive. Although there is no prescribed methodology in the syllabus, all instructors are using a large variety of techniques including lecture, discussion, demonstration, problem-solving, skills, lab and relevant internet sites (informational and textbook supplements) to implement the syllabus. The use of *MyCCP* will provide additional support.
- The evaluation is appropriate to the course material. (Student data: 90.6 % agree) The testing instruments are instructor-generated and include multiple choice, essay/free response and problem solving.
- The textbook and the lab book are rated "above average" and at the appropriate reading level. [Student data: 89.2% agree that the textbook provided good support for the classroom material.]
- The writing assignments (mostly laboratory reports and laboratory notebooks) are appropriate and adequate. Additional optional writing assignments could be incorporated. [Student data was mixed: approximately 35% said that the course had no effect on improving their writing skills, 40% reported improvement and 25% had no opinion. In addition, 50% reported that the course *provided opportunities* to improve their oral and written skills while 32% said there were no opportunities and 18 % had no opinion.]
- Course content and instructional materials are appropriate but somewhat inadequate. Many of the College's holdings are out-dated. Overheads need to be made available. Increased availability of technology in the classroom (internet access, computer projectors, student response systems, etc.) would be of great benefit. [Student data: 41.9 % reported use of multimedia and 40.1% reported use of the internet; 88.4% reported use of instrumentation in the lab.]

Course Relevancy

- Course is a firm and necessary basis for future studies in any type of science-related major. [Student data: 87.8% agreed that the course was useful for their program and 76.7 % said the class prepared them to perform professionally in the classroom or the workplace.]

Course Supplies and Equipment

- They are adequate. *MyCCP* will enhance the courses as faculty increase their usage of the *My Courses* feature.

Student Retention and Performance

- About 2/3 of the students who take the course complete it successfully. Summer students seem to do slightly better; ¾ earn A, B or C. (See *Grade Distribution Tables*). Math deficiencies are still viewed as having a negative impact on success and retention although not much as in Chem 101 and Chem 110.
- Student enthusiasm varies from *average* to *very high*.

General Questions

- The value of this course to students is *high* to *very high* based on their career goals after CCP. [Student data: 87.8% reported that the course was practical and useful for their program.]

Suggestions

- Eliminate in-service week and add another week to the courses
- Have dedicated Chemistry department multimedia equipment.
- Internet access from the classrooms
- Recitation period (one hour each week)
- Better coordination of the lecture topics and lab experiences.

CHEM 121-122 3-3-4

College Chemistry 3-3-4

Atomic structure, classification of matter, chemical and physical properties of the different states of matter, driving forces for chemical reactions, types and geometry of chemical bonds, periodic law, equilibrium chemistry, inorganic chemistry of several groups of elements and an introduction to organic chemistry.

Laboratory covers introductory quantitative techniques, equilibrium chemistry and the qualitative analysis of the more important anions and cations. Prerequisites: CHEM 110 (or permission of the Department Head) and MATH 118. CHEM 121 with grade of C or better is prerequisite to CHEM 122. For science, engineering and Chemical Technology students.

Additional course fee (CHEM 121 and CHEM 122): \$180.

Chem 121 Grade Distribution Table							
	A	B	C	D	F	W	I
Fall 2001	28	34	23	5	12	32	
Spring 2002	20	26	22	8	16	20	
Fall 2002	34	33	31	10	18	27	
Spring 2003	37	44	21	5	20	29	
Fall 2003	35	31	27	13	18	15	
Spring 2004	38	27	29	5	11	23	2
Fall 2004	25	34	31	8	19	22	
Spring 2005	18	25	19	6	16	24	
TOTAL	235	254	203	60	130	192	2
n=	1,076						
Average %	21.8%	23.6%	18.9%	5.6%	12.1%	17.8%	0.2%

Total A+B+C = 64.3%

Summer Chem 121 Grade Distribution Table							
	A	B	C	D	F	W	I
Summer 1, 2002	14	23	13	3	6	6	1
Summer 2, 2002	4	8	6	0	5	1	0
TOTAL	18	31	19	3	11	7	1
n=	90						
Average %	20.0%	34.4%	21.1%	3.3%	12.2%	7.8%	1.1%

Total A+B+C **75.6%**

Appendix H – Chemistry 121 Goals

Chemistry 121 (CHEM 121) – College Chemistry

Course Goals

This course is designed for students majoring in science or engineering fields. Upon successful completion of this course students should be able to:

- Use the metric system as a tool for performing calculations for measurements of length, area, mass, volume, energy, and amount of substance in terms of moles. Convert units for base and derived quantities within a given system of units as well as between different unit systems. Apply the concept of significant figures to express the inherent accuracy of measurements. Be familiar with the use of Scientific Notation to express the proper number of significant figures in measured data.
- Classify substances with regard to type; differentiate between physical and chemical properties and changes.
- Apply the knowledge of the periodicity of the elements towards the description of covalent and ionic bonding.
- Solve problems related to the quantitative aspects of chemical change; use the mole concept and the principles of stoichiometry effectively, including limiting reactants, and % yields.
- Understand models used in studying and explaining the structure, and behavior of atoms, molecules, solids, liquids, and gases.
- Use the Ideal Gas Law for determining parameters of gas phase systems; combine the gas law and the mole concept to study the quantitative aspects of gas phase chemical reactions.
- Effectively use equipment in the laboratory to properly measure mass, volume, pressure, temperature; perform basic qualitative analysis of based on characteristic simple reactions; use the method of titration for simple analytical tasks; be familiar with basic synthetic and separation techniques like filtration, crystallization, etc.

Prerequisites: Intermediate Algebra (Math 118), high school Chemistry, or Introductory Chemistry (Chem 110)

Appendix I – Student Surveys

**Community College of Philadelphia
Science Program Survey—Current Students (n=30)**

You are receiving this survey because you are enrolled in the Science curriculum at Community College of Philadelphia. We are conducting a survey of current students in the Science curriculum as we work to build on the program strengths and meet student needs. We are interested in knowing what you think about the program. Please take a few minutes to respond to the following questions. Your individual responses will be held in confidence.

1. The science curriculum is attached. Have you seen this before?
(Check all that apply)

- (16) Yes, I have seen this before in the catalog
- (10) Yes, I have seen this before on the college website
- (1) Yes, by talking with the department chair of Chemistry (W4-46)
- (5) Yes, by talking with a CCP advisor
- (0) Yes, by talking with a CCP counselor
- (10) No, I've never seen this

2. When did you enroll at the College? Semester_____ Year _____

Summer 2003	Spring 2009 (2)
Spring 2005	Fall 2009 (3)
Spring 2007	Spring 2010
Fall 2007	Summer 2010
9/ 2007	Fall 2010 (9)
Spring 2008 (3)	Fall, spring, summer I 2007-08, 2009-
Fall 2008 (3)	2011

3. Are you currently attending CCP (23) full time or (7) part time?

4. Approximately how many credits have you completed at CCP? _____

33	60	0
Above 80	17	17 credits
53	45	37
15	0	none as yet
58	22	47
9	30	0
70	68	43
3	0	56
0	35	
24	18	

5. Which of the following reasons were important to you when you enrolled in the Science program at CCP? (Mark all that apply)

- (14) To earn an Associate degree in Science
- (27) To prepare for transfer to a four year college
- (1) To learn skills needed to enter the job market immediately after CCP
- (1) To improve my skills for the job that I now have
- (10) To take courses that interest me
- (3) Other (Please explain):

pre-requisites for a master's program

Originally began at CCP to fulfill prerequisites for a master's program

some courses that are available at CCP are cheaper than a four year college yet holds the same value and credits.

6. How well is the Science Program preparing you for transferring to another college?

- (8) Preparation is excellent
- (9) Preparation is good
- (8) Preparation is fair
- (1) Preparation is not helpful
- (3) Not sure
- (0) Not planning to transfer

Please explain.

by having good teachers in science classes who gave us the information in a very easy way.

Im only here for a semester taking general education courses. so my training in science has not begun.

Prior to attending CCP, I was a biology major at Drexel University. The courses are exactly the same and the level of difficulty is the same in my opinion.

The Science Program is preparing me to transfer to a four-year college because most of the course requirements are the same.

I am more than content with the preparation thus far.

Chemistry courses are very thorough, but biology courses seem a bit easier and the teachers I have had are not as good

i doubt should i have to take any unnecessary classes which is not required or transferable

so far i have been taking classes that are mostly transferrable but still i am not sure if i am taking all the right courses or not.

some of the courses that we required to take is not counted towards other universities' credit requirement.

am really learning a lot of things that will help to transfer

7. What is the program/major you intend to transfer into?

Please comment:

Computer Forensics
Biology
pharmacy

Neuroscience
Chemistry; Pharm D.
Chemistry

Pharmacy
Biochemistry
Chemistry
pre dental
Biomedical Science
Pre medicine
pre-med
Biology
Physicians Assistant
Middle Years Education Science
Concentration
Physics

Pharmacy
Pre-Pharmacy
Biochemistry
bachelors in biology
Biology
Chemistry
Science/Biology
Pre-Veterinarian
Premed
medicine
Biochemistry/Chemistry
environmental studies

8. What is your career goal?
Please comment:

To have a good job
Dentistry
to be a pharmacist
To go to medical school and obtain an MD.
Pharm D. ; Ph.D in Chemistry
To become a forensics scientist
Pharmacist
Research Biochemist. Government or Private
My career goal is to be a Medical examiner.
Dentist
To become a physician someday
Ultimately to become an anesthesiologist.
trauma physician
Veterinary medicine.
I want to work with a Dermatologist or Plastic Surgeon or possibly in pediatrics
Engineer

Pharmacy
To become a Pharmacist
Unsure
My current career goal is to graduate from Temple University with honors with a Bachelor's of Science in Education with a concentration in Science. I would also like to minor in Spanish to educate students who primarily speak Spanish.to be an optometrist
To become an Anesthesiologist.
To become a biology professor
To be a future scientist in medical field.
Pediatician
My goal is to become Veterinarian
To become a doctor or Physician Assistant
ophthalmology
To be become a denist or biochemist.
save the Earth

9. Do you think you are accomplishing the educational objectives that you set for yourself at Community College of Philadelphia?

(17) Yes, fully (13) Yes, partly (0) No

Please comment:

till now i completed 53 credit hours and my GPA is approx. 3.8 and i have one semester to complete the the required classes for my major and i think that is a great accomplishment for me as ESL student who came to this country and now nothing about english.

Only taking general educations that will transfer.

Its hard. I didn't really have a direction when first entering into CCP. As I continued my education I finally realized what courses I liked and wanted to do. I still like the idea of becoming a pharmacist but knowing how competitive it is I do not mind continuing a

Chemistry degree as a back up plan.

I'm very interested in biology. While here at CCP, I've take Bio 123, 124 and 241. All of which I really enjoyed and learned a great deal.

I am mid-way of my first class at CCP, so this is all I can comment so far.

Yes, I have had great professors at CCP who have increased my interest in science and education. Additionally, I always felt encouraged after meeting with the advisors.

My main objective is to earn a G.P.A of 4.0

am doing well in my courses

10. What do you think are the strengths of the Science Program?
Please comment:

well informed faculty

Biology and chemistry

i love science very much so i see every thing in it is strength specially the courage and support i found from the teachers.

There are many inspiring professors like Prof. ____ and Prof ____.

Too general

great transfer options

None

Dedicated and helpful professors

very structured program and in my experience good and helkpful professors
I'd say the strength of the science program are the professors. All of my science professors, especially the Bio 123, Bio 124 and Bio 241 professor knew a great deal about their subject and did they best to help us learn the material.

It is similar to programs at 4 year institutions which means students won't be intimidated by the curriculum if they choose to complete a 4-year degree

Great teachers.

Very good educators

some great teachers are available and very understanding and helpful.
it is flexible. you can pick between general electives and natural science.

-Helping students be interested in different courses and guiding them towards graduation.

I think that the strength of the science programs are the classes they give and how the teachers teach the class

The courses are very challenging preparing students for nursing, pharmacy and medical fields.

I haven't concentrated on the strengths of the program.

flexibility. Lab classes requirement.

11. What do you think needs to be changed or added to the Science Program in order to improve the program?

Please comment:

nothing

More biology courses

honestly now i have no clear idea but let me think of it and i will contact you latter.

More mentoring.

Please have at least 1 day a week for responding all concern related to career orientation or transfer students

Synchronize the lecture syllabus with the lab syllabus. 2. Make the curriculum more practical oriented.

More modern lab equipment.

the course requirements are not clear

I am very satisfied with my education in the science program. Nothing comes to mind that I would add or change.

More sections of upper level classes, such as Organic Chemistry.

I don't have enough experience with CCP's science program to suggest a change

It would be helpful if biology courses were structured in an easy-to-understand sequence, such as the chemistry courses are college chemistry I and II and organic chemistry I and II

More help from the guidance counselors.

so far I am satisfied wth everything.

more classes that is related to the major that will counted towards other universities' credit.

-More medical classes should be added and science related internships.

I think nothing has to be changed to the science program

More classes in various subjects maybe helpful.

More classes in the higher chemistry class offered at night.
math 165/166 could be mandatory replaced by math 171. Math 172 could be a mandatory. For the natural science lab classes chem 121/122, bio 123 and phys 140 could be mandatory, not the basic courses. Math Statistics (calculus based) could be added.

12. What sources have you used to get support and information about the Science Program? (Mark all that apply)

- (3) I have talked with the department chair in chemistry in room W4-46
- (9) I have talked with an academic advisor
- (6) I have talked with a counselor
- (10) My peers
- (8) My Science instructors
- (19) The college catalog
- (4) Other:

CCP website

Mail a letter letting me know I was accept to program.

my family

Department Chair and Dean of Science and Tech

If you are currently working, please answer questions 13-19. If you are not currently working please skip to question 20.

13. If you are currently working, what is your current job title and what type of work you do in your primary job?

Job Title:

salesfloor team member
home work
teacher
Work study
Lab Assistant
Jomar Textiles/
make up artist
Security officer
customer service representative
Sales Associate

Computer Operator
Cashier
Facility Coordinator
cashier
Pharmacy Technician
Orientation Leader at CCP
Cashier at Dry Cleaning
File Mail and Clerk
Legal Secretary
sales associate

Describe work:

stock shelves and help customers

specimen processing

I teach music

Supervising Associates

AV clerk

do make up for mostly bridal parties in the Chestnut Hill area

Security

I give walking tours and explain the students about all our resources available at CCP.

handle customer complaints, issue refunds, lottery, western unions
I sell shoes at Payless.

Check the clothes in and out, packaging, separate the clothes with the same kind and assist customers if they have any problems.

IT

Very essential in managing with finance

Long hours, but basically very easy

Submitting lawsuits to local courts, skip tracing

Marketing, accounting, processes development

Sales

14. Is this job directly related to the field Science? (2) Yes (18) No
15. Was your enrollment in the Science Program helpful to you in getting this job? (0) Yes (19) No
16. Were you employed in this job prior to enrolling in the Science Program at CCP? (14) Yes (5) No
17. If yes, have your experiences in the Science Program at CCP helped you do your job better? (2) Yes (11) No
18. How could your Community College of Philadelphia education be more useful to you in performing your job?
Please comment:
- it can't
- by giving me a chance to take all my classes and transfer to another school to have my degree and have a good job.
- they cannot
- Please have a regular meeting of all science students for express all concerns
- It won't be useful for the job I have now. It will enable me to go to the next level in the biological sciences.
- If I wanted to advance in this job community college of Philadelphia's business course would help
- it couldn't im essentially a cashier
- My job has no connection to my science courses at CCP.
- It isn't useful to my current job
- Apart from being an Orientation leader I am the assistant Corresponding Secretary of Student Governemet and i am involved with amny clubs so it helps me with my job.
- It can't be useful in that job. But I believe it will make me more responsible of doing good in whatever I am doing.

I'm not exactly sure.

when i change my job...

19. How many hours per week on average do you work in this job? ____ hours per week

10
15 - 20 hours
17
20 (5)
26
27 hours
30 (2)

36
40 (4)
40 hrs a week but i will have time for this program because i will get my hours cut down for school.
Temporary Job ; 8 hours a day for 1 week each month

20. If you are not employed now, is this employment status by your choice?
 (7) Yes (8) No

**Community College of Philadelphia
Science Program Survey—Graduates (n=20)**

We are conducting a survey of graduates of the Science Program as we work to build on the program strengths and meet student needs. We are interested in knowing what you think about the program and what you have been doing since you graduated. Please take a few minutes to respond to the following questions. Your individual responses will be held in confidence.

1. When did you enter the Science program at CCP?

Semester _____ Year _____ Unsure

Spring 1970

Fall 1986

Fall 1990

Fall 1992

1992

Fall 1994

Fall 1996

Fall 2002 (2)

FALL 2003

Spring 2004

Fall 2004

2004 or 2005

Fall 2005

Spring 2006

May 2009

Summer I 2008

Fall 2008

FALL 2009

2. Which of the following reasons were important to you when you initially enrolled in the Science program at CCP? (Mark all that apply)

(11) To earn an Associate Degree in Science

(18) To prepare for transfer to a four year college in the field of _____

Mechanical Engineering

pharmacy

Physics

Biology

Biology

Biochemistry

Science

(3) To learn skills needed to enter the job market immediately after CCP

(2) To improve my skills for the job that I now have

(3) To take courses that interested me

(0) Other (Please explain):

3. When did you graduate from the Science program at CCP?

Semester _____ Year _____

Summer 1989

May 1992

1995

Spring 1996

Spring 1997

Spring 2000

Spring 2003

Summer I (May) 2005

Spring 2005

Fall 2006

Spring 2006 (2)

Spring 2007

Fall 2007

SUMMER 2008

SUMMER 2008

Spring 2010 (2)

May 2010

Summer I (May) 2010

4. Do you think you accomplished the educational objectives that you set for yourself at Community College of Philadelphia?

(14) Yes, fully (16) Yes, partly (0) No

Please comment:

I graduated high school early initially went to Temple because at that time that sis where everyone was going. I felt I was not learning at Temple and transfered to CCP. I learned my sciences and math to a get degree. Very excellant teachers at that time.

I didn't get to accomplish my goals, because I had to help my family pay bills.

I feel as though the academic science courses were very knowledgable but I lack hands in skills to demonstrate that knowledge.

I took a bunch of science courses such that they could counted towards some of the requirements for biuology/biochemistry major. One of the major problems that I faced was that the lab courses did not require us to write extensive lab reports, which have made it difficult for me to cope with my curriculum at Drexel.

I felt I knew just as much as those that went to four year colleges.

Earn credits for transfer

5. Which of the following describe what you have done/are doing since graduating from the Science Program? (Mark all that apply)

- (5) Currently attending a four-year college
 (10) Graduated from a four-year college
 (2) Currently attending a graduate school
 (3) Graduated from a graduate school
 (3) Part-time employment
 (9) Full-time employment
 (1) Other:

Looking for part or full-time employment.

6. Please answer if you have transferred to another institution (2- or 4-year) - if not, move onto question 7.

(NOTE: For respondents to the SurveyMonkey digital survey, there was a question added to determine if survey respondents would continue or move onto question 7: "Have you transferred to another institution?" – 15 respondents answered 'Yes' and 4 respondents answered 'No')

A) How well did the CCP Science Program prepare you for the academic demands at the college to which you transferred?

- (10) Preparation was excellent
 (5) Preparation was good
 (1) Preparation was fair
 (0) Preparation was not helpful

Please explain. We would appreciate your comments on your Science courses as well as your other general education courses.

I absolutely love CCP and wish they were a four year University. No other professors compare to the professors at CCP especially Dr. ____ and the Mrs. ____ in the Science program!

I thought the professors were excellent!!!!!! We need more of them.

Instructors were insightful and outstanding. Dr. ____, Dr. ____, Dr. ____.

The Community College of Philadelphia really prepare me and challenge me during the process of taking the courses.

The science program had given me a solid foundation in courses such as organic chemistry, cell structure and function, Genetics...

The science teachers at CCP are excellent. They were willing to share their knowledge outside of classroom. They paid attention to their students and wanted their students to be successful in the subject. They encourage their students to study hard and get good grades.

My first course, bio 106, was not of much help in the long run since I already had taken advanced biology at my high school in India. Bio 123, 124 & microbio were very helpful. Also, organic chem courses were on par with the (respective) courses at Drexel.

B) If you transferred to another college, did your transfer institution accept your CCP Science courses?

- (14) Yes, all of them
- (2) Yes, some of them
- (1) None of them

Please list the courses that **did not** transfer:

THEY TOOK 59 OF CREDITS OUT OF 90

don't remember 10 years ago

Human Anatomy (?) - the level of details was not sufficient for it to be considered an undergrad course equivalent.

C) Name of most recent attended College: _____

Date Started: _____ Major: _____

Graduation Date (If applicable): _____

and Degree Granted (if applicable): _____

Name of most recent attended College:	Date Started:	Major:	Graduation Date:	Degree Granted:
DREXEL UNIVERSITY	2009	BIOLOGICAL SCIENCE	2013	
Temple University	1998 (part-time attendance)	Geology	2005	B.A. Science
American Public University	04/02/2014	Information Systems Security	09/02/2015	BS
Temple University	2006	Biology	2010	yes
Temple University	08/02/2011	Environmental Engineering	01/02/2013	M.S. Civil Engineering (Envr Engr Concentration)
University of Phoenix	2001	Business Management	2005	Bachelors in Business

				Management
Rutgers Camden	09/02/1999	General Science	06/02/2001	BA
Widener University	07/02/2006	Nursing	05/02/2009	BSN
Eastern University	1997	Organizational Management		BA & MBA
Columbia University	Sep-10	Physics & Math		2012 or 2013
Philadelphia University	Spring	Health Science	Jun-10	
Temple University	Sep-07	Biology	13-May-10	Biology
Temple University	Fall 2010	Biology	Fall 2011	B.S. Biology
University of Pennsylvania	Sep-08	Pharmacology		
Temple Pharmacy	Sep-06	Pharm.D.	May-10	Pharm.D.
Temple University	Fall, 2007	Biology	Aug-10	Psychology

7. Were you satisfied with the instruction you received at CCP?
 (20) Yes (0) No, Please explain:

Professors are well educated and have the ability to teach.

Wish CCP had 4 year program. Instructors more personable - questions were welcomed - class was not rushed

*Not yet. Applied to Drexel University Co-Op Nursing Program for September 2011.

8. Did you use any of the following sources to get support and information about the Science Program? (Mark all that apply)
- (4) I talked with the Department chair of the Chemistry Department (W4-46)
 - (8) I talked with an academic advisor
 - (5) I talked with a counselor
 - (12) My instructors
 - (6) My peers
 - (10) The college catalog
 - (4) Other (Please explain):

Science & Math are my strongest subjects & I catch on quickly. A Friend pointed me in the right direction.

I lead myself into the direction of the science program.
I would like to talk to an academic advisor.

Was certain that I wanted to pursue science during my senior year of high school.

9. Were you satisfied with the support you received from the program?
 (18) Yes (1) No

A) If yes, please give an example of the type of support you received:

B) If no, what type of support were you looking for and did not receive?

(Note: For respondents to the SurveyMonkey digital survey, 9a and 9b response boxes were combined).

USING THE LEARNING LAB, BOOKS AND OTHER MATERIAL WHICH ARE ESSENTIAL TO MY OF SYUDY

See question #7

When I needed advice I recieved it in a timely manner.

Financial Aid office, enrollement disk, library service and computer lab supports are some of the major ones. Acadamidc and department advices were a type of support I did not recieved much. I did looked for career couch but not much support.

What classes to take and what time to take claases during your academic career.
Spoke with Instuctors to choose courses.

There was a lot of resources.

Dr. Cottell was more than helpful. Whe was somewhat of a mentor for me.
Financial aid support

I thought that there was going to be employment supoort or at least more direction as to what I can do next.

Tutoring in the math lab on a daily basis was crucial for me to do well in my upper level math courses at my 4 year institution.

Advising (for registering classes), types of carrer of choice

Letters of recommendation, information about 4 yr colleges and universities

Respitory care program staff is excellent

10. What do you think are the strengths of the Science Program?
Please comment:

VERY EFFICENCE

The professors really cared about our achieving our goals and that helped a lot!

The professors...

its coustre cariculum and coverage that enable science student to carry with while transfering to another institute with proper tool even though some institues did not give much weight for grade earned from CCP,

continuous support and encouragement

Professional, seasoned instructors

Transferable credits, good selection of courses.

Great teachers will to help students

Support from stall and fellow students

Science and Math are my strengths.

Dedication of staff

The professors, the students and rest of the financial aid staff has been the strength through out.

Dedicated professor who not only cared about giving you a grade but cared about the students applying what they acquired throughout the courses of their future studies and beyond.

It really prepared studnets to be knowledgable in the science field.

Courses: Bio 123,124, 221; Organic chem, physics (unsure of #) were very helpful.

Good.

The individual teachers. In all the science courses I took there all of the teachers were intelligent, approachable and fair.

11. What do you think needs to be changed or added to the Science Program in order to improve the program?

Please comment:

MORE LEARNING METERIAL, SUCH TECHNOLOGICAL EQUIPMENTS

Nothing

Haven't been there in awhile.

Better and more qualified instructors

I can't say

none

Nothing

I graduated in 1995, it's hard to know what needs to be changed at this point.

There should be tutoring available for those who do not catch on quickly, but are interested in having a future in the field.

Needs to be bigger

May be few of the professor

Programs that students ca applied what they've learnt such as an internship or coop.

* Field trips or visits to museums or science places. *Hands-on experience in a company (example: internships, part-time experience, co-op, or training). BTTP is a good example of this kind of program.

*Seminar by people from scientific field (a scientist, a doctor, a post-doc, a Boeing employee, Merk employee, etc.)

More number of biology/chemistry courses; Greater depth in some courses - especially lab related ones; Contacts in 4 year colleges/Universities for proper guidance regarding courses (transferred), types of internships that might be helpful, etc.

Should have ended in spring semester instead of Summer I. Big job competition with other school that ends in spring.

Possibly some peer/group study programs. Some from our classes got together on our own & that was really helpful.

Please answer questions 12-17 if you are working; otherwise skip to question 18.

(NOTE: For respondents to the SurveyMonkey digital survey, there was a question added to determine if survey respondents were working or would move onto question 18: "Are you currently working??" – 15 respondents answered 'Yes' and 4 respondents answered 'No')

12. What is your current job title and what type of work you do in your primary job? Job Title:

Describe work:

Job Title:	Describe Work:
PROGRAM SPECIALIST	HELP IMPLEMENT, EVALUATE and PLANING THE OPERATIONS OF MY CLIENTS
Research Assistant Temple University	I work as an Assistant to the Director at one of Temple's medical school labs
Sr Information Security Analyst	Analyzing Computer breaches and compliance issues
Space Reactor Technology Program Manager	Program Manager for NASA/DOE space reactor R&D activities, spread out at 4 national labs and 3 NASA centers, part of US Delegation to UN Committee on Peaceful Uses of Outer Space, Manage Nuclear Launch Safety Program and other tasks
Pharmacist	pharmacist
Housing Coordinator	Assign new freshmen on campus housing
Plant Health Safeguarding Specialist	USDA Government Science and Regulatory Duties.
RN Supervisor	
President	Self employed
Customer Service Representative for Dialysis Patients	Schedule appointments for patients on dialysis while on vacation, emergency travel, medical surgical visits or bereavements.
Quality Assurance Inspector	Inspect pharmaceutical products for any defects and make sure other product and equipment/logistics are in compliance.
Therapeutic Staff Support (TSS)	Currently working with children in their natural environment - school, home and community that struggle with academic challenges and behavioral issues. Children are taught how to identify their feelings and was to express them socially.
Graduate student in the Dept. of Pharmacology	n/a
Respiratory Therapist	Taking care of long term adults in ventilator civic unit.
Nuclear Pharmacist	Responsible for the production synthesis, dispensing, dispatching & quality control of radio pharmaceuticals used for therapy of diagnostic imagery.
Home Health Aide	Helping [drop] children with daily activities

13. Is this job directly related to a scientific field? (11) Yes (6) No

14. Were you employed in this job prior to enrolling in the Science Program at CCP? (4) Yes (11) No

15. If no, was your enrollment in the Science Program helpful to you in getting this job? (7) Yes (3) No

15a. If your enrollment in the Science Program was "not" helpful to you in getting this job please list the reasons below.

The A.S. Science degree was only loosely helpful, it's main strength was allowing me to enter a strong B.S. Mechanical Engineering Program, which allowed be to enter a strong M.S. Nuclear Engineering Program, etc

job looked at business background. science history was not used or reviewed

Needed to complete my B.S. in biological sciences to apply to grad schools.

The basic requirement for job is high school diploma

16. What courses or topics could have been added to the Science curriculum that would have been more useful to you in performing your current job?

Please comment:

NONE

How to negotiate a higher salary LOL!

More writing courses.

nothing

Nothing

n/a

I did not have the job @ the time, so this question does not apply.

The program was just right (I can't think of any right now, maybe in the future)

No need.

I retook Spanish I and II at CCP I had it in high school and spoke it a little bit. I would highly recommend Latin at least be encouraged for those going into the science/medical fields.

17. How many hours per week on average do you work in this job?
_____ hours per week

35

>40 (2)

40 HOURS PER WEEK

40 (6)

50 (2)

50+

55

18. If you are not employed now, is this employment status by your choice?

(5) Yes (5) No

Community College of Philadelphia
Science Program Survey—Former (n=12)

You are receiving this survey because at one time you were enrolled in the Science curriculum at Community College of Philadelphia. We are conducting a survey of former students of the Science Program as we work to build on the program strengths and meet student needs. We are interested in knowing what you think about the program and what you have been doing since you left the program. Please take a few minutes to respond to the following questions. Your individual responses will be held in confidence.

1. When did you enter the Science program at CCP?

Semester _____ Year _____

Fall 1979

9/1988

Spring 2003

Spring 2005

Fall 2007 (3)

Summer 2008

Fall 2008

2009

S - 2009

Fall 2009

2. What year did you leave the Science program at CCP?

Semester _____ Year _____

Spring 1981

1990

Spring 2005

Fall 2007

Fall 2008

Spring 2008

Fall 2008

Summer 2009

Fall 2009

Summer 2010 (2)

3. Which of the following reasons were important to you when you initially enrolled in the Science program at CCP? (Mark all that apply)

- (0) To earn a certificate
- (4) To earn an Associate Degree in Science
- (11) To prepare for transfer to a four year college
- (0) To learn skills needed to enter the job market immediately after CCP
- (1) To improve my skills for the job that I now have
- (1) Other (Please explain):

To prepare needed pre-regs for N.D.

4. What factors led you to leave the Science program before completing it? (Mark all that apply)

- | | |
|---|--|
| <input type="checkbox"/> (0) I learned skills that I wanted to know | <input type="checkbox"/> (0) Courses that I needed were not offered when I needed them |
| <input type="checkbox"/> (1) Conflict with work schedule | <input type="checkbox"/> (0) Courses were not required at transfer institution |
| <input type="checkbox"/> (0) Conflict with family responsibilities | <input type="checkbox"/> (0) Did not like the program |
| <input type="checkbox"/> (8) Transferred to another college | <input type="checkbox"/> (1) No longer interested in the field |
| <input type="checkbox"/> (0) Financial reasons | <input type="checkbox"/> (1) Changed my major |
| <input type="checkbox"/> (0) Problems with Financial Aid | <input type="checkbox"/> (1) Other _____ |
| <input type="checkbox"/> (0) Personal reasons/illness | |
| <input type="checkbox"/> (1) Academic difficulties | |

1-Changed mind about medical school.

5. Which of the following describe what you have done/are doing since leaving the Science Program? (Mark all that apply)

- (2) Secured full-time employment
- (2) Secured part-time employment
- (0) Attended another 2-year college part time
- (0) Attended another 2-year college full time
- (8) Attended a four-year college part time
- (0) Attended a four-year college full time
- (0) Graduated from a four-year college
- (3) Attended a graduate school
- (1) Other:
Please comment:

1-Dental School

6. What do you think are the strengths of the Science Program?
Please comment:

Instruction/teaching is way better than what we are receiving at 4-yr institution. I Miss CCP!!!n/a

The Science program at CCP offers not only a wide range of classes but free tutoring which is beneficial in securing knowledge.

The fact that they emphasize higher level math (eg Math 171) makes it a very good program to be in.

Courses and instructors

Very good.

Good faculty, very good support. Science program were rigorous and gave us lot of knowledge.

Randy Libros is a fair and talented educator. I enjoyed the Physics class he taught & learned a great deal from him.

Good teachers(teaching) Prepared to except an internship at 4yr college, work study placement in field of major

Flexible Schedules. Great professors.

The qualified instructors that care about teaching the material is a strong aspect of the program.

7. Were you satisfied with the instruction you received? (11) Yes (0) No
8. Were you satisfied with the support you received from the program faculty?
 (10) Yes (1) No
- 8a. If Yes, please give an example of the type of support you received:

Academic advising, fincial aid, advising were way helpful.

Academic support, faculty is very knowledgable

Personal attention if needed. Willingness to help. Availability druring class and other times for assistance.

They were very supporting and encouraging. Get support to get information about other university's requirements on specific programs. So I know which classes are needed to take. Professors very helpful.

Tutoring from instructor for chem 101 & 102. --> Most important - work study job was in Chem lab as an assistant. INVALUABLE.

8b. If no, what type of support were you looking for and did not receive?

Academic counseling (One-on-One)

9. What do you think needs to be changed or added to the Science Program in order to improve the program?

Please comment:

More diverse courses such as histology, immunology courses could be added and some form of collaboration for research activited could be established with a 4-yr university.

I believe the Science program should offer chemistry courses that transfer to Drexel being that Drexel is affiliated with CCP

More Course options, better student advising.

Better labs& tutoring system to struggling students. Advising about careers needs improvement.

Looking back, I wish someone had "tied me into" on to receiving my associates before leacing the program. I went on to a 4 yr college but I did not graduate. I ended up with 130+ credits with no kind of degree. Employment is dim without a degree

Some of the equivalent sciences classes in Temple and other 1 & 2, Physics 1 & 2 and possibly the calculus courses are much harder at those intstitutions. An improvement could be increasing the intensity of the program so students may be better prepared once they transfer.