

# **ACADEMIC PROGRAM REVIEW**

## **GENERAL EDUCATION & CTE VERSION**

### **Physical and Life Sciences**

**FISCAL YEAR 2014**

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

### What is a Program Review?

This program review is a comprehensive study of the quality and cost effectiveness of a General Education or CTE program. The purpose of Sauk's program review process is to promote continuous improvement and to link those improvements to other internal processes, including curriculum development, assessment, budgeting, facility planning, and to the strategic plan through operational plans. Information provided in program reviews will be used in internal reports, reports to other agencies, and for institutional planning. The program review for each area is conducted once every five years as dictated by a schedule created by the Illinois Community College Board (ICCB).

### Why is a Program Review necessary?

ICCB requires all academic & cross-disciplinary programs and all student and academic support services to conduct a program review at least once every five years. The program review process should:

- Examine the need for the program, its quality, and its cost of operation.
- Involve employees of the unit as well as individuals not employed within the unit.
- Examine current information and data on enrollment, persistence, retention, and other data.
- Produce results that are considered in operational planning and budget allocation decisions.

The College's annual required *Program Review Report* to the ICCB comes directly from the approved program reviews.

Also, as a part of accreditation, the Higher Learning Commission (HLC) requires institutions to have an established process to regularly review all programs. However, each institution is allowed the latitude to develop and administer a review process that is suited to the institution's unique circumstances and needs.

### Timeline for the Program Review Process

|                              |   |
|------------------------------|---|
| April/May                    | Areas are informed that they are scheduled to conduct a program review in the fall of the next academic year  |
| July-Early September         | Optional "early start" is available to areas who want to get the Program Review process started sooner. Area leaders are designated Chair of their program review team. A mandatory orientation will be scheduled and hosted by the Dean of Institutional Research and Planning (IR).                                   |
| Fall semester                | Areas conduct their program reviews using this template. The Dean of IR is always available to answer questions during the review process. Occasionally, rough drafts of the PR document will be requested by the Dean of IR for review to stay apprised of progress.   |
| <b>December 20 or sooner</b> | <b>Program reviews and all other required forms are due.</b> Area leaders are responsible for having their Program Reviews submitted on-time or early.  |
| Fall Semester-March          | The College's Program Review Committee will evaluate area program reviews as they are submitted, request revisions and determine if the program review is complete and if the results fully substantiated. The Vice-President of Academics and the College President determine final acceptance of all program reviews. |
| March                        | Equipment requests, personnel change requests, renovation requests and major project requests from <b>approved</b> program reviews will be placed on the area's Operational Plan for the upcoming fiscal year.  |
| April                        | Instructional areas will submit next year's operational plans, including action items identified in the program review.   |

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

### Instructions

- The area will form a program review team comprised of 5 to 10 individuals recommended from the following groups:
  - Area/department faculty or staff
  - Other employees that are outside the department
  - 1 or 2 students
  - Community members and/or industry representatives who are not SVCC employees
- The program review team will complete this template during the review process. Other formats will not be accepted.
- All form areas/questions must be completed (unless specifically noted otherwise).
- Resources needed before the Program Review process begins:
  - Past Operational Plans for your area (last five years)
  - Last Program Review for your area
  - Access to the College catalog (online)
  - Access to the Assessment Database
  - Graduate follow-up survey results (CTE only)
- **The required ICCB form (found at the end of this template) MUST be completed for each degree or certificate being reviewed.** Make copies of the form as needed and insert into this template.
- Type the names of the program review team on the SIGNATURES AND APPROVAL page and have the team members sign it. All members of the review team must sign the signature page. Submit the completed form to the Dean of IR.
- The Chair of the area's program review committee is responsible for submitting a completed program review. The Chair should submit the following by **December 20<sup>th</sup>** or earlier to the Dean of IR:
  - Type the names of the program review team on the Program Review Team Signatures page. Type in the dates of all applicable meetings. Each member must sign the signature page before it is submitted as a hard copy.
  - Submit an electronic version of the completed program review template. Do not create a printed copy of the document (besides the signature page).
- The approval process:
  - Submission of the completed PR template to the Program Review Committee alone does not constitute approval.
  - The Program Review Committee may request additional analysis, clarification, or information, and will not approve the review until it is satisfied that its requests have been addressed.
    - Reviews must be approved by the committee, the Vice-President of Academics and the President by March in order for budgetary requests to be considered. Reports submitted after December 20<sup>th</sup> may not be approved by the Program Review committee by the March deadline which may jeopardize area budgets, equipment, personnel, renovation or major project requests. Please take the deadlines seriously.

**Data forms** will be supplied to you as an **appendix** and attached as a separate file. Please access this file in order to answer the questions found within this template. If you feel as if there is an error in the data tables or wish to see additional data, please contact the Dean of IR.

**QUESTIONS:** Contact the Dean of IR, Steve Nunez (ext. 263), with any questions regarding your program review.

## Alignment with the College Mission

### **College Mission** *Tells who we are as an institution and what we do*

Sauk Valley Community College is an institution of higher education that provides quality learning opportunities to meet the diverse needs of its students and community.

### **College Vision** *Tells where we want to go as an institution*

Sauk Valley Community College will be recognized as a benchmark institution of higher education that provides exceptional learning opportunities in response to the diverse needs of its students and community.

### **Program Mission**

The Physical and Life Science area provides quality learning opportunities designed to address the diverse needs of today's student population. The area offers courses that provide the foundation for students that transfer as a physical or life science major and pre-professional transfer programs, satisfy requirements for students in general education and prepare students for careers in the health professions.

**Each program is evaluated on need, cost effectiveness, and quality. Answer the questions below with as much detail as necessary to fully substantiate the answers. Some questions refer to data tables (highlighted in red font); data tables are attached as a separate file.**

**→To incorporate new plans or goals into the Operational Plan use the Operational Planning matrix found near the end of this template.**

**Contact to the Dean of Institutional Research if you have any questions.**

### **PROGRAM NEED**

The viability component focuses on quantitative analysis for the need for the program(s)

#### **Enrollment** (Strategic Objective 5.6)

1. For each program (if more than one), describe the five-year enrollment trends as compared to the overall college enrollment (use **Table 1A, rows a, d**).

There has been a decrease in overall college enrollment in each year over the past five years.

Biology has seen an overall increase in the five-year enrollment trend from 242 students in FY 2009 to 296 students in FY 2013. Enrollment declined in FY 2010 but increased in FY 2011, again in FY 2012 and has remained the same (within two students) over the last two fiscal years.

Chemistry has seen an overall increase in the five-year enrollment trend from 131 students in FY 2009 to 164 students in FY 2013. Enrollment declined in FY 2010 but increased in FY 2011, again in FY 2012 and has remained the same (within one student) over the last two fiscal years.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

Physics has seen an overall increase in the five-year enrollment trend from 111 students in FY 2009 to 154 students in FY 2013. Enrollment declined in FY 2010 but increased in FY 2011 and again in FY 2012 and has remained the same (within two students) in last two years.

Engineering has seen an overall increase in the five-year enrollment trend from 76 students in FY 2009 to 138 students in FY 2013. Enrollment declined in FY 2010 but increased in FY 2011, again in FY 2012 and has remained the same (within four students) in last two years.

2. Using data **Tables 6A & 6B**, compare the enrollment numbers for the program for each ethnic group (**6B, row a**) to the college average for each ethnic group/gender (**6A, rows a**). Do any obvious anomalies exist?

No obvious anomalies between the college averages for each ethnic group compared to the biology program average enrollment numbers. However, for gender, the biology program average enrollment numbers are higher for females than males. The college enrollment of male students is greater than the number of female students.

There are no obvious anomalies between the college averages for each ethnic group/gender compared to the chemistry program average enrollment numbers.

There are no obvious anomalies between the college averages for each ethnic group/gender compared to the physics program average enrollment numbers.

There are no obvious anomalies between the college averages for each ethnic/gender compared to the engineering program average enrollment numbers.

3. *Describe* what the program's faculty/staff already did to promote each program in the previous five years to increase program enrollment and the number of declared majors.

Faculty worked with students in the honors program.

Potential science majors were allowed to visit classrooms during their high school visits.

CHE 103 hybrid course offered in FY 2010.

Hosted biology students from area high schools to view the cadaver.

Science demonstrations for 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grade students for district students.

Child fair presentation at SVCC.

Women in Engineering workshop at SVCC.

Faculty member performing lab exercises at a district high school.

Science magic shows presented to 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grade students in our district.

Third grade students visited the college and performed various lab activities.

4. *Describe* how the program's faculty/staff will promote and market each program to increase program enrollment and number of declared majors within the next five years. Could the program better market to any particular group (ethnic group, males, females, etc.) in order to increase enrollment or the number of declared majors within each program?

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

(Examples include updating of the departmental website, high school visits by faculty/staff, community presentations, etc. Contact the marketing coordinator and VP of Academics for additional suggestions.)

Update departmental website.

Faculty assistant will contact five area high schools to arrange campus visits to the physical and life science areas at Sauk.

Participate in college night.

High school visits by faculty.

Work with the coordinator of marketing to create a science brochure for the Hispanic population.

→**Include the marketing plan within the Operational Plan matrix found near the end of this Program Review document.**

5. For each program, if any specific classes (multiple Tables, 1B, row d) have a different enrollment trend than the program as a whole (Table 1A, row d), explain the enrollment trend in the class and if a problem exists.

BIO 103, BIO 104, BIO 108 – The enrollment increased until FY 2011 and has decreased each year

BIO 105, BIO 109, BIO 111 – The enrollment increased until FY 2011 and has remained stable.

BIO 123 – The enrollment has remained constant all fiscal years.

BIO 131 – The enrollment decreased in FY 2010 and FY 2011 but remained constant in all other years

CHE 102 – The enrollment peaked in FY 2010 and has decreased each year since then.

CHE 103, CHE 202 – The enrollment has decreased each year since FY 2010

CHE 201 – The enrollment has remained constant all fiscal years.

PHY 175 - The enrollment has decreased each year since FY 2010

PHY 201 - The enrollment peaked in FY 2011 and has decreased each year since then.

PHY 202 – The enrollment has remained constant all fiscal years.

6. For each program being reviewed, what is the average class enrollment (Table 1A, row e)? Is the average class enrollment equal to or greater than 10 students? If the average enrollment is below 10 students, please *justify* the small average class size for the program as a whole or indicate possible solutions to the small average class sizes (e.g., consolidation of classes, etc.).

The average class enrollment is greater than 10 students for the biology, chemistry, physics and engineering programs.

→**If applicable, include a potential solution to the small program class size within the Operational Plan matrix.**

7. For each class in each program, list any classes that have an average class enrollment (multiple tables, 1B, row e) less than 10 students. If the average enrollment is below 10 students, please *justify* the small class size or indicate a possible solution to the small average class sizes.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

The average class enrollment is greater than 10 students for the biology, chemistry, physics and engineering programs.

BIO 131 - average class enrollment is 8.9. BIO 131 is a sequence course for a biology major. If you drop the lowest year the average will above 10.

CHE 101 - average class enrollment is 9.0. No longer offered after FY2010.

CHE 109 - average class enrollment is 2.0. No longer offered after FY2009.

CHE 110 - average class enrollment is 6.0. No longer offered after FY2009.

CHE 202 - has declined each year. 10 students in FY2009 and FY2010 to 6 students in FY 2013. Five year average is 8.2. CHE 202 is the second semester organic chemistry course for a chemistry major and is required in order for students to complete their degree.

PHY 202 - 5 year average enrollment 6.6 PHY 210 - 5 year average enrollment is 0.0 (Fall 2013 has 16 students) PHY 212 - 5 year average enrollment is 6.4 PHY 221 - 5 year average enrollment 5.0 PHY 222 - 5 year average enrollment 3.8 PHY 246 - 7 students in FY 2013 PHY 247 - 7 students in FY 2013 PHY 270 - 5 year average enrollment is 0.0

Courses that show low enrollment are offered to meet course requirements for degree programs offered by Sauk..

→If applicable, include a potential solution to small class sizes within the Operational Plan matrix.

### Declared Majors & Completions (Strategic Objective 6.1)

8. For each program, *describe* the five-year trends pertaining to the number of declared majors (Table 2, row c). Use the total college and program enrollment (Table 2, row a & b) as a comparison reference. If possible, explain the trend in declared majors.

The overall college enrollment number have decreased each year over the past five years.

The total program course enrollment reached its highest total for each program in FY2013.

The number of declared majors reached its highest total for each program in FY2013 except for Biology.

The highest number of declared biology majors are in FY 2009 and FY 2012

Biology – The number of declared majors have fluctuated around 18 students each year.

The total program course enrollment has increased each year since FY 2011 to 50 students FY 2013.

Chemistry - The number of declared majors have fluctuated around 3 students each year.

The total program course enrollment increased in FY 2013 to 9 students.

Physics - The number of declared majors have fluctuated around 2 students each year.

The total program course enrollment has increased in FY 2013 to 4 students.

Engineering - The number of declared majors have fluctuated around 17 students each year.

The total program course enrollment has increased in FY 2013 to 54 students.

9. For each program, *describe* the five-year trends pertaining to the number of degrees or certificates awarded (Table 2, rows d & e). If possible, explain the trend.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

The number of degrees awarded has remained constant in each of the disciplines in our area.

10. Use data **Table 2** to verify that students are not taking more than 6 fall/spring semesters to complete a degree (**row f**) or 4 fall/spring semesters to complete a certificate (**row f**). *Explain any discrepancies.*

Biology - Students are not taking more than 6 fall/spring semesters to complete a degree in Biology.

Chemistry - Students are not taking more than 6 fall/spring semesters to complete a degree in chemistry.

Physics - Students are not taking more than 6 fall/spring semesters to complete a degree in physics.

Both chemistry and physics recorded an average number of 13 semesters to complete a degree in FY 2010. The data for the table was reran and the same results were generated for FY2010. No explanation as to why it took a student 13 semesters to complete a degree.

11. Using data **Tables 6A & 6B**, compare the number of declared majors, the number of certificates, and/or degrees for each ethnic group/gender (**6B, rows b-d**) to the college average (**6A, rows b-d**). Do any obvious anomalies exist?

Biology – No Black students declared majors. Female declared majors is higher than male declared majors within the program. Degrees were given to Hispanic and Asian students.

Chemistry – No Black or Asian student declared majors. No degrees were given to Hispanic students.

Physics – No Black or Asian student declared majors. No degrees were given to Hispanic students.

Engineering – No obvious anomalies exist with student declared majors, all groups comparable to the college's declared majors. No degrees were given to Hispanic, Black or Asian students.

No certificates are offered in the biology, chemistry, physics or engineering programs.

12. *Describe* what was already done by the area to increase the number of program completions of degrees or certificates since the last program review. Indicate how frequently each effort was conducted during the past five years.

Coordinate course offerings in chemistry, biology, physics and math to prevent scheduling conflicts as much as possible between each program.

Give daily quizzes in entry level courses into the biology and chemistry programs.

Early Alert System” used to help students having difficulties (each semester)

Physics instructor contacted students by email when they missed two classes (each semester)

Area faculty set up personal meetings with underperforming students (each semester)

13. *Describe* what will be done to increase the number of program completions of degrees or certificates during the next five years. Contact the VP of Academics for additional ideas.

Continue to coordinate course offerings in chemistry, biology, physics and math to prevent scheduling conflicts as much as possible between each program.

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

Continue to give daily quizzes in entry level courses into the biology and chemistry programs.

Continue using the “Early Alert System” used to help students having difficulties.  
Physics instructor will contact students by email when they missed two classes (each semester); set up personal meetings with underperforming students (each semester)

In the fall semester, the VP of Academics is now supplying a list of students who have indicated being in a specific program in our area. The list will be distributed to the appropriate faculty members and a general email will be sent to all of these students offering assistance.

Investigate methods to reduce the number of credits for each program..

→**Include the completion plan within the Operational Planning matrix.**

14. Does an opportunity exist to create another certificate or degree similar to or within these programs (that have not been addressed above)? Consult with the Academic Vice-President and then list the degree and/or potential certificates or indicate “none.” Explain.

| Suggested Name | Degree or Certificate? | Brief explanation of opportunity<br>(a more thorough study will be scheduled later) |
|----------------|------------------------|---|
| none           | none                   |   |
|                |                        |   |
|                |                        |   |

→**If applicable, include the plan to add certificates or degrees to the Operational Planning matrix.**

15. For each program with Gen Ed Common Core (GECC) requirements, describe the five-year trends pertaining to the number of GECC completions (**Table 2, row g**). If possible, explain the trend.

Biology – Highest GECC completions(8) in FY2009; 3-4 GECC completions each year from FY2010-FY2013

Chemistry - Highest GECC completions(2) in FY2009; (0) GECC completions in FY 2010, FY2011, FY 2012 and (1) GECC completion in 2013

Physics – (1) GECC completion in FY2009 and FY 2012; (0) GECC completions in FY2010, FY2011 and FY 2013

Engineering – (2) GECC completions in FY2009 and FY 2010; (3) GECC completions in FY 2011; (1) in FY 2012; and (0) in FY 2013

16. Using data **Tables 6A & 6B**, compare the GECC completions for each ethnic group/gender (**6B, row e**) to the college average (**6A, row e**). Do any obvious anomalies exist?

Biology – Biology GECC completers are consistent with the college averages for each ethnic group/gender except for black students. No black students are listed as GECC completers for biology

Chemistry – No Hispanic, Black, Asian or female students are listed as GECC completers for chemistry.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

Physics – No Hispanic, Black, Asian or female students are listed as GECC completers for physics.

Engineering - No Hispanic, Black, or Asian students are listed as GECC completers for engineering. Female students are represented with a mean of (.2)

### Transferability (Strategic Objective 6.2)

17. For each program, *describe* the five-year trends pertaining to the number of transfer students (**Table 2, row h**). If possible, explain the trend.

Biology – The five-year trend shows a decreasing number of transfer students. The highest number of transfer students (6) occurred in FY2009 and FY2010. FY 2011 had (2) students; FY 2012 had (4) students and FY 2013 had (1) student.

Chemistry – The five-year trend shows a decreasing number of transfer students. The highest number of transfer students (6) occurred in FY2009 and FY2010. FY 2011 had (2) students; FY 2012 had (4) students and FY 2013 had (1) student.

Physics – The five-year trend shows a decreasing number of transfer students. The highest number of transfer students (1) occurred in FY2010. FY 2009, FY 2011, FY 2012 and FY 2013 had (0) students.

Engineering - The five-year trend shows a decreasing number of transfer students. The highest number of transfer students (10) occurred in FY2009. FY2010 had (5) students; FY 2011 had (6) students; FY 2012 had (4) students and FY 2013 had (0) students.

Physics: Many of the local students going into engineering and physics transfer from high school directly into a 4-year college or university. Marketing can accentuate that this 2-year college will offer them the opportunity to learn physics fundamentals more thoroughly so that they will perform better at the 4-year university when they transfer than if they had gone straight there. Also, the financial advantages of attending SAUK for the first two years. Over the entire nation, the number of students enrolled in physics and engineering classes as well as the number of students completing degrees in these areas has shown a 10% - 15% increase.

18. Using data tables 6A & 6B, compare the number of transfer students (**6B, row f**) in the program to the college average for each ethnic group/gender (**6A, row f**). Do any obvious anomalies exist?

Biology – No Black or Asian transfer students. The Caucasian mean is higher than the Hispanic mean. The male mean is equal to the female mean.

Chemistry – No transfer students listed for any category.

Physics – No transfer students listed for any category.

Engineering – No Hispanic, Black, Asian or Female transfer students. All transfer students are Caucasian males.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

19. Describe what was already done by the area to increase the number of transfer students from the program?

Courses are made available each semester to allow the student to complete the sequence of courses which will allow them to transfer to another institution.

Coordinate course offerings with math, chemistry, biology, physics to prevent conflicts in scheduling as much as possible.

Women in Engineering workshop at SVCC.

Physics: supplying information on summer internship programs and encouraging students to apply to these programs at national labs around the country (there have been 5 students who have obtained them) so that they would be more inclined to continue their physics/engineering education at a 4-year university. Also, supplying information on scholarship programs and encouraging students to apply to these programs (have had many students obtain them) and supplying references to the students, so that they would be more inclined to continue their education.

20. Describe what will be done by the area to increase the number of transfer students from the program. Contact the Academic VP for additional ideas.

In the fall semester, the VP of Academics is now supplying a list of students who have indicated being in a specific program in our area. The list will be distributed to the appropriate faculty members and a general email will be sent to all of these students offering assistance.

Full-time science faculty will participate in "College Night" representing their discipline.

Physics: supplying information on summer internship programs and encouraging students to apply to these programs at national labs around the country (there have been 5 students who have obtained them) so that they would be more inclined to continue their physics/engineering education at a 4-year university.

Supply information on scholarship programs and encouraging students to apply to these programs (have had many students obtain them) and supplying references to the students, so that they would be more inclined to continue their education.

Provide more information on employment opportunities for physics, biology, chemistry and engineering degrees.

Provide information about the transferability of Sauk courses to other four year institutions.

→**Include the transferability plan within the Operational Planning matrix.**

21. For each program (if applicable), *describe* the five-year trends pertaining to the number of bachelor degree completions (Table 2, row i, row h may be used as a reference). If possible, explain the trend.

Biology, Chemistry, Physics, and Engineering show no bachelor completions after FY2010. The number of bachelor completions are recorded as (0) or (n/a).

Data that we received is from the National Collegiate Clearing House. Sometimes there is a delay in updating the data from this source. We have received emails and personal visits from former

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

students who have completed bachelor degrees in engineering, physics, pre-med studies, vet school, and pharmacy schools

22. ICCB expects the college to maintain current articulation agreements for all 1.1 transfer courses.

Use the following link to create a master table that shows the current articulation agreements for the program's courses. <http://www.svcc.edu/students/equivalence.pdf>

This table will also become part of the required ICCB form found at the end of this document.

| <b>SVCC course</b>  | <b>List the universities the class articulates with</b> |
|---------------------|---|
| BIO 103             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| BIO 104             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| BIO 105             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| BIO 105 + 123 + 131 | NIU   |
| BIO 106             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| BIO 108             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| BIO 109             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| BIO 109 + 110       | EIU, NIU, WIU   |
| BIO 110             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| BIO 111             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| BIO 120             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| BIO 123             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| BIO 123 + 131       | NIU, WIU  |
| BIO 131             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| BIO 270             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
|                     |   |
| CHE 101             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| CHE 102             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| CHE 103             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| CHE 105             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| CHE 105 + 106       | UIUC  |
| CHE 106             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| CHE 109             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| CHE 110             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| CHE 201             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| CHE 202             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| CHE 201 + 202       | UIUC  |
|                     |   |
| PHY 175             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| PHY 201             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| PHY 202             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| PHY 210             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| PHY 211             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| PHY 212             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| PHY 212 + 213       | UIUC  |
| PHY 213             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |
| PHY 221             | EIU, ISU, NIU, SIUC, UIUC, WIU                          |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|               |                                |
|---------------|--------------------------------|
| PHY 221 + 222 | NIU, SIUC                      |
| PHY 246       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 247       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 246 + 247 | SIUC, WIU                      |
| PHY 270       | EIU, ISU, NIU, SIUC, UIUC      |

23. List any courses below that do not transfer to at least four universities. For any such course, contact the SVCC's transfer coordinator to determine if a transfer agreement can be agreed upon to "fix" the deficiency. Indicate "none" if there are no transfer problems.

The transfer coordinator was contacted and transfer courses were discussed.  
 BIO 105 + 123 + 131, BIO 123 + 131, BIO 109 + 110, CHE 105 + 106, PHY 212 + 213  
 PHY 221 + 222 and PHY 246 + 247 all transfer to more than four universities as individual courses but do not transfer when articulated together.

→If applicable, include the transferability plan within the Operational Planning matrix.

24. Describe other *recurring* problems related to IAI approved courses transferring to universities and what needs to be corrected in order to obtain resolution, **OR** if there were not any *recurring* problems, indicate "None."

None

→If applicable, add the plan to the Operational Planning matrix.

25. *Explain* any possible changes in transfer requirements or content that may be **imposed** on each program during the next five years, **OR** indicate "None." Include a solution to the problem.

The number of credit hours to complete each program exceeds 65 credit hours: Biology – 70 credit hours; Chemistry – 72 credit hours; Physics 72 credit hours. ICCB may require the number of credit hours for an associate's degree to be reduced to 60 hours. If this possible change occurs, the administration, faculty, transfer coordinator will need to work together to find a solution to reduce physical and life sciences program credit hours while satisfying pre-professional requirements.

→If applicable, add the plan to the Operational Plan matrix.

**Catalog/Brochures**

Systematic efforts by the program aimed at attracting students to the program and increasing the numbers of declared majors.

26. Access the college catalog at <http://catalog.svcc.edu/>. Is the information about each degree and certificate being reviewed within the SVCC catalog up-to-date (be sure to review course descriptions too)? Describe all discrepancies or indicate "up-to-date."

Up-to-date

→If applicable, add the catalog update plan to the Operational Planning matrix.

27. SVCC recruiters may use brochures as a way to market your program. Does the program or individual degrees/certificates have a brochure? If a brochure already exists, it is up-to-date? (Contact the marketing department if you are unsure.)

A Physical and Life Sciences brochure has been prepared and is up-to-date.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

→If applicable, add the plan to update or create program brochures to the Operational Planning matrix.

### **PROGRAM FINANCES & COST EFFECTIVENESS**

(Strategic Objective 3.1, 3.2, & 3.3)

28. Using data **Table 3A (rows a-r)**, has the program(s) stayed within the allocated budget the last five years? Has the allocated budget been adequate for the needs of the program?

Biology – Biology went over budget in FY 2011 and in FY 2012. In FY 2011, the student enrollment increased in the biology discipline and the instructional supplies budget was not adjusted for the increase. Also, in FY 2011, the biology maintenance supply budget was decreased by 40%. A budget increase was approved for FY 2012 and continued in FY 2013 to accommodate the increased enrollment of students. The 5-year under/over budget totals shows that Biology was \$98 over budget.

Chemistry – Chemistry has stayed below budget even though the instructional supplies budget has decreased since in FY 2012. The 5-year under/over budget totals shows that Chemistry was \$7,402 under budget.

Physics – Physics went over budget in FY 2009 and FY 2011 and remained under budget in all other fiscal years. The 5-year under/over budget totals shows that Physics was \$91 over budget.

Instructional supplies budget seems to be adequate if the supply budget is adjusted for student enrollment increases.

Equipment budget is limited (only equipment purchased was in FY 2009). Individual program equipment budgets no longer exist. On average, equipment costs are greater than \$2,000 and lab equipment competes for money from other equipment requests on campus.

→If the program's budget needs to be adjusted, add the plan to adjust the budget to the Operational Planning matrix.

29. Using data **Table 3A & Table 3B (all rows)**, describe the overall five-year income and expense trends for each program.

Biology – Income and expenses increased in FY 2009, FY 2010, FY 2011. In FY 2012, expenses increased and income decreased. In FY 2013, expenses decreased at a greater rate than a decrease in income. All but FY 2009, Biology has a net income of each year of \$100,000 for a 5-year total of \$671,729.

Chemistry – Total expenses were highest in FY 2009, then decreased and have remained relatively constant in each fiscal year. FY 2009 shows a net income deficit but all other years show a net income. Total income is consistent for each year. Chemistry has a 5-year total net income of \$71,704.

Physics – Total expenses and total revenue increased through FY 2011 and the total expenses have decreased each year since then. Total revenue dropped in FY 2012 but increased to its highest total in FY 2013. Physics has a net income deficit for each year. Physics has a 5-year total net income deficit of \$260,117 or an average of \$52,023.40 per year.

Engineering – The Dean of IR and Academic VP decided that Engineering would not be reviewed in the financial category as many of the same classes overlapped with physics.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

30. Describe what your area did during the previous five years to improve the program's financial viability.

Expense budget was monitored monthly by the faculty assistant. Concerns are relayed to faculty members.  
Increased expense efficiency by using the print shop rather than the Xerox machine.  
Faculty do not print notes to give to students. Notes are provide on Moodle or can be purchased in the bookstore.  
Course materials are provided on Moodle.  
Lab materials are ordered at one time for bulk discounts. Quotes are solicited from supply companies for the bulk orders which can lead to further increased savings.  
New sections are added to the schedule to increase revenue.  
Sections of courses have been discontinued due to low numbers.  
Lab fees are monitored to match lab supplies per student.

31. Describe what your area will do over the next five years to improve the financial viability of the program.

Continue to monitor the expense budget on a monthly basis.  
Use the print shop rather the Xerox machine.  
Provide more to all classroom resources on Moodle or in the book store.  
Continue to order material at one time to save money.  
Add new sections of courses as needed based on the wait list.  
Drop unneeded sections of courses due to low numbers.  
Continue to monitor lab fees and lab supplies per student.

→ **Add the financial viability plan to the Operational Planning matrix.**

### **PROGRAM QUALITY**

**Faculty**  
(Strategic Objectives 1.1)

32. Using **Table 1A & 1B (rows b-q)** describe the proportion of full-time, part-time, and dual credit instructors for each program and each class within the program (if different than the program averages). Identify which classes, if any, that are primarily taught by part-time faculty (exclude dual credit instructors from this analysis).

Biology – The number of biology program full-time instructors are equal to or greater than the number of part-time instructors. More sections are taught by the full-time instructor than the part-time instructor.

Chemistry – One dual credit, part-time instructor teaches in the chemistry program.

Physics - No part-time instructors teach in the physics program.

33. Discuss any other staffing concerns not already mentioned above or indicate “none.”

None

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|  |
|--|
|  |
|--|

34. In a previous section, the need of the program was evaluated by examining the average class size. In this section, evaluate class size in the context of quality. Using **Tables 1 A & 1B**, examine the average class size for the program (**1A, row e**) and the average class size (for each class within the program) for all faculty (**1B, row e**), full-time faculty (**1B, row i**), part-time faculty (**1B, row m**), and dual credit instructors (**1B, row p**). Do any concerns exist?

|  |
|--|
| <p>Biology – The five year average class size for the program is 19.6<br/>Average class size for full-time faculty is highest for all classes within the program compared to adjunct faculty. Part-time and dual credit average class averages are consistent.</p> <p>Chemistry – The average class size for the program is 29.0<br/>Average class size for full-time faculty is highest for all classes within the program compared to adjunct faculty. No part-time faculty teach in the chemistry program. In FY2013, one section of CHE 105 was taught by a dual credit instructor.</p> <p>Physics – The average class size for the program is 7.6<br/>No part-time instructors or dual credit instructors teach in the physics program.</p> |
|--|

35. If staffing changes are needed for this area within the next five years, please describe the needed changes, the rationale for the change, and the fiscal year needed OR indicate “none.” Indicate any planned retirements and staffing needs to replace the position currently held by the retiree.

| <b>FY needed</b> | <b>Name of Position</b>        | <b>Describe why the area needs the new position or needs to update the present position. Give as much detail as necessary.</b> | <b>Estimated Salary and Benefits (\$)</b><br>(contact the Director of HR for estimate) |
|------------------|--------------------------------|--|--|
| FY 2013          | Full-time Physics Instructor   | Retirement of the current full-time physics instructor.  | 59,000   |
| FY 2015          | Full-time chemistry instructor | Possible retirement of the current full-time chemistry instructor.   | 59,000   |
|                  |                                |  |  |
|                  |                                |  |  |
|                  |                                |  |  |

→If applicable, add the proposed staffing changes to the Operational Planning matrix.

36. *Describe* the types and quality of communication between full-time faculty, adjunct faculty, and dual credit faculty in each area.

|   |
|---|
| <p>Area leader face-to-face communication with adjunct faculty at adjunct in-service orientations and classroom, lab and hallway conversations.<br/>Mentoring of new part-time faculty by phone, email, face-to-face meetings about procedures, labs and syllabi.<br/>Mentoring of new full-time faculty by face-to-face meetings about procedures, labs and syllabi.</p> |
|---|

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

37. Describe how the communication between full-time faculty, adjunct faculty, and dual credit faculty can be improved?

Full-time instructional faculty should be informed when a dual credit course is offered.

→Add the faculty communication plan to the Operational Planning matrix.

**Professional Development**  
(Strategic Objectives 1.1, 1.2)

38. List all full-time faculty and the professional development they have attended within the last five years (don't include in-service, faculty workshop days or Wednesday meetings, but other on-campus activities could be included). If a full-time faculty member has not participated in professional development within the last five years, still list the faculty name and place "none" in the description area.

| Full-time faculty Name | Description of Professional Development Activities<br>(list all activities for each faculty in one row) | Fiscal Year of Activity |
|------------------------|---|-------------------------|
| Lori Anton             | I3 Workshop, TEM short course   | FY 13,14                |
| David Breen            | None  |                         |
| Brad Smith             | Webinar on Online Biology Lab Presentation  | FY2009                  |
| Robert Duncan          |   |                         |
| David Edelbach         | Biennial Conference on Chemical Education   | FY 2010, 2012           |
| Charles Atchley        | 3 Physics Conferences   | FY 2011, 2012           |
| Eric Forman            | I3 Workshop, CME(each fiscal year)  | FY 2012                 |
| Steve Nunez            | HLC conference  | FY 2012                 |
|                        |   |                         |

39. List any professional development that part-time faculty have attended within the last five years (include all forms of PD including workshops and in-service) or indicate "none". (Include ONLY those that have participated in professional development).

| Part-time faculty Name | Description of Professional Development Activity   | Fiscal Year of Activity                       |
|------------------------|--|---|
| Dom Castaldo           | Fall In-service.   | FY 2010                                       |
| Jamie Sanders          | Three in-services<br>Moodle training<br>Nutrition Education seminars   | FY2010-12,<br>FY 2012<br>FY 2011-13           |
| Cindy Evert            | All Fall and Spring in-services<br>Several Backboard and Moodle Workshops.<br>Illinois Shared Learning Environment Workshop<br>In-services/workshops covering topics such as Backward Design, Flipped Classrooms, Common Core, and Illinois Teaching Standards | FY2009-13<br>FY2009-13<br>FY2013<br>FY2012-13 |
| Elisa Gatz             | 2009 and 2011: Quarknet Bootcamp. One week program at Fermilab in Batavia, Il on high energy physics education.  | FY2009,<br>2011<br>FY 2010                    |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|  |  |  |
|--|--|--|
|  | 2010: HST at CERN. 3 week program at CERN in Geneva, Switzerland on high energy physics education<br>2013: MAVEN Education Ambassador program. 1 week training at Lawrence Berkeley Labs in Berkeley California on teaching about the Mars rover MAVEN.<br>2008-2013: Monthly professional development on a variety of topics for 3 hours and at least one full day per year, Sterling High School.<br>2013: Mac training. 2 days of training on using a Macbook in education.<br>2013: Global Compliance Training for required training such as bloodborne pathogens. | FY 2013<br>FY2009-2013<br>FY 2013<br>FY 2013 |
|  |  |  |
|  |  |  |
|  |  |  |

40. Will any area faculty/staff (including part-time employees) need any *required* professional development within the next 5 years? If yes, then summarize the specialized professional development, the fiscal year of anticipated need, and what employee will need to participate within the professional development.

| <b>Employee Name</b> | <b>Description of Anticipated Professional Development Activity and the reason it will be required.</b> | <b>Fiscal Year of Activity</b> |
|----------------------|---|--------------------------------|
| Eric Forman          | Fifteen credit hours of continuing education  | FY 2014, 2015                  |
|                      |   |                                |
|                      |   |                                |
|                      |   |                                |

→Add the required professional development, for each employee, to the Operational Planning matrix for the appropriate FY.

41. For each full-time faculty/staff, describe the anticipated professional development that he/she will participate in within the next 5 years (not already listed above)?

| <b>Employee Name</b> | <b>Description of Anticipated Professional Development Activity</b> | <b>Fiscal Year of Activity</b> |
|----------------------|---|--------------------------------|
| Brad Smith           | Online delivery workshop  | FY2015                         |
|                      |   |                                |
|                      |   |                                |
|                      |   |                                |
|                      |   |                                |

→Add the professional development plan to the Operational Planning matrix.

**Program Persistence**  
(Strategic Objectives 2.1)

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

42. Using data **Table 4A (row d)**, *describe* the persistence rate for the program and course persistence trends by instructor type.

Biology – The persistence rate for the program is 75.6%. Full-time instructor persistence rate is 74.2%; part-time instructor persistence rate is 79.1%; and dual-credit instructor persistence rate is 100%.

Chemistry – The persistence rate for the program is 83.9%. Full-time instructor persistence rate is 82.8%; part-time instructor persistence rate is 87.9%; and dual-credit instructor persistence rate is 100%.

Physics – The persistence rate for the program is 83.1%. Full-time instructor persistence rate is 82.7%; part-time instructor persistence rate is 0.0%; and dual-credit instructor persistence rate is 100%.

Engineering - The persistence rate for the program is 81.8%. Full-time instructor persistence rate is 81.1%; part-time instructor persistence rate is 0.0%; and dual-credit instructor persistence rate is 100%..

43. Using data **Table 4A (row d)** and **Table 4B (row d)**, compare individual class persistence to the program persistence. If possible, explain any anomalies.

Program persistence rates for introductory courses are all below the college-wide persistence rate of 83.5% found on Dashboard for the College: BIO 103(81.6%), BIO 104(78.1%), BIO105 (64.5%), BIO108 (66.4%), BIO 109(76.8%), CHE 102 (67.5%), CHE103 (77.2%), CHE105 (79.0%).

Biology – The persistence rate for the program is 75.6%. Those courses with a higher persistence rate than the program average are: BIO 103(81.6%), BIO 104(78.1%), BIO 109(76.8%), BIO 110 (85.5%), BIO 111 (89.8%), BIO 120 (87.5%), BIO 123 (94.5%), and BIO 131 (88.7%). Those that fall below the average are: BIO105 (64.5%) and BIO108 (66.4%),

Chemistry – The persistence rate for the program is 83.9%. Those courses with a higher persistence rate than the program average are: CHE 106 (86.8%), CHE 201(90.9%), and CHE 202 (95.1%). Those that fall below the program average are: CHE 102 (67.5%), CHE 103 (77.2%), and CHE 105 (79.0%).

Physics – The persistence rate for the program is 83.1% Persistence rates are at or above 83.1% for all courses.

Biology/Chemistry - Persistence rates are lowest in non-major courses and the entry course into a program.

44. Using data **Tables 6A & 6B**, compare the persistence rate of each ethnic group (**6B, row g**) to the college average (**6A, row g**). Do any obvious anomalies exist?

Biology – the biology program 5-year mean persistence rate (75.6%) is lower than the college 5-year mean persistence rate (83.0%). The mean persistence rate for each ethnic group in the biology program is consistent with the persistence rates for each ethnic group for the college. The Black mean persistence rate is lowest for the college. The Hispanic mean persistence rate (65.8%) and the Black mean persistence rate (67.6%) are the lowest in the biology program.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

Chemistry – the chemistry program 5-year mean persistence rate (83.9%) is higher than the college 5-year mean persistence rate (83.0%). The mean persistence rate for each ethnic group in the chemistry program is consistent with each other and the persistence rates for each ethnic group for the college. The Female mean persistence rate (82.9%) is lowest for the chemistry program.

Physics – the physics program 5-year mean persistence rate (83.1%) is higher than the college 5-year mean persistence rate (83.0%). The mean persistence rate for each ethnic group in the physics program is consistent with each other and the persistence rates for each ethnic group for the college.

The Female mean persistence rate (81.2%) is lowest for the physics program.

Engineering – the engineering program 5-year mean persistence rate (81.8%) is lower than the college 5-year mean persistence rate (83.0%). The mean persistence rate for each ethnic group in the engineering program is consistent with the persistence rates for each ethnic group for the college. The Black and Asian persistence rates (75.0%) are lowest for the engineering program.

45. Describe what the area has done to improve persistence trends since the last program review. Indicate how frequently each effort was conducted during the past five years.

Clickers in astronomy - each semester offered since spr2011  
 Added a new simulation physics - each semester offered since spr2011  
 Give daily quizzes in entry level courses into the biology and chemistry programs - each semester offered since 2010  
 Use of the early alert system with counseling office  
 Computer testing in bio 105, 123, 131 - each semester offered since 2010

Physics: new labs have been added to all physics classes to increase their relevance to lecture course material; simulation software was used in classroom activities for concepts which are difficult to demonstrate in our classroom; teamwork group activities are given each class period on concepts introduced in the previous class

46. In the table below, list all courses within the program that have prerequisites. Determine class persistence on the data tables found in **Table 4B (row d)**—if the course prerequisite course is outside the program, just list the course and ignore the rate. Add the persistence rates to the table from the last fiscal year. If classes do not have prerequisites, indicate “none” in the table.

| Prerequisite Course  | Persistence Rate  | Course with Prerequisite | Persistence Rate |
|--|---|--------------------------|------------------|
| BIO 105 or BIO 108 with a grade of C or higher OR two years of high school biology with a C or higher within the last five years AND CHE 102 or CHE 103 or CHE 105 with a grade of C or higher OR one year of high school chemistry with a grade of C or higher within the last five years | BIO 105 - 64.5%<br>BIO 108 - 66.4%<br>CHE 102-67.5%<br>CHE 103-77.2%<br>CHE 105-79.0% | BIO 109                  | 76.2%            |
| BIO 109 with a grade of C  | BIO 109-76.2%   | BIO 110                  | 85.5%            |
| BIO 105 with a grade of C or higher or BIO 108 with a grade of   | BIO 105 - 64.5%<br>BIO 108 - 66.4%  | BIO 111                  | 89.8%            |

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

|   |                                |         |        |
|---|--------------------------------|---------|--------|
| C, or higher or BIO 109 with a grade of C, or permission of instructor                  | BIO 109-76.2%                  |         |        |
| BIO 105   | BIO 105 - 64.5%                | BIO 123 | 94.5%  |
| BIO 105 is required and MAT 115 or higher is recommended                                | BIO 105 - 64.5%                | BIO 131 | 88.7%  |
|   |                                |         |        |
| High school chemistry or CHE 103 or CHE 102. Ability to perform algebraic manipulations | CHE 102-67.5%<br>CHE 103-77.2% | CHE 105 | 79.0%  |
| CHE 105   | CHE 105-79.0%                  | CHE 106 | 86.8%  |
| CHE 106   | CHE 106-86.8%                  | CHE 201 | 90.9%  |
| CHE 201   | CHE 201-90.9%                  | CHE 202 | 95.1%  |
|   |                                |         |        |
| MAT 080 or MAT 106 or two years of high school algebra with grades of C or higher       |                                | PHY 175 | 93.8%  |
| MAT 121   |                                | PHY 201 | 89.8%  |
| PHY 201   | PHY 201-89.8%                  | PHY 202 | 97.0%  |
| High school physics or PHY 201 and MAT 203.   | PHY 201-89.8%                  | PHY 211 | 88.1%  |
| PHY 211 and MAT 204 or concurrent enrollment in MAT 204                                 | PHY 211-88.1%                  | PHY 212 | 87.5%  |
| PHY 212 and MAT 204.  | PHY 212-87.5%                  | PHY 213 | 100.0% |
| PHY 211 and MAT 204 or concurrent enrollment in MAT 204.                                | PHY 211-88.1%                  | PHY 221 | 100.0% |
| PHY 221 and MAT 205 or concurrent enrollment in MAT 205.                                | PHY 221-100%                   | PHY 222 | 95.0%  |
| PHY 212 and MAT 211 or consent of instructor.   | PHY 212-87.5%                  | PHY 246 | 100.0% |
| PHY 246 or concurrent enrollment and PHY 212 and MAT 211 or consent of instructor.      | PHY 246-100%<br>PHY-212-87.5%  | PHY 247 | 85.7%  |

Are the persistence rates in the courses with prerequisites appropriate? If the persistence rates need to be addressed, what plan should be implemented to either investigate or make changes to the program or classes?

Persistence rates in courses with prerequisites are appropriate. Persistence rates are lowest in the courses having a high school prerequisites into a course.

47. Describe what the area will do to improve persistence trends in the entire program during the next five years.

Collect data to compare persistence rates of high school students entering into BIO 109 and CHE 105 directly from high school to students completing prerequisites on campus. (For example, ACT scores of students entering these courses.)

→Add the persistence plan (including any plan to address prerequisite classes) to the Operational Planning matrix.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

### Program Grade Distributions

(Strategic Objectives 1.1, 2.1 & 2.2)

48. Using **Table 4A (rows e-k)**, describe the overall grade distributions for each program as a whole. In the area's opinion, are the grade distributions appropriate? If you choose, you can compare grade distributions of this program with other programs at the college by clicking on "persistence" at <http://www.svcc.edu/departments/irp/reporting/strategic-planning-dashboard.html>

Biology – Full-time and part-time overall grade distributions are appropriate.

Chemistry – Full-time grade distributions are appropriate.

Physics - Full-time instructor overall grade distributions are appropriate.

Engineering - Full-time instructor overall grade distributions are appropriate

The five year college averages for grades are: A - 35%; B - 26.5%; C - 16.3%; D – 4.8%; F – 5.3%; W – 11.6%.

The physical and life sciences programs give about half as many "A" grades (16.3 – 20%) as the college does as a whole.

49. Using **Tables 4A & 4B (e-k)**, do any class grade distributions differ considerably from the program grade distributions? If yes, explain the difference.

As stated before, when it applies, class grade distributions are different between full-time biology/chemistry instructors and part-time/dual credit instructors. Part-time/dual credit instructors give more "A" and "B" grades and fewer "D", "F" and "W" grades.

Pre-Professional Physics Program: Physics 202 has a higher percentage of A's and B's than Physics 201. Students in Physics 202 are highly motivated students who have excelled in Physics 201. Physics/Engineering Program: Physics 213, 221, and 222 have a higher percentage of A's and B's than Physics 211 and Physics 212. Students in the former classes are students who have demonstrated excellent learning skills in the prerequisite classes of Physics 211 and Physics 212.

Physics/Engineering 211, 212, 213; 221, 222; 246, 247: physics and engineering majors (A and B grades constitute roughly 90% of the total grades)

Compared to other physics/engineering programs at similar community colleges, these grade distributions are higher. This is probably the result of a more one-on-one teaching interaction between teacher and student at SVCC.

50. Using **Table 4A (rows e-k)**, compare the program grade distributions between full-time, part-time, and dual credit faculty. Are any concerns identified? What does the committee recommend to address the concerns?

Biology – Full-time and part-time overall grade distributions are appropriate. Dual credit instructors give 60% "A grades" compared to approximately 15% "A grades" with full-time and part-time instructors. No "F" or "W" grades were given to dual credit students.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

Chemistry – Full-time grade distributions are appropriate. “A grades” are higher with part-time instructors (37.4%) and dual credit instructors (56.3%) than full-time instructors (15.3%). No “F” grades are given by part-time instructors. No “F” or “W” grades are given to dual credit students.

Physics - Full-time instructor overall grade distributions are appropriate. Dual credit instructors give (56.3%) “A grades” compared to (19.8%) “A grades” with full-time instructors. No “D, F or W” grades given to dual credit students. No data for part-time instructors.

Engineering - Full-time instructor overall grade distributions are appropriate. Dual credit instructors give (56.3%) “A grades” compared to (20%) “A grades” with full-time instructors. No “D, F or W” grades given to dual credit students. No data for part-time instructors.

Dual credit instructors in all programs give approximately 2-3 times more “A grades” than full-time instructors.

Chemistry part-time instructors give approximately two times more “A grades” than full-time instructors.

Full-time, part-time and dual credit instructors may not be aware of how their grade distribution compares to the program, other instructors (the names of the instructors were not listed), to other sections of the same course and to all other college courses at SAUK. At one time instructors received this type of information. All full-time, part-time, and dual credit instructors should receive this information so each type of instructor is aware of how their grade distribution compares to other categories. This awareness can help conversations begin concerning grade distributions within the program and the college as a whole.

51. Using **Table 5**, compare the grade distributions between instructors for the same classes. Without using the names of instructors, are any significant differences identified? If concerns are identified, what does the committee recommend to address the concern?

BIO 105 – Full-time instructor #1, part-time instructor #2, and dual credit instructor #4 have similar grade distributions (part-time instructor #2 gives more “B’s 31% compared to 11-18% by other instructors but dual instructor #3 gives all “A’s” (88.2%) and “B’s” (11.8%).

BIO 131 – Full-time instructor #6 has 25.9% “A’s” and 39.7 “B’s” and all other grades represented but dual instructor #7 gives all “A’s” (75%) and “B’s” (25%) and no other grades represented.

CHE 105 - Full-time instructor #8 has 12.49% “A’s” and 25.7 “B’s” and all other grades represented but dual instructor #9 has 56.3% “A’s”, 31.3% “B’s”, 12.5% “C’s” and no other grades represented.

As an area, we need to investigate the discrepancy between overall grade distribution, especially the “A” and “B” grade category between dual credit instructors and full-time instructors.

52. Using data **Tables 6A & 6B**, compare the grade distributions of each ethnic group (**6B, rows h-n**) to the college average (**6A, rows h-n**). Do any obvious anomalies exist? Does the committee have any suggestions to address these anomalies?

The five year college averages for grades are: A - 35%; B - 26.5%; C - 16.3%; D - 4.8%; F - 5.3%; W - 11.6%.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

The physical and life sciences programs give about half as many "A" grades (16.3 – 20%) as the college does as a whole.

The grade distributions of each ethnic compares to grades given within each program.

53. Summarize any concerns about program/class grade distributions and devise a plan to address the concerns or indicate "none."

Full-time, part-time and dual credit instructors may not be aware of how their grade distribution compares to the program, other instructors (the names of the instructors were not listed), other sections of the same course and to all other college courses at SAUK. At one time instructors received this type of information. All full-time, part-time, and dual credit instructors should receive this information so each type of instructor is aware of how their grade distribution compares to other categories. This awareness can help conversations begin concerning grade distributions within the program and the college as a whole.

- **Add the plan to address grade distributions to the Operational Planning matrix.**

### Program Retention

(strategic objective 2.2)

54. Using data **Tables 7 A & B**, compare the fall to spring retention rates (**row a**) and fall to fall retention rates (**row b**) of the program to the college averages. If you choose, you can compare retention rates of this program with other programs at the college by clicking on "retention" at <http://www.svcc.edu/departments/irp/reporting/strategic-planning-dashboard.html>

The college's 5-year average for Fall to Spring retention rates is 78.2%.

The college's 5-year average for Fall to Fall retention rates is 60.6%.

Area retention rates are above the college's averages in all programs.

Biology – The 5-year average for Fall to Spring retention rates is 79.3%.

The 5-year average for Fall to Fall retention rates is 66.3%.

Chemistry - The 5-year average for Fall to Spring retention rates is 81.3%.

The 5-year average for Fall to Fall retention rates is 66.7%.

Physics - The 5-year average for Fall to Spring retention rates is 87.5%.

The 5-year average for Fall to Fall retention rates is 90.0%.

Engineering - The 5-year average for Fall to Spring retention rate is 84.4%.

The 5-year average for Fall to Fall retention rates is 67.9%.

55. *Describe* what the area already did to improve retention trends since the last program review. Indicate how frequently each effort was conducted during the past five years.

Use of the early alert system.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

Physics: increase the number of group activities performed in class on lecture material; increase the number of one-on-one talks with individual students who are having difficulty in the class.

56. Describe what the area will do to improve retention trends during the next five years.

In the fall semester, the VP of Academics is now supplying a list of students who have indicated being in a specific program in our area. The list will be distributed to the appropriate faculty members and a general email will be sent to all of these students offering assistance.

Increase the number of one-on-one talks with individual students who are having difficulty in the class.

Start a “Science” club to help connect with students, expand interest in the sciences and increase retention.

→Add the plan to address program retention to the Operational Planning matrix.

**Curriculum: Academic Assessment**  
(Strategic Objective 1.1)

Refer to the assessment data base or program operational plans.

57. List all of the Gen-Ed and area competencies that have been assessed in the previous five years and describe any curricular changes that occurred due to the assessment.

| Fiscal Year | Gen-Ed Competencies   | Describe the curricular changes that occurred due to this assessment practice or indicate “none” |
|-------------|---|--|
| FY2009      | Data cannot be located  | none   |
| FY2010      | Research  | none   |
| FY2011      | Problem Solving, Writing, Oral Presentation, Technology, Quantitative Reasoning, Research | none   |
| FY2012      | Special Project, Problem Solving, Quantitative Reasoning,                                 | none   |
| FY2013      | Problem Solving, Oral Presentation, Technology, Quantitative Reasoning                    | none   |
|             |   |  |

| Fiscal Year | Area Level Competencies       | Describe the curricular changes that occurred due to this assessment practice or indicate “none” |
|-------------|-------------------------------|--|
| FY2009      | Data cannot be located        | None   |
| FY2010      | Scientific Principles         | None   |
| FY2011      | Scientific Principles         | None   |
| FY2012      | Extract Scientific Principles | None   |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|        |                               |      |
|--------|-------------------------------|------|
| FY2013 | Extract Scientific Principles | None |
|--------|-------------------------------|------|

58. List all of the Gen-Ed and area competencies that have NOT been assessed in the previous five years and indicate whether these will be assessed in the future, will not be assessed, will be eliminated (area level only), or replaced (area level) **OR** indicate “All have been assessed.”

| <b>Fiscal Year</b> | <b>Gen-Ed Competencies</b>  | <b>Why has it not be assessed? Will the competency be assessed within the next five years? If so, when?</b>   |
|--------------------|---|---|
| FY2012             | Gen-Ed Reading competency was not assessed, however the Special Project –Reading was assessed | Reading objectives do not fit into area objectives to measure. No one plans to assess the Gen-Ed reading competency in the next five years. The Special Project – Reading competency will be assessed within the next five years. |
| FY2013             | Gen-Ed Listening competency was not assessed  | No one plans to assess the Gen-Ed Listening competency in the next five years.  |
| FY2013             | Gen-Ed Ethical Reasoning competency was not assessed  | No one plans to assess the Gen-Ed Ethical Reasoning competency in the next five years.  |

| <b>Fiscal Year</b> | <b>Area Level Competencies</b>                         | <b>Why has it not be assessed? Will it be assessed in the future, eliminated, or replaced?</b> |
|--------------------|--|--|
| FY2013             | Extracting Scientific Knowledge, Scientific Principles | All have been assessed   |
|                    |  |  |
|                    |  |  |
|                    |  |  |
|                    |  |  |

→Add the plan to update area level assessment competencies to the Operational Planning matrix.

59. For the five years previous to this program review, what fraction of full-time faculty contributed data to at least one Gen-Ed competency? To at least one area objective? Record data as a fraction (for example 4/5 full-time faculty contributed to Gen-Ed competencies.)

| <b>Fiscal Year</b> | <b>Gen-Ed Competencies Full-time compliance (indicate using a fraction)</b> | <b>Area Competencies Full-time compliance (indicate using a fraction)</b> |
|--------------------|---|---|
| FY2009             | No data   | No data   |
| FY2010             | 2/6   | 1/6   |
| FY2011             | 5/6   | 6/6   |
| FY2012             | 4/6   | 4/6   |
| FY2013             | 4/6   | 4/6   |

→Please include (if it is not already) a permanent assessment goal of 100% participation by full-time faculty for both Gen-Ed and Area objectives within the Operational Planning matrix.

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

60. For the five years previous to this program review, what fraction of adjunct faculty (not dual credit) contributed data to at least one Gen-Ed competency? At least one area objective? Supply the fraction of adjuncts that are contributing to academic assessment data (for example 4/5 adjunct faculty contributed to Gen-Ed competencies.)

| <b>Fiscal Year</b> | <b>Gen-Ed Competencies<br/>(Fraction)</b> | <b>Area Objectives<br/>(Fraction)</b> |
|--------------------|---|---------------------------------------|
| FY2009             | 0/6                                       | 0/6                                   |
| FY2010             | 0/6                                       | 0/6                                   |
| FY2011             | 0/6                                       | 0/6                                   |
| FY2012             | 0/6                                       | 0/6                                   |
| FY2013             | 0/6                                       | 0/6                                   |

→**Add a communication process to the Operational Plan matrix to increase adjunct participation in the academic assessment process.**

61. For the five years previous to this program review, what fraction of dual credit faculty (not adjunct) contributed data to at least one Gen-Ed competency? At least one area objective? Supply the fraction of dual credit faculty that are contributing to academic assessment data (for example 4/5 dual credit faculty contributed to Gen-Ed competencies.)

| <b>Fiscal Year</b> | <b>Gen-Ed Competencies<br/>(Fraction)</b> | <b>Area Objectives<br/>(Fraction)</b> |
|--------------------|---|---------------------------------------|
| FY2009             | 0/1                                       | 0/1                                   |
| FY2010             | 0/1                                       | 0/1                                   |
| FY2011             | 0/1                                       | 0/1                                   |
| FY2012             | 0/1                                       | 0/1                                   |
| FY2013             | 0/1                                       | 0/1                                   |

→**Add a communication method to the Operational Plan matrix to increase dual credit participation in the academic assessment process.**

62. *Explain* any major curricular changes (outside of assessment) made during the past five years and *why* the changes were made (i.e., the evidence that change was needed). Describe the positive and/or negative results of those changes. If no curricular changes were made (outside of assessment) indicate “None.”

|      |
|------|
| None |
|------|

63. List any courses, certificates, or degrees that have been significantly altered, deleted, or added to the program within the last five years.

| <b>Course/Certificate/Degree</b> | <b>Significantly altered, deleted, or added</b> | <b>Check with the VP of Academics to verify if ICCB has a record of the change. Add “Yes” if ICCB has record or “No” if ICCB does not.</b> |
|----------------------------------|---|--|
| None                             |   |  |
|                                  |   |  |
|                                  |   |  |
|                                  |   |  |
|                                  |   |  |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

64. Describe anticipated curricular changes that the program will propose during the next five years and the accompanying needs that will be required or indicate “None.”

|   |  |
|---|--|
| <b>Curricular change</b><br>(Description)                           | Physics: no major changes; IAI Physics Committee mandated changes several years ago and already implemented at SVCC  |
| <b>Equipment and/or supply needs</b><br>(Description and Expense)   | Physics: Much of the equipment used in the physics classes needs updating or replaced due to age. New computer software is needed to interface SAUK computers and programs (WORD, EXCEL, etc) with a new set of electronic probes that record and analyze experimental data. Total Estimated Cost: \$6,000<br><br>Also, the current antiquated set of VHS tapes containing physics demonstrations should be replaced with CD versions of these demonstrations and others. Total Estimated Cost: \$800. |
| <b>Facility needs</b><br>(Description and Expense)                  | Physics: Sound-proofing on ceiling of 2G10 where physics classes are taught: approximately \$6,000<br>Complete third floor science area remodeling. Current estimate: \$3,914,500  |
| <b>Personnel and/or training needs</b><br>(Description and Expense) | Two new full-time physics instructors needed \$59,000 each   |
| <b>Total estimated expense</b>                                      | \$4,045,900  |

Copy and paste a new table if needed

→Add the anticipated curricular changes and the plan to address them to the Operational Planning matrix.

**Curriculum: Course Outlines**  
(Strategic Objective 6.2)

65. ICCB requires that we maintain current course outlines. Therefore to help with this process, all course outlines for this area must be updated to the current Fiscal Year and a curriculum committee action form submitted for each course. Complete the appropriate Curriculum Committee Action Forms for each course and send electronically to the VP of Academics. Action forms are found on FAST. *\*Catalog concerns should have been addressed in a previous section of this program review. Be sure to incorporate those catalog findings into your new outlines so that the catalog will be appropriately adjusted.*

| <b>Course Number</b> | <b>Has the outline been updated to reflect current academic practices &amp; current FY?<br/>Yes or No.</b> | <b>Has the Curriculum Committee Action Form been completed and sent electronically to the VP of Academics?</b> | <b>Has an accompanying master syllabus been completed (using the syllabus template) for each class and sent</b> |
|----------------------|--|--|---|
|----------------------|--|--|---|

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|         |     | Yes or No. | electronically to the VP of Academics? |
|---------|-----|------------|--|
| BIO 103 | Yes | Yes        | Yes                                    |
| BIO 104 | Yes | Yes        | Yes                                    |
| BIO 105 | Yes | Yes        | Yes                                    |
| BIO 108 | Yes | Yes        | Yes                                    |
| BIO 109 | Yes | Yes        | Yes                                    |
| BIO 110 | Yes | Yes        | Yes                                    |
| BIO 111 | Yes | Yes        | Yes                                    |
| BIO 120 | Yes | Yes        | Yes                                    |
| BIO 123 | Yes | Yes        | Yes                                    |
| BIO 131 | Yes | Yes        | Yes                                    |
| BIO 270 | Yes | Yes        | Yes                                    |
|         |     |            |  |
| CHE 101 | Yes | Yes        | Yes                                    |
| CHE 102 | Yes | Yes        | Yes                                    |
| CHE 103 | Yes | Yes        | Yes                                    |
| CHE 105 | Yes | Yes        | Yes                                    |
| CHE 106 | Yes | Yes        | Yes                                    |
| CHE 201 | Yes | Yes        | Yes                                    |
| CHE 202 | Yes | Yes        | Yes                                    |
|         |     |            |  |
| PHY 175 | Yes | Yes        | Yes                                    |
| PHY 201 | Yes | Yes        | Yes                                    |
| PHY 202 | Yes | Yes        | Yes                                    |
| PHY 210 | Yes | Yes        | Yes                                    |
| PHY 211 | Yes | Yes        | Yes                                    |
| PHY 212 | Yes | Yes        | Yes                                    |
| PHY 213 | Yes | Yes        | Yes                                    |
| PHY 221 | Yes | Yes        | Yes                                    |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|         |     |     |     |
|---------|-----|-----|-----|
| PHY 222 | Yes | Yes | Yes |
| PHY 246 | Yes | Yes | Yes |
| PHY 247 | Yes | Yes | Yes |
| PHY 270 | Yes | Yes | Yes |

\*If more space is needed, you can add more rows to this table by “right clicking” and “inserting rows.”

**STUDENT INPUT**

Efforts aimed at obtaining student opinions and suggestions for improving the program.  
(Strategic Objective 4.2)

66. Describe the efforts during the previous five years to obtain student input, the frequency of each effort, what was learned, and changes that were made **OR** indicate “Not applicable.”

| Source of Input      | Description of activity, the frequency of each effort, what was learned, and changes that were made to the program.                                  |
|----------------------|--|
| Student Interviews   |  |
| Student Surveys      |  |
| Student Focus Groups |  |
| Other                | Physics: student feedback pages (3 short questions) are given to students in each class once a week to assess their perceived level of understanding |
| Other                |  |

67. Describe the efforts to obtain student input that will be attempted during the next five years and the years they will be attempted. (**Reminder!** All student surveys or focus group questions need to be submitted to SVCC’s IRB for approval. When appropriate, contact the Dean of Institutional Research for the appropriate form.)

| Source of Input      | Description of planned activities and the planned frequency of each effort.   | Fiscal year of proposed activity |
|----------------------|---|----------------------------------|
| Student Interviews   |   |                                  |
| Student Surveys      | The Physical and Life Science area provides quality learning opportunities designed to address the diverse needs of today’s student population. Survey physical and life science students and determine which IAI approved courses meet <b>their</b> needs. | FY2015                           |
| Student Focus Groups |   |                                  |
| Other                |   |                                  |
| Other                |   |                                  |

→If applicable, add the plan to the Operational Planning matrix.

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

**NON-STUDENT INPUT**

Definition: Formal efforts aimed at obtaining information regarding program content and improvement from informed sources other than students, for the purpose of keeping the program current and relevant (e.g. IAI, staying informed of changing transfer requirements, meeting with other departments, meeting with colleagues from other colleges).  
(Strategic Objective 4.1)

68. Describe the efforts that were used within the last five years to obtain input, the frequency of each effort, what was learned, and changes that were made during the previous five years **OR** indicate “Not applicable. Your past operational plans may be of help here.

| Method                              | Description of activity, the frequency of each effort, what was learned, and changes that were made to the program.  |
|-------------------------------------|--|
| Conference attendance               |  |
| IAI updates                         | IAI Physics Committee updates are evaluated each year to see if changes need to be instituted at SVCC.<br>Area faculty are members on IAI chemistry and biology majors panels  |
| Networking with colleagues          | Physics: yearly contact with colleagues at University of Illinois, Champaign-Urbana and University of Illinois, Chicago to see if curriculum content is appropriate for undergraduate physics/engineering majors                         |
| Professional association membership | Physics: American Association of Physics Teachers; American Institute of Physics; Exploratorium Committee of San Francisco – ongoing each year; introduce more online components to the classes and unique demonstrations and activities |
| Other                               |  |
| Other                               |  |

69. Describe the formal efforts to obtain non-student input that will be attempted during the next five years and the planned year of implementation.

| Description of activity | FY |
|-------------------------|----|
|                         |    |
|                         |    |
|                         |    |
|                         |    |

→If applicable, add the plan to the Operational Planning matrix for the appropriate FY.

**Learning Support Services**

Definition: College services that are *specific to this program*, which are utilized by students outside of the classroom (i.e. tutoring in the LAC, special materials in the LRC, computer lab resources, etc.)  
(Strategic Objectives 1.4 & 1.5)

70. Describe the current learning support services that are *specific to this program* that are available to students (study materials, videos, etc.), **OR** indicate “None.”

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

CHE 102 and 103 videos on Moodle  
 BIO 105 animations and videos on Moodle  
 Physics: all classes have solved homework problems from each chapter of the course textbook in the LRC.  
 Physics, GSC 105: all classes have notes on Moodle that summarize the key concepts and equations from each chapter of the course textbook  
 Physics, GSC 105: all classes have animations and videos illustrating key concepts on Moodle  
 GSC 105 (Astronomy): a study guide is available for students for each chapter of the text for purchase in the college bookstore.  
 GSC 105 (Astronomy): PowerPoint slides from each lecture are available on Moodle.

71. Describe any additional learning support service that is needed of each program and the FY needed, **OR** indicate “None.”

| Learning Support Service Recommendation<br>(Be sure to include the recommendation under “equipment and supplies” found below). | FY |
|--|----|
| None   |    |
|  |    |
|  |    |

**Course Scheduling (Strategic Objective 1.3)**

72. Use the Master Schedule to help complete this table. Provide the program schedule by listing each class by course number and use an “X” to indicate each semester it was offered and whether the class was taught during the day (before 4pm), taught at night (4pm or later), was taught as a hybrid class or was strictly taught as an online class.

| COURSE NUMBER | DAY<br>(BEFORE 4 PM)     | PREVIOUS FY:<br>FALL SEMESTER | PREVIOUS FY:<br>SPRING SEMESTER | CURRENT FY:<br>FALL SEMESTER | CURRENT FY:<br>SPRING SEMESTER |
|---------------|--------------------------|-------------------------------|---------------------------------|------------------------------|--------------------------------|
|               | NIGHT<br>(4 PM OR LATER) |                               |                                 |                              |                                |
|               | ONLINE                   |                               |                                 |                              |                                |
|               | HYBRID                   |                               |                                 |                              |                                |
| BIO 103       | Day                      | X                             | X                               | X                            | X                              |
|               | Night                    | X                             | X                               | X                            | X                              |
|               | Hybrid                   |                               |                                 |                              |                                |
|               | Online                   |                               |                                 |                              |                                |
| BIO 104       | Day                      | X                             | X                               | X                            | X                              |
|               | Night                    |                               |                                 |                              |                                |
|               | Hybrid                   |                               |                                 |                              |                                |
|               | Online                   | X                             | X                               | X                            | X                              |
| BIO 105       | Day                      | X                             | X                               | X                            | X                              |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|         |        |   |   |   |   |
|---------|--------|---|---|---|---|
|         | Night  | X | X | X | X |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| BIO 108 | Day    | X | X | X | X |
|         | Night  | X | X | X | X |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| BIO 109 | Day    | X | X | X | X |
|         | Night  | X |   | X |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| BIO 110 | Day    |   | X |   | X |
|         | Night  |   | X |   | X |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| BIO 111 | Day    |   | X |   | X |
|         | Night  | X | X | X | X |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| BIO 120 | Day    | X | X | X | X |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online | X | X | X | X |
| BIO 123 | Day    |   | X |   | X |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| BIO 131 | Day    | X |   | X |   |
|         | Night  |   |   |   |   |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|         |        |   |   |   |   |
|---------|--------|---|---|---|---|
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
|         | Day    |   |   |   |   |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
|         | Day    |   |   |   |   |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| CHE 102 | Day    | X | X | X | X |
|         | Night  |   | X |   | X |
|         | Hybrid |   |   |   |   |
|         | Online | X | X | X | X |
| CHE 103 | Day    | X | X | X | X |
|         | Night  | X | X | X | X |
|         | Hybrid | X |   | X |   |
|         | Online |   |   |   |   |
| CHE 105 | Day    | X |   | X |   |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| CHE 106 | Day    |   | X |   | X |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| CHE 201 | Day    | X |   | X |   |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|         |        |                    |   |      |   |
|---------|--------|--------------------|---|------|---|
| CHE 202 | Day    |                    | X |      | X |
|         | Night  |                    |   |      |   |
|         | Hybrid |                    |   |      |   |
|         | Online |                    |   |      |   |
| PHY 175 | Day    | X                  |   | X    |   |
|         | Night  |                    | X |      | X |
|         | Hybrid |                    |   |      |   |
|         | Online |                    |   |      |   |
| PHY 201 | Day    | X                  |   | X    |   |
|         | Night  |                    |   |      |   |
|         | Hybrid |                    |   |      |   |
|         | Online |                    |   |      |   |
| PHY 202 | Day    | X                  |   | X    |   |
|         | Night  |                    |   |      |   |
|         | Hybrid |                    |   |      |   |
|         | Online |                    |   |      |   |
| PHY 210 | Day    | X-TU<br>(tutorial) |   | X-TU |   |
| TU      | Night  |                    |   |      |   |
|         | Hybrid |                    |   |      |   |
|         | Online |                    |   |      |   |
| PHY 211 | Day    |                    | X |      | X |
|         | Night  |                    |   |      |   |
|         | Hybrid |                    |   |      |   |
|         | Online |                    |   |      |   |
| PHY 212 | Day    | X                  |   | X    |   |
|         | Night  |                    |   |      |   |
|         | Hybrid |                    |   |      |   |
|         | Online |                    |   |      |   |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|         |        |   |   |   |   |
|---------|--------|---|---|---|---|
| PHY 213 | Day    |   | X |   | X |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| PHY 221 | Day    | X |   | X |   |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| PHY 222 | Day    |   | X |   | X |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| PHY 246 | Day    |   | X |   | X |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
| PHY 247 | Day    |   | X |   | X |
|         | Night  |   |   |   |   |
|         | Hybrid |   |   |   |   |
|         | Online |   |   |   |   |
|         |        |   |   |   |   |

\*Use the table above to answer the following three questions.

73. Using the table above and the college catalog, answer the following question. For each degree and certificate under review, have courses been offered that are properly sequenced to allow a student to complete every degree and/or certificate in the maximum number of semesters specified?

Yes

If no, please specify what degrees or certificates are problematic and the solution to the scheduling problem.

74. Has each class been offered at night at least once during every academic year (fall or spring semesters)?

No

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

BIO 105 is offered at night but BIO 123 and BIO 131 are only offered in the daytime. BIO 105 is offered at night for students in the biology program and pre-professional program. BIO 123 and BIO 131 is not offered at night because of low student enrollment and no new requests from counseling for a night section have been received.

BIO 120 – Records show that the last night section offered for BIO 120 occurred in the Spring 2007 semester with an enrollment of seven students. No new requests from counseling for a night section have been received.

CHE 105, CHE 106 - no new requests from counseling for a night section have been received.  
CHE 201 and CHE 202 - low student enrollment and no new requests from counseling for a night section have been received.

PHY 211, PHY 212, PHY 213 - low student enrollment and no new requests from counseling for a night section have been received. Limited number of faculty to teach courses.

If no, please specify what class has not been offered at night and justify if the class should or should not be offered at night.

75. Has each class been offered online or as a hybrid class at least once during every academic year?

No physical or life sciences degree program courses are offered online or as a hybrid.

If no, please specify what class has not been offered online or as a hybrid class and justify if the class should or should not be offered online or as a hybrid class.

No know or new requests from counseling for a online or hybrid class sections.

76. During the past five years, have scheduling conflicts been avoided by coordinating schedules with other required courses within your own area?

Biology, chemistry and physics course schedules have been coordinated to prevent/minimize conflicts in scheduling.

Organic CHE 201 conflicts with PHY 213

PHY 221 is offered on Friday to avoid conflicts

If no, what scheduling change can occur to reduce/avoid conflicts?

77. During the past five years, have scheduling conflicts been avoided by coordinating schedules with other required courses outside of this area?

Math courses have been coordinated to avoid required conflicts in the program.

Conflicts with BIO 109 Lab, BIO 110 Lab and CHE 105, 106. Students are allowed to leave lab 10 minutes early

Activity periods limit lecture and lab offerings.

If no, what scheduling changes can occur to reduce/avoid conflicts?

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

78. Summarize the scheduling changes that need to occur using information from the previous five questions.

None – Conflicts over several semesters have produced the current schedule offerings to meet the needs of the majority of students.

→**If scheduling changes are necessary include the recommended changes in the Operational Planning matrix.**

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

**EQUIPMENT & SUPPLIES**

(Strategic Objective 1.6)

79. Identify current or anticipated equipment, software, and/or supply deficiencies by the program and the FY needed. Also supply cost estimates, the anticipated fiscal year needed, and a rationale for the purchase **OR** indicate “None.”

| <b>FY Needed</b> | <b>Name of Item</b>   | <b>Describe how the item will contribute to the area. What classes will be impacted (if applicable). Describe how the item may create a cost savings to the area (if applicable).</b> | <b>Quantity (#)</b> | <b>Unit Cost (\$)</b> | <b>Total Cost of Equipment (\$)</b> | <b>Additional Annual Cost (if applicable) (\$)</b> |
|------------------|---|---|---------------------|-----------------------|-------------------------------------|--|
| FY 2015          | Update all electronic data collection and analysis equipment for physics labs | New computer software is needed to interface SAUK computers and programs (WORD, EXCEL, etc) with a new set of electronic probes that record and analyze experimental data.            |                     |                       | 6,000                               |  |
| FY 2015          | Update VHS tapes with CD versions of physics demonstrations                   | The current antiquated set of VHS tapes containing physics demonstrations should be replaced with CD versions of these demonstrations and others.                                     |                     |                       | 800                                 |  |
| FY 2016          | Biology – computers and physiology experiment equipment                       | Physiology experiments for BIO 108, BIO 109, BIO 110 can be conducted.  | 6                   | 4,000                 | 24,000                              |  |
| FY 2015          | Human Cadaver   | BIO 108, BIO 109 and BIO 110 use the cadaver in lab   | 1                   | 5,000                 | 5,000                               |  |
| FY 2015          | Purchase IR (infrared spectrophotometer)                                      | CHE 105, CHE 106, CHE 201, CHE 202 lab exercises  | 1                   | 12,000                | 12,000                              |  |
| FY 2015          | Stainless steel cadaver case to extend the use of the human cadaver           | BIO 108, BIO 109 and BIO 110.   | 1                   | 5,000                 | 5,000                               |  |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

→If equipment, software, and/or supplies are needed then add them to the Operational Planning matrix for the appropriate fiscal year.

**FACILITIES**

(Strategic Objective 1.6)

80. Identify current or anticipated facility improvements and/or additional facility space that will be needed within the next five years and list the anticipated fiscal year the renovations would be needed, **OR** indicate “None.”

| <b>FY Needed</b> | <b>Describe why it is necessary to conduct the renovations?</b>  | <b>Describe the renovation and what area of the building (room #) it will affect.</b> | <b>Estimated Expense (\$)<br/>(contact the Director of B&amp;G)</b> |
|------------------|--|---|---|
| FY 2016          | ADA compliance, lab consistency multifunctional use,   | Complete third floor science area lab renovations                                     | Current estimate:<br>\$3,914,500                                    |
|                  |  | Furniture (if applicable):  |   |
| FY 2014          | Echo effect in classroom and noise interference from outside the classroom interfere with classroom activities | Sound-proofing insulation on 2G10 ceiling   | Estimate: \$6,000   |
|                  |  | Furniture (if applicable):  |   |
|                  |  |   |   |
|                  |  | Furniture (if applicable):  |   |

→If facility upgrades are needed then add them to the Operational Planning matrix for the appropriate fiscal year.

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

**Additional Information**

81. Use the space below to indicate any plans not carried out from the last program review and explain why they were not carried out OR put “none”.

None

82. Describe any possible changes (not already addressed) that may be imposed on your area or the College that will negatively or positively affect the efficiency of your area and the year of expected implementation. Examples may include changes in state or federal regulations, ICCB requirements or accreditation expectations OR indicate “none.”

| Describe the “imposed change”                                   | Fiscal Year change will take affect |
|---|-------------------------------------|
| ICCB may require programs to have a maximum of 60 credit hours. | To be determined                    |
|   |                                     |

83. Referring to the question above, what strategies will the area implement to address any concerns? If no concerns, indicate “none.”

| Describe the proposed strategies to deal with the issues above  | Fiscal Year of implementation |
|---|-------------------------------|
| . If this possible change occurs, the administration, faculty, transfer coordinator will need to work together to find a solution to reduce physical and life sciences program credit hours while satisfying pre-professional requirements. | unknown                       |
|   |                               |

→**If a plan needs to be implemented to deal with the imposed changes, add it to the Operational Planning matrix.**

84. Use the space below to tell the PR committee about any program issue or concern not addressed within this program review or indicate “none”. Indicate any possible solution to the program issue/concern.

None

→**If a plan needs to be implemented to deal with the imposed changes, add it to the Operational Planning matrix.**

85. Use the space below to tell the PR committee about any program accomplishments that were not addressed within this program review or indicate “none.”

None

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

**Program Review.** Items from the program review will be entered here. *After this program review is complete and approved by the PR Committee, transfer (paste and copy) the items below to your FY 2015 Operational Plan.*

\* Origination Code: For the program review OP matrix, the origination code refers to the question number (e.g., Q 4) found on the program review. After transferring to the operational plan, use the origination code PR.

| Origination Code* | Date Activity was Added to this OP (MM/DD/YYYY) | Name(s) of Individual(s) Responsible | Description/Purpose/Justification of Proposed Activity   | Goal/Desired Result from Activity (measurable and under department's control)  | Target Completion Date for This Activity (MM/DD/YYYY) | Actual Results from this Activity | Actual Completion Date for this Activity (MM/DD/YYYY) |
|-------------------|---|--------------------------------------|--|--|---|-----------------------------------|---|
| Q47               | 12/17/2013                                      | Area leader                          | Collect data to compare persistence rates of high school students entering into BIO 109 and CHE 105 directly from high school to students completing prerequisites on campus.  | Compare persistence rates of high school students entering into BIO 109 and CHE 105 directly from high school to students completing prerequisites on campus | Spr 2015  |                                   |   |
| Q14, 56           | 12/17/2013                                      | Area leader, VP of Academics         | In the fall semester, the VP of Academics is now supplying a list of students who have indicated being in a specific program in our area. The list will be distributed to the appropriate faculty members and a general email will be sent to all of these students offering assistance. | Students who have indicated being in a specific program in our area will be contacted by full-time faculty members.  | Fall 2014   |                                   |   |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|     |            |  |   |   |           |  |  |
|-----|------------|--|---|---|-----------|--|--|
| Q64 | 12/17/2013 | Physics faculty                                    | Update all electronic data collection and analysis equipment for physics                      | Physics equipment replaced  | Spr 2015  |  |  |
| Q59 | 12/17/2013 | Area leader, full-time faculty                     | 100% participation by full-time faculty for both Gen-Ed and Area-level assessment objectives. | 100% participation by full-time faculty for both Gen-Ed and Area-level assessment objectives. | Spr 2015  |  |  |
| Q60 | 12/17/2013 | Area leader, adjunct faculty                       | Increase adjunct faculty participation in the academic assessment process.                    | 70% of adjunct faculty will participate in the academic assessment process.                   | Spr 2015  |  |  |
| Q61 | 12/17/2013 | Area leader dual credit faculty                    | Increase dual credit faculty participation in the academic assessment process.                | 70% of dual credit faculty will participate in the academic assessment process.               | Spr 2015  |  |  |
| Q64 | 12/17/2013 | Area leader, physics faculty, building and grounds | Physics: Sound-proofing on ceiling of 2G10 where physics classes are taught.                  | Sound-proofing installed on ceiling of 2G10   | Spr 2015  |  |  |
| Q64 | 12/17/2013 | Area leader, VP of Academics, physics faculty      | New full-time physics instructors needed  | Full-time physics instructor hired  | Fall 2014 |  |  |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|     |            |   |  |  |          |  |  |
|-----|------------|---|--|--|----------|--|--|
| Q79 | 12/17/2013 | Area leader, VP of Academics, Therese Wood          | Purchase IR (infrared spectrophotometer) 12,000  | IR purchased   | Spr 2015 |  |  |
| Q79 | 12/17/2013 | Area leader, VP of Academics, Therese Wood          | Purchase computers and physiology experiment equipment   | Computers and physiology equipment purchased   | Spr 2016 |  |  |
| Q79 | 12/17/2013 | Area leader, VP of Academics, Therese Wood          | Purchase human Cadaver   | Human cadaver purchased  | Spr 2015 |  |  |
| Q79 | 12/17/2013 | Area leader, VP of Academics, Therese Wood          | Purchase stainless steel cadaver case  | Stainless steel cadaver case purchased   | Spr 2015 |  |  |
| Q25 | 12/17/2013 | VP of Academics, area faculty, transfer coordinator | The number of credit hours to complete each program exceeds 65 credit hours: Biology – 70 credit hours; Chemistry – 72 credit hours; Physics 72 credit hours. ICCB may require the number of credit hours for an associate’s degree to be reduced to 60 hours. Find a solution to reduce physical and life sciences program credit hours | Find a solution to reduce physical and life sciences program credit hours while satisfying pre-professional requirements and IAI requirements. | Spr 2015 |  |  |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

|                  |            |              |   |  |           |  |  |
|------------------|------------|--------------|---|--|-----------|--|--|
|                  |            |              | while satisfying pre-professional requirements and IAI requirements.  |  |           |  |  |
| Q67              | 12/17/2013 | Area faculty | The Physical and Life Science area provides quality learning opportunities designed to address the diverse needs of today's student population. Survey physical and life science students and determine which IAI approved courses meet <b>their</b> needs. | Determine and offer IAI approved courses based on student needs. | Fall 2015 |  |  |
|                  |            |              |   |  |           |  |  |
|                  |            |              |   |  |           |  |  |
| <b>Comments:</b> |            |              |   |  |           |  |  |

**\*Use the question number (e.g., Q 4) for the origination code on the Program Review template. After the information is transferred to the actual OP, please use "PR" as the origination code.**

FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*  
ACADEMIC DISCIPLINE PROGRAM REVIEW SUMMARY REPORT

Required ICCB Program Review Report

Sauk Valley Community College (506)

Academic Year 2013 - 2014

|                              |                  |
|------------------------------|------------------|
| Academic Degree (discipline) | Biology (AS 413) |
|------------------------------|------------------|

Summary

*Objectives: What are the objectives of the course and sequences of courses (such as developmental through college-level) in the discipline? To what extent are they being achieved?*

The biology program provides quality learning opportunities designed to address the diverse needs of today's student population. The area offers courses that cover all the essential topics required for biology majors and non-biology majors who transfer to four-year institutions or other programs. All biology courses transfer and articulate thru IAI.

*Need: It is expected that there is a continuing need for courses in each of the academic disciplines, but is the array of courses offered appropriate to meet the needs of students and support academic programs?*

The number of declared biology majors is small, but the enrollment has remained consistent with no evidence of diminishing in the future. Courses in the biology program cover all the essential topics required for biology majors who transfer to four-year institutions. Course offerings provide the pre-professional course requirements for admission into professional schools and health career programs. The discipline offers courses for students who need biology courses in order to meet their general education science requirements. All core courses articulate thru IAI. Biology, chemistry, physics and math course schedules have been coordinated to prevent/minimize conflicts in scheduling. Coordinating cross-discipline schedules allows students to complete the programs within two years.

Baccalaureate biological science programs are diverse. Students are encouraged to decide the direction or specialization within the Biological Sciences major as early as possible, and are advised to complete the introductory biological sciences course sequence before transferring. Students who do not complete all the introductory courses may have to repeat a course, since material may be arranged differently by other institutions.

*Cost-effectiveness: What steps can be taken to offer courses more cost effectively? Are there needs for additional resources?*

Continue to practice methods currently being used to remain cost-effective. Schedule courses based on student need.

*Quality: Based on the results of assessment and other information about courses and sequences of courses in the discipline, what steps need to be taken to update or improve instruction? Describe any programmatic achievements already achieved or are planned for the future.*

Persistence rates are low for our introductory courses into various programs but increase dramatically in the courses that follow. Daily quizzes are now given to students in entry level

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

courses in the biology program to improve persistence rates. We plan to continue to gather data on these courses to find effective methods of increasing persistence rates of students..

*Transfer Courses: Generate a list of 1.1 transfer courses within the discipline and action taken to obtain current articulation agreements.*

|                     |                                |
|---------------------|--------------------------------|
| BIO 103             | EIU, ISU, NIU, SIUC, UIUC, WIU |
| BIO 104             | EIU, ISU, NIU, SIUC, UIUC, WIU |
| BIO 105             | EIU, ISU, NIU, SIUC, UIUC, WIU |
| BIO 105 + 123 + 131 | NIU                            |
| BIO 106             | EIU, ISU, NIU, SIUC, UIUC, WIU |
| BIO 108             | EIU, ISU, NIU, SIUC, UIUC, WIU |
| BIO 109             | EIU, ISU, NIU, SIUC, UIUC, WIU |
| BIO 109 + 110       | EIU, NIU, WIU                  |
| BIO 110             | EIU, ISU, NIU, SIUC, UIUC, WIU |
| BIO 111             | EIU, ISU, NIU, SIUC, UIUC, WIU |
| BIO 120             | EIU, ISU, NIU, SIUC, UIUC, WIU |
| BIO 123             | EIU, ISU, NIU, SIUC, UIUC, WIU |
| BIO 123 + 131       | NIU, WIU                       |
| BIO 131             | EIU, ISU, NIU, SIUC, UIUC, WIU |
| BIO 270             | EIU, ISU, NIU, SIUC, UIUC, WIU |

FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*  
ACADEMIC DISCIPLINE PROGRAM REVIEW SUMMARY REPORT

*Required ICCB Program Review Report*

Sauk Valley Community College (506)

Academic Year 2013 - 2014

|                                 |                     |
|---------------------------------|---------------------|
| Academic Degree<br>(discipline) | Chemistry (AS 414)) |
|---------------------------------|---------------------|

**Summary**

*Objectives: What are the objectives of the course and sequences of courses (such as developmental through college-level) in the discipline? To what extent are they being achieved?*

The chemistry program provides quality learning opportunities designed to address the diverse needs of today's student population. The chemistry program was built to provide an in-depth foundation of sequential coursework, preparing students who are majoring in chemistry for upper-division coursework. The chemistry area offers courses that satisfy requirements for non-chemistry majors who transfer to four-year institutions or other programs. All chemistry courses transfer and articulate thru IAI.

*Need: It is expected that there is a continuing need for courses in each of the academic disciplines, but is the array of courses offered appropriate to meet the needs of students and support academic programs?*

The number of declared chemistry majors is small, but the enrollment has remained consistent with no evidence of diminishing in the future. Courses in the chemistry program cover all the essential topics required for chemistry biology majors who transfer to four-year institutions. Course offerings provide the pre-professional course requirements for admission into professional schools and health career programs. The discipline offers courses for students who need biology courses in order to meet their general education science requirements. All core courses articulate thru IAI.

Biology, chemistry, physics and math course schedules have been coordinated to prevent/minimize conflicts in scheduling. Coordinating cross-discipline schedules allows students to complete the programs within two years.

Baccalaureate chemistry science programs are diverse. Students are encouraged to decide the direction or specialization within the chemistry major as early as possible, and are advised to complete the introductory chemistry course sequence before transferring. Students who do not complete all the introductory courses may have to repeat a course, since material may be arranged differently by other institutions.

*Cost-effectiveness: What steps can be taken to offer courses more cost effectively? Are there needs for additional resources? Continue to practice methods currently being used to remain cost-effective. Schedule courses based on student need.*

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

Quality: Based on the results of assessment and other information about courses and sequences of courses in the discipline, what steps need to be taken to update or improve instruction? Describe any programmatic achievements already achieved or are planned for the future.

Persistence rates are low for introductory courses into the chemistry program but increase dramatically in the courses that follow. Daily quizzes are now given to students in entry level courses in the chemistry program to improve persistence rates. We plan to continue to gather data on this course to find effective methods of improving persistence rates of students.

Transfer Courses: Generate a list of 1.1 transfer courses within the discipline and action taken to obtain current articulation agreements.

|               |                                |
|---------------|--------------------------------|
| CHE 101       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| CHE 102       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| CHE 103       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| CHE 105       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| CHE 105 + 106 | UIUC                           |
| CHE 106       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| CHE 109       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| CHE 110       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| CHE 201       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| CHE 202       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| CHE 201 + 202 | UIUC                           |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***  
**ACADEMIC DISCIPLINE PROGRAM REVIEW SUMMARY REPORT**

***Required ICCB Program Review Report***

**Sauk Valley Community College (506)**

**Academic Year 2013 - 2014**

|   |                  |
|---|------------------|
| <b>Academic Degree<br/>(discipline)</b> | Physics (AS 417) |
|---|------------------|

**Summary**

*Objectives: What are the objectives of the course and sequences of courses (such as developmental through college-level) in the discipline? To what extent are they being achieved?*

The physics program provides an in-depth foundation of sequential coursework in science and math, preparing students for upper-division coursework. The discipline offers courses for students who need physics courses in order to meet their general education science requirements. All core courses articulate thru IAI.

Objectives of Physics 201 are to prepare students with the necessary mathematical and problem-solving skills to be successful in either the Engineering Physics I (Physics 211) course (for physics and engineering majors) or the Physics 202 course (for pre-professional studies)

Physics 211 objective is to prepare students with sufficient mathematical and problem-solving skills to succeed in Physics 212, Engineering Physics II.

Physics 212 objective is to prepare students with sufficient mathematical and problem-solving skills to succeed in Physics 213, Engineering Physics III.

Students who complete prerequisite physics courses have a high success rate in subsequent physics classes

Biology, chemistry, physics and math course schedules have been coordinated to prevent/minimize conflicts in scheduling. Coordinating cross-discipline schedules allows students to complete the programs within two years. Also, selected physics courses are offered on Friday, a day when other college courses are not scheduled.

*Need: It is expected that there is a continuing need for courses in each of the academic disciplines, but is the array of courses offered appropriate to meet the needs of students and support academic programs?*

The number of declared physics majors is small, but the enrollment has remained consistent with no evidence of diminishing in the future. Courses in the physics program provide an in-depth foundation of sequential coursework in science and math, preparing students for upper-division coursework. Course offerings provide the pre-professional course requirements for admission into professional schools and health career programs. The discipline offers courses for students who

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

need physics courses in order to meet their general education science requirements. All core courses articulate thru IAI.

Biology, chemistry, physics and math course schedules have been coordinated to prevent/minimize conflicts in scheduling. Coordinating cross-discipline schedules allows students to complete the programs within two years.

Baccalaureate physics programs are diverse. Multiple tracks are often available. For example, some institutions offer a specialty in applied physics or certification for high school teaching. Students are encouraged to decide the direction or specialization within the physics major as early as possible, and are advised to complete the physics course sequence before transferring.

*Cost-effectiveness: What steps can be taken to offer courses more cost effectively? Are there needs for additional resources?*

Continue to practice methods currently being used to remain cost-effective. Schedule courses based on student need.

*Quality: Based on the results of assessment and other information about courses and sequences of courses in the discipline, what steps need to be taken to update or improve instruction? Describe any programmatic achievements already achieved or are planned for the future.*

Physics: new labs have been added to all physics classes to increase their relevance to lecture course material; simulation software was used in classroom activities for concepts which are difficult to demonstrate in our classroom; teamwork group activities are given each class period on concepts introduced in the previous class.

*Transfer Courses: Generate a list of 1.1 transfer courses within the discipline and action taken to obtain current articulation agreements.*

|               |                                |
|---------------|--------------------------------|
| PHY 175       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 201       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 202       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 210       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 211       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 212       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 212 + 213 | UIUC                           |
| PHY 213       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 221       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 221 + 222 | NIU, SIUC                      |
| PHY 246       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 247       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 246 + 247 | SIUC, WIU                      |
| PHY 270       | EIU, ISU, NIU, SIUC, UIUC      |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***  
**ACADEMIC DISCIPLINE PROGRAM REVIEW SUMMARY REPORT**

***Required ICCB Program Review Report***

**Sauk Valley Community College (506)**

**Academic Year 2013 - 2014**

|                                     |                      |
|-------------------------------------|----------------------|
| <b>Academic Degree (discipline)</b> | Engineering (AS 320) |
|-------------------------------------|----------------------|

**Summary**

*Objectives: What are the objectives of the course and sequences of courses (such as developmental through college-level) in the discipline? To what extent are they being achieved?*

Engineering programs are highly structured to meet the Accreditation Board for Engineering and Technology (A.B.E.T.) standards required for registration as a professional engineer. The engineering program provides an in-depth foundation of sequential coursework in science and math, preparing students for upper-division coursework. All core courses articulate thru IAI.

Objectives of Physics 201 are to prepare students with the necessary mathematical and problem-solving skills to be successful in either the Engineering Physics I (Physics 211) course (for physics and engineering majors) or the Physics 202 course (for pre-professional studies)

Physics 211 objective is to prepare students with sufficient mathematical and problem-solving skills to succeed in Physics 212, Engineering Physics II.

Physics 212 objective is to prepare students with sufficient mathematical and problem-solving skills to succeed in Physics 213, Engineering Physics III.

Students who complete prerequisite physics courses have a high success rate in subsequent physics classes

Biology, chemistry, physics and math course schedules have been coordinated to prevent/minimize conflicts in scheduling for the engineering program. Coordinating cross-discipline schedules allows students to complete the programs within two years.

*Need: It is expected that there is a continuing need for courses in each of the academic disciplines, but is the array of courses offered appropriate to meet the needs of students and support academic programs?* The number of declared engineering majors is small, but the enrollment has remained consistent with no evidence of diminishing in the future. Courses in the engineering program provide an in-depth foundation of sequential coursework in science and math, preparing students for upper-division coursework. All core courses articulate thru IAI.

Biology, chemistry, physics and math course schedules have been coordinated to prevent/minimize conflicts in scheduling in the engineering program. Coordinating cross-discipline schedules allows students to complete the programs within two years.

## FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences*

Baccalaureate engineering programs are diverse. Multiple tracks are often available. Students are encouraged to decide the direction or specialization within the engineering major as early as possible, and are advised to complete the introductory engineering sciences course sequence before transferring

*Cost-effectiveness: What steps can be taken to offer courses more cost effectively? Are there needs for additional resources?* Continue to practice methods currently being used to remain cost-effective. Schedule courses based on student need.

*Quality: Based on the results of assessment and other information about courses and sequences of courses in the discipline, what steps need to be taken to update or improve instruction? Describe any programmatic achievements already achieved or are planned for the future.*

New labs have been added to all physics classes for the engineering program to increase their relevance to lecture course material; simulation software was used in classroom activities for concepts which are difficult to demonstrate in our classroom; teamwork group activities are given each class period on concepts introduced in the previous class.

*Transfer Courses: Generate a list of 1.1 transfer courses within the discipline and action taken to obtain current articulation agreements.*

|               |                                |
|---------------|--------------------------------|
| PHY 211       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 212       | EIU, ISU, NIU, SIUC, UIUC, WIU |
| PHY 212 + 213 | UIUC                           |
| PHY 213       | EIU, ISU, NIU, SIUC, UIUC, WIU |



**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

| <b>PROGRAM REVIEW COMMITTEE RECOMMENDATION</b>   |  |
|--|--|
| This Program Review is complete and the conclusions are fully substantiated. Separate comments <u>may</u> be attached.   |  |
| This Program Review is complete but the Program Review Committee does <u>not</u> believe that all of the conclusions are fully substantiated. Separate comments <u>are</u> attached. |  |
| This Program Review is incomplete and unacceptable. Separate comments <u>are</u> attached.   |  |
| Program Review Committee Co-Chair<br>(signature and date)  |  |
| Program Review Committee Co-Chair<br>(signature and date)  |  |

| <b>VICE-PRESIDENT'S RECOMMENDATION</b>   |  |
|--|--|
| This Program Review is complete and the conclusions are fully substantiated. Separate comments <u>may</u> be attached.   |  |
| This Program Review is complete, but the Academic Vice-President does <u>not</u> believe that all of the conclusions are fully substantiated. Separate comments <u>are</u> attached. |  |
| This Program Review is incomplete and unacceptable. Separate comments <u>are</u> attached.   |  |
| Academic Vice-President<br>(signature and date)  |  |

| <b>PRESIDENT'S RECOMMENDATION</b>   |  |
|---|--|
| This Program Review is complete and the conclusions are fully substantiated. Separate comments <u>may</u> be attached.  |  |
| This Program Review is complete and acceptable, but the President does <u>not</u> believe that all of the conclusions are fully substantiated. Separate comments <u>are</u> attached. |  |
| This Program Review is incomplete and unacceptable. Separate comments <u>are</u> attached.  |  |
| President<br>(signature and date)   |  |

**FY 2014 Gen Ed. Academic Program Review: *Physical and Life Sciences***

**Program Review Committee  
and  
Administrative Comments (optional)**

|             |  |
|-------------|--|
| <b>Name</b> |  |
|-------------|--|

|                 |
|-----------------|
| <b>Comments</b> |
|                 |



|             |  |
|-------------|--|
| <b>Name</b> |  |
|-------------|--|

|                 |
|-----------------|
| <b>Comments</b> |
|                 |



|             |  |
|-------------|--|
| <b>Name</b> |  |
|-------------|--|

|                 |
|-----------------|
| <b>Comments</b> |
|                 |