

Los Angeles Southwest College

Program Review

2010

Program: Biological Sciences

Initiator: Todd J. Roberts and Glenn Yoshida

Reviewer 1: Leonard Apenahier

Reviewer 2: Angela C. Jenks

Date first draft of review was completed by initiator: 10/15/10

Instructions:

- Please answer all relevant areas as thoroughly as possible. Click on hyperlinks (indicated with an underline) to access additional information and instructions.
- **IF A PARTICULAR MODULE OR QUESTION DOES NOT APPLY, PLEASE INDICATE BY WRITING IN LARGE CAPITAL LETTERS: "NA"**
- The initiator should collaborate with as many department/program members as possible while completing the review.
- Reviewers should give as much feedback as necessary.

WE THE UNDERSIGNED CERTIFY WE HAVE READ THIS PROGRAM REVIEW AND ACCEPT IT AS ADEQUATE AND COMPLETE.

Department Chair

Date

Dean

Date

Vice-President

Date

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Overview of Program Mission

Describe the program's mission as it relates to the [college's mission](#).

We are committed to preparing students for academic excellence in the fields of biology, chemistry, and allied health.

Module One: Enrollment Trends

Enrollment

	2007-2008	2008-2009	2009-2010
Day	827	1,054	1,256
Evening	457	476	569
Total	1,284	1,530	1,825

Average Class Size

	2007-2008	2008-2009	2009-2010
Day	30.6	32.9	40.5
Evening	45.7	47.6	56.9
Total	34.7	36.4	44.5

1.0 Describe the trends in **enrollment and average class size**.

Enrollment has increased, primarily during the day. Evening enrollment has remained somewhat steady. However, average class size for the evening session has increased. This increase in average class size while a steady enrollment may be explained by a decrease in section offerings.

1.1 Given the data, what are the implications of these trends for your program? What must be done differently or kept the same given these trends?

Section offerings should increase with student demand.

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Objective for Module One

Write an objective, if applicable, to address the identified trends. Objectives should be linked to the LASC [Strategic Planning Goals](#).

Objective	Maintain current course offerings and increase by 5%.
Planned Activities	Increase course offerings
Individual Responsible	VP Academic affairs
Start Date	Sp 11
Method of Evaluation	Measure if an increase of student population leads to an increase in average class size.

Module Two: Demographics and Student Success

Ethnicity

Ethnicity (%)	2007-2008	2008-2009	2009-2010
Asian	4.0%	5.0%	6.6%
Black/African American	70.3%	62.5%	63.8%
Hispanic	17.2%	14.6%	19.2%
Native American	0.0%	0.2%	0.4%
Pacific Islander	0.2%	0.2%	0.5%
Caucasian/White	1.6%	1.0%	2.5%
Other	1.9%	2.0%	0.5%
Unknown/Decline To State	4.8%	14.4%	6.4%

2.0 Given the data, describe the trend in **ethnicity**. What are the implications for your program?

The Asian population increased over 07-10. The Black population decreased from 08-09 and remained constant from 09-10. Similarly, the Latino population decreased from 08-09 but increased from 09-10. The Native American population remained constant. The Pacific Islander population remained the same. The Caucasian population held steady. During 08-09, the Decline to State population increased and returned to 08 levels in 10. Levels are much the same. The program should remain ethnically sensitive and strive for inclusiveness.

Age

Age Group	2007-2008	2008-2009	2009-2010
19 and under	13.6%	9.5%	15.8%
20-24	25.9%	27.6%	27.7%
25-29	21.0%	20.7%	20.1%
30-34	12.7%	13.7%	11.6%
35-39	11.0%	11.6%	8.8%
40-49	12.8%	12.7%	12.1%
50+	3.1%	4.2%	3.9%

Gender

Gender	2007-2008	2008-2009	2009-2010
Female	80.2%	79.5%	78.1%
Male	19.8%	20.5%	21.9%

- 2.1 Given the data, describe the trends in **age and gender**. To what do you attribute the age and gender patterns?

There are not strong changes in age and gender.
The population attending the institution is remaining steady.

Retention

To access retention data according to ethnicity, gender, or age group, click [here](#).

	2007-2008	2008-2009	2009-2010
% Day	74.0%	79.6%	78.9%
% Evening	80.7%	85.1%	82.4%
% Total	76.4%	81.3%	80.0%

- 2.2 Given the data, describe the trend in **retention** that can be identified. What are the implications for your program?

Retention showed a slight increase during both day and evening, increasing in total by 3.6%.
If retention rates are able to increase, this implies possible opportunities for student success.

Success Rates

To access success rate data according to ethnicity, gender, or age group, click [here](#).

	2007-2008	2008-2009	2009-2010
% Day	57.0%	57.1%	57.5%
% Evening	53.6%	60.3%	59.8%
% Total	55.8%	58.1%	58.2%

- 2.3 Given the data, describe the trend in **successful course completion** rates.

Success rates increased overall slightly, due primarily to the increase in evening success.

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2.3.1 To what do you attribute this trend in successful course completion? Include any observations from the classroom, school, or community environments.

A downturn in the economy has increased the necessity for further academic preparation for job promotion and/or transfer.

2.3.2 What are the implications of this trend in successful course completion for your program?

Our numbers may continue to increase. Our students will be prepared accordingly.

Degrees and Certificates Awarded

	2007-2008	2008-2009	2009-2010
Degrees	0	0	36
Certificates	0	0	0
Skills Certificates	0	0	0

2.4 Given the data, describe the trend in **degrees and certificates** awarded.

N/A

2.4.1 To what do you attribute this trend in degrees and certificates awarded? Include any observations from the classroom, school, or community environments.

N/A

2.4.2 What are the implications of this trend in degrees and certificates awarded for your program?

N/A

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Objective for Module Two

Write an objective, if applicable, to address the identified trends. Objectives should be linked to the LASC [Strategic Planning Goals](#).

Objective	Improve course completion
Planned Activities	Increase in tutorial services Increase counseling services
Individual Responsible	Academic Success Center
Start Date	F 11
Method of Evaluation	Success rates

Module Three: Program Resources

- 3.0 Discuss any needs in facilities, equipment, and/or supplies to support program goals. If requesting additional support, develop an objective.

A science learning lab is slated during the LL remodel. However, currently additional supplies and equipment are requested to keep pace with the increase in student enrollment. Additional Full-Time Faculty is requested to support the increased demand in the discipline student enrollment and to improve WSCH/FTEF.

WSCH per FTEF

Disciplines	2007	2008	2009
Anatomy	632	632	724
Biology	542	492	683
Microbiology	611	588	668
Physiology	680	601	820

- 3.1 Given the data, describe the trend in [WSCH per FTEF](#).

WSCH/FTEF dipped from 07-08 (Anatomy excluded) and increased from 07-10.

- 3.1.1 Describe how this trend will impact your program. Does the program make effective use of its personnel? Include any need for increasing or reducing your program faculty.

Data may indicate an increase in class size and decrease in class sections. This may impact success and retention in the long run. However, the data supports this when looking at retention and success rates from 07-08 but from 08-10 the success and retention rates were maintained.

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3.2 List each faculty member in your program. Mark all professional development activities engaged in by each faculty member in your program since Fall 2005. (To add additional rows: Hit “Tab” at the end of the last row to add an additional blank row. Select the text and check boxes from the row above and press “Edit-Copy.” Click on the blank row and press “Edit-Paste”.)

Name	Activities (Mark all that apply)	Comments (Optional)
Glenn Yoshida Professor Department chair	<input checked="" type="checkbox"/> Conferences <input checked="" type="checkbox"/> Off-Campus Presentations <input type="checkbox"/> Publications <input type="checkbox"/> Grants <input checked="" type="checkbox"/> On-Campus Presentations <input type="checkbox"/> Other	Glenn Yoshida is diligent in keeping current in discipline by attending conferences. He is active on campus and contributes greatly to our department and to our college.
Dr. Todd Roberts, Ph.D. Professor	<input type="checkbox"/> Conferences <input checked="" type="checkbox"/> Off-Campus Presentations <input type="checkbox"/> Publications <input type="checkbox"/> Grants <input type="checkbox"/> On-Campus Presentations <input type="checkbox"/> Other	Todd Roberts participates in many college activities. He is a member of several committees and assumes more than his share of faculty responsibilities, including VP of Academic Senate.
Kang Kim Associate Professor	<input type="checkbox"/> Conferences <input type="checkbox"/> Off-Campus Presentations <input type="checkbox"/> Publications <input type="checkbox"/> Grants <input checked="" type="checkbox"/> On-Campus Presentations <input type="checkbox"/> Other	Kang Kim has been active in faculty committees and has annually put on a DNA workshop which students learn techniques in genetic engineering.
Dr. Anita Walker, Ph.D. Associate Professor	<input type="checkbox"/> Conferences <input type="checkbox"/> Off-Campus Presentations <input type="checkbox"/> Publications <input type="checkbox"/> Grants <input type="checkbox"/> On-Campus Presentations <input checked="" type="checkbox"/> Other	Anita Walker set up a demonstration table at a campus health fair and was volunteered to help in the program review.
Hassan Elfarissi Adjunct biology science instructor	<input type="checkbox"/> Conferences <input type="checkbox"/> Off-Campus Presentations <input type="checkbox"/> Publications <input type="checkbox"/> Grants <input type="checkbox"/> On-Campus Presentations <input checked="" type="checkbox"/> Other	Hassan Elfarissi is also our head lab technician. He has taught several different classes in our department and he has received high student ratings. He is enrolled at Cerro Coso college for on line teaching certificate.
Rafael Romero Part time Anatomy instructor	<input checked="" type="checkbox"/> Conferences <input type="checkbox"/> Off-Campus Presentations <input checked="" type="checkbox"/> Publications <input type="checkbox"/> Grants <input type="checkbox"/> On-Campus Presentations <input type="checkbox"/> Other	Rafael Romero has attended several conferences and has published several articles.

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Objective for Module Three

Write an objective, if applicable, to address the identified trends. Objectives should be linked to the LASC [Strategic Planning Goals](#).

Objective	By maintaining WSH/FTES this will improve individual student/professor contact and increase persistence. The increase in persistence will aid to increase FTES.
Planned Activities	Alternative teaching methods and discussion Improve technological understanding
Individual Responsible	Staff development committee.
Start Date	Sp 12
Method of Evaluation	WSH/FTES data

Module Four: Educational Programs

4.0 Identify all program courses listed in the [catalog](#) that are due to be updated (i.e., course outlines were last updated in 2006 or earlier). Describe plans for updating these outlines. Click [here](#) to access the most recent course outline summary that lists LASC courses and their update status. (To add additional rows: Hit “Tab” at the end of the last row to add an additional blank row. Select the boxes from the row above and press “Edit-Copy.” Click on the blank row and press “Edit-Paste”.)

Outdated Course	Last Updated	Plan for Updating	Update completion deadline
<i>Course outlines current</i>			

4.1 For courses that have not been offered in over three years, identify your plans for the upcoming year. Provide justification or extenuating circumstances to keep these inactive courses listed. (**Note:** All course changes, additions, and removals must be approved by the Curriculum Committee.) Click [here](#) for a list of courses that have not been offered since Fall 2007. (To add additional rows: Hit “Tab” at the end of the last row to add an additional blank row. Select the text and check boxes from the row above and press “Edit-Copy.” Click on the blank row and press “Edit-Paste”.)

Inactive Course	Action	Comments
Biology 185	<input type="checkbox"/> Recommend Archive <input type="checkbox"/> Remain listed <input checked="" type="checkbox"/> Other (please detail):	Course has been archived

4.2 Enter new courses that are planned. (**Note:** All course changes, additions, and removals must be approved by the Curriculum Committee.) (To add additional rows: Hit “Tab” at the end of the last row to add an additional blank row. Select the text and check boxes from the row above and press “Edit-Copy.” Click on the blank row and press “Edit-Paste”.)

New Course	Justification (check all that apply)
	<input type="checkbox"/> Advisory committee

	<input type="checkbox"/> Prerequisites <input type="checkbox"/> Integration of technology <input type="checkbox"/> Similar CSU/UC lower division requirements <input type="checkbox"/> Course needed for sequence <input type="checkbox"/> Integrating current trends and new information <input type="checkbox"/> Other (please detail):
	<input type="checkbox"/> Advisory committee <input type="checkbox"/> Prerequisites <input type="checkbox"/> Integration of technology <input type="checkbox"/> Similar CSU/UC lower division requirements <input type="checkbox"/> Course needed for sequence <input type="checkbox"/> Integrating current trends and new information <input type="checkbox"/> Other (please detail):

4.3 Vocational Programs (if applicable; if not, skip to Objective for Module Four)

4.3.1 How does your program meet **labor market demand**? Cite specific examples and sources.

4.3.2 Do your program have an **advisory board**? How often does your advisory board meet? When was the last meeting? List outcome(s) of your advisory board meetings.

4.3.3 What **employment data** do you have that demonstrates the effectiveness of your program?

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Objective for Module Four

Write an objective, if applicable, to address the identified trends. Objectives should be linked to the LASC [Strategic Planning Goals](#).

Objective	Increase course sections and offerings
Planned Activities	Departmental meetings Staff development activities
Individual Responsible	Departmental faculty
Start Date	Sp 11
Method of Evaluation	Data analysis of student and market demands

Module Five: Student Learning Outcomes (SLOs)

- 5.0 Identify 2-5 **student learning outcomes** for each of the **degree programs** you offer and provide an **assessment strategy** for each outcome. In the following chart,
- Indicate the assessment strategy and when assessment will occur (Fall 2010/Spring 2011)
 - If any of your program SLOs were already assessed, include analysis of assessment results and plans for improvement of teaching and learning. Include overall results from program faculty dialogue (attach minutes from meetings as evidence of this dialog).
 - If applicable, indicate which Institutional SLO (#1-5) the program SLO is linked to.
 - Click on underlined column headings to access additional information and instructions.

Click [here](#) for a link to all of the degree/certificate programs that should have at least 2 SLOs.

If your program offers more than one degree, you will need to expand this chart to identify SLOs for each one. To do so, select the entire chart and press “Edit-Copy.” Click in the blank space below the original chart and press “Edit-Paste.”

PROGRAM TITLE:				
AA DEGREE IN BIOLOGY				
<u>Program SLO</u>	<u>Target Courses To Be Assessed</u>	<u>Assessment Strategy & Timing</u>	<u>Results and Plans for Improvement (if applicable)</u>	<u>Related Institutional SLO (mark all that apply)</u>
<i>Example:</i> <u>Chemistry</u> 1. Students will correctly solve problems (90%) using English/Metric conversions involving concentrations, gases, acid/base with at least 70% accuracy.	Chemistry 102, 212, 51	Embedded assessment in final exam. <input checked="" type="checkbox"/> Fall 2010 <input type="checkbox"/> Spring 2011	[insert sample results and plans]	<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
1. Students will apply the scientific method to solve a problem.	Biology 3, 7, Chemistry 102, Physics 7	Embedded assessment in final exam. <input type="checkbox"/> Fall 2010 <input checked="" type="checkbox"/> Spring 2011		<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
2. Students will solve problems utilizing the major concepts in cell biology and the experimental approaches taken to address them.	Biology 6	Embedded assessment in final exam and lab practicum. <input checked="" type="checkbox"/> Fall 2010 <input type="checkbox"/> Spring 2011		<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

		<input type="checkbox"/> Fall 2010 <input type="checkbox"/> Spring 2011		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
		<input type="checkbox"/> Fall 2010 <input type="checkbox"/> Spring 2011		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
PROGRAM TITLE: AA DEGREE IN LIBERAL ARTS: NATURAL SCIENCES				
<u>Program SLO</u>	<u>Target Courses To Be Assessed</u>	<u>Assessment Strategy & Timing</u>	<u>Results and Plans for Improvement (if applicable)</u>	<u>Related Institutional SLO (mark all that apply)</u>
<i>Example:</i> <u>Chemistry</u> 1. Students will correctly solve problems (90%) using English/Metric conversions involving concentrations, gases, acid/base with at least 70% accuracy.	Chemistry 102, 212, 51	Embedded assessment in final exam. <input checked="" type="checkbox"/> Fall 2010 <input type="checkbox"/> Spring 2011	[insert sample results and plans]	<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
1. Students will apply the scientific method to solve a problem.	Anatomy 1, Biology 3, Microbiology 1, Physiology 1	Embedded assessment in final exam. <input type="checkbox"/> Fall 2010 <input checked="" type="checkbox"/> Spring 2011		<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
2. Students will comprehend and evaluate content relating to human body structure, function, and disease.	Anatomy 1, Physiology 1, Biology 20, Microbiology 1	70% of the students in these courses will successfully respond to three to five written questions (or question sets) embedded in the final exams. <input type="checkbox"/> Fall 2010 <input checked="" type="checkbox"/> Spring 2011		<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

5.1 List each course in your program as well as each course’s SLOs according to the most recent course outline of record. (Click [here](#) to access a master list of all courses and recorded SLOs.) Indicate whether the course SLO ties directly to a program SLO. Indicate whether the course SLO ties directly to an institutional SLO.

If the course ties in to multiple degree programs with separate SLOs, use the text box to describe the relationship between the course SLO, program SLOs, and Institutional SLOs.

To add additional rows for more courses: Hit “Tab” at the end of the last row to add an additional blank row. Select the text and check boxes from the rows above (for the course, three SLOs and check boxes) and press “Edit-Copy.” Click on the blank row and press “Edit-Paste”.

Course Name, Number, and SLOs		<u>Related Program SLO (mark all that apply)</u>	<u>Related Institutional SLO (mark all that apply)</u>
Example: Course name: Chemistry 51	SLO 1: demonstrate proficiency in performing conversions within the metric or English systems, or between the English and metric systems. (70% meets expectation)	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	SLO 2: demonstrate proficiency in naming a compound given its chemical formula or vice versa (70% meets expectation)	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Anatomy 1	LAB SLO's: 1) Given a set of disarticulated human bones, at least 70% of the students should be able to identify specific bones and their bony markings on a practicum (at least 70% proficiency).	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3 AA Liberal Arts (Natural Sciences)	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	2) Given a model, picture, dissected cat, or human subject, identify specific muscles, joints, and their origins/insertions on a practicum (70% of students with at least 70% proficiency).	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3 AA Liberal Arts (Natural Sciences)	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	3) Given a photograph or microscope slide, 70% of students will identify major tissue types and recall their location in the body with 70% proficiency or better.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3 AA Liberal Arts (Natural Sciences)	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	LECTURE SLO'S: 1) The student will be able to differentiate and use the appropriate	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3

	anatomical directional terms to describe parts of the human anatomy. (70% of students with at least 70% proficiency).		
	2) Apply the standards of the scientific method to analyze and interpret published findings about current human anatomy topics. (70% of students with at least 70% proficiency)	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Biology 3	LECTURE: 1. correctly apply the scientific method to solve a problem.	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	2. differentiate between cell organelles and functions.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3 AA Degree (Biology)	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	LAB 3. given the results of a DNA fingerprint from gel electrophoresis, correctly identify the "suspect" and provide appropriate rationale.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3 AA Degree (Biology)	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Biology 5		<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Biology 6	LECTURE: 1. Using principles of Mendelian Genetics, students will determine phenotypic and genotypic ratios from monohybrid and dihybrid crosses.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	LAB: 2. Using a spectrophotometer, determine the absorption spectra of light by chlorophyll.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Biology 7	1. During a visit to the LA Zoo, students will observe at least 5 animals and accurately (at least 80%) report their specific behaviors and adaptations to their environment.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Biology 9	.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3

Biology 20	(LECTURE) 1) Given a human case study incorporating arterial blood gas (ABG) data, the student will analyze the situation and determine type of acidosis or alkalosis and any compensatory actions by lungs or kidneys.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3 AA Liberal Arts (Natural Sciences)	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	(LAB) 1) Given a set of disarticulated human bones, at least 70% of the students should be able to identify specific bones and their bony markings on a practicum (at least 70% proficiency). 2) Given a model, picture, dissected cat, or human subject, identify specific muscles, joints, and their origins/insertions on a practicum (70% of students with at least 70% proficiency). 3) Given a photograph or microscope slide, 70% of students will identify major tissue types and recall their location in the body with 70% proficiency or better.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3 AA Liberal Arts (Natural Sciences)	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Biology 33	1. Students will translate and interpret the meanings of medical terms in patient reports, discharge summaries, patient history, or consultation reports.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Biology 40		<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Biology 285	1. Increase test scores and assignments in Biology by 10% or more. 2. Assess improvement of academic skills and comprehension in the Biological Sciences.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Micro biology 1	Lecture SLO's: 1. 70% of students will be able to identify and describe the major structures of microorganisms and relate these structures to their functions at 70% proficiency.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	2. 70% of students will be able to relate and understand the link between microorganisms and disease at 70% proficiency.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3 AA Liberal Arts	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3

		(Natural Sciences)	
	3. Apply the standards of the scientific method to analyze and interpret published findings about microbial diseases. (70% of students with at least 70% proficiency)	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3 AA Liberal Arts (Natural Sciences)	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	Lab SLO's: 1. Given two unknown species of bacteria, 70% of the students will correctly identify them in the lab while utilizing proper lab techniques based upon morphological, biochemical, and serological results.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	2. 85% of students will demonstrate efficiency in using proper aseptic techniques while handling microorganisms and streaking a plate for isolation .	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Physiology 1	1. correctly apply the scientific method to solve a problem.	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	(LAB) 2. Describe the importance of organ interrelatedness and the relationship to laboratory skills and theoretical advancement.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
Physiology 285	1. Increase test scores and assignments in Biology by 10% or more.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3
	2. Assess improvement of academic skills and comprehension in Physiology.	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 4 <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 3

5.2 Identify 2-5 Student learning Outcomes for any **certificate programs** within your area. In the following chart,

- List the certificate program, SLOs, and target courses.
- Indicate the assessment strategy and when the assessment will occur (**Fall 2010 or Spring 2011**).

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- If any of your program SLOs were already assessed, include analysis of assessment results and plans for improvement of teaching and learning. Include overall results from program faculty dialogue (attach minutes from meeting as evidence).
- If applicable, indicate which Institutional SLO (#1-5) the program SLO is linked to.

If your program offers more than one certificate, you will need to expand this chart to identify SLOs for each one. To do so, select the entire chart and press “Edit-Copy.” Click in the blank space below the original chart and press “Edit-Paste.”

Certificate Program and SLO	Target Courses	Assessment Strategy & Timing	Results and Plans for Improvement (if applicable)	Related Institutional SLO (mark all that apply)
Name of Certificate Program: None				
SLO 1:		<input type="checkbox"/> Fall 2010 <input type="checkbox"/> Spring 2011		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
SLO 2:		<input type="checkbox"/> Fall 2010 <input type="checkbox"/> Spring 2011		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
SLO 3:		<input type="checkbox"/> Fall 2010 <input type="checkbox"/> Spring 2011		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
SLO 4:		<input type="checkbox"/> Fall 2010 <input type="checkbox"/> Spring 2011		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
SLO 5:		<input type="checkbox"/> Fall 2010 <input type="checkbox"/> Spring 2011		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

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5.3 How are course and/or program student learning outcomes communicated to students?

Course SLOs are included in course syllabi and discussed with students during first day of class. Program SLOs will be included in the college catalog and on the college's SLO website.

5.3.1 How do you measure whether students understand what the outcomes mean?

The department will consider administering a pre/post student survey on SLOs to determine level of understanding.

5.3.2 If applicable, how can students self-assess using rubrics, etc. in relation to the SLOs.

Rubrics will be used to evaluate lab reports, etc. and will be available for students to self-assess prior to submission of the student work.

5.4 How will the results of assessment be used for planning and decision-making? How were the results discussed both internal and external to your program? Did students participate in the reviews of outcomes, criteria, curriculum design, or related activities? If so, describe.

Results will be discussed in next year's program review update. The majority of the assessment will take place during the next two semesters.

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Objective for Module Five

Write an objective, if applicable, to address future plans to develop, assess, and/or improve Student Learning Outcomes. List any objectives resulting from SLO assessment analysis.

Objective	Integrate and implement SLO's across the curriculum
Planned Activities	SLO evaluation workshops
Individual Responsible	Departmental faculty
Start Date	Sp' 11
Method of Evaluation	Assessment of SLO implementation

Module Six: Student Feedback

6.0 Data collection *N/A. Data will be collected.*

6.0.1 How many surveys were collected from students?

6.0.2 How many students participated in focus groups?

6.0.3 How many students participated in interviews?

6.0.4 How many students participated in other activities in which students provided feedback to your program? Describe these activities.

6.1 Describe the results of the data accumulated in the above methods.

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Objective for Module Six

Write an objective, if applicable, to address student feedback and concerns. Objectives should be linked to the LASC [Strategic Planning Goals](#).

Objective	Develop a student feedback survey
Planned Activities	Solicit suggestions from students, faculty and staff
Individual Responsible	Institutional Research and Departmental Faculty
Start Date	F 11
Method of Evaluation	Collection and evaluation of survey data

Module Seven: SWOC

Based on your program review, summarize:

Program Strengths

Student enrollment has grown. This is good indication of a growing department. The department has a good mix of faculty who interact well to ensure student and faculty success. The Department Head encourages and fosters forward thinking ideas and attitudes, which facilitates growth and development. The department welcomes adjunct instructors by providing active mentoring, which makes for a pleasant working environment for teachers and students alike. This ensures adequate preparation for students' success in the allied health professions as well as when students transfer to colleges and universities.

Program Weaknesses

The department lacks adequate tutoring and supplies to meet student demand. Laboratory experiments lack supplies and available models.

Program Opportunities

Increasing student success is interdependent on faculty remaining current with the current technology and offering students the latest in science pedagogy. We should strive to encourage academic and personal development. Student numbers are increasing. This is our opportunity to encourage further academic achievement.

Program Challenges

The department's goal is to grow while maintaining proper and needed *student-teacher* interaction. With science classes requiring a laboratory this creates a dilemma with regards to increased class size as it relates to WSH/FTE. Although, the target class size is 34, this class size would severely prohibit science students from receiving the proper attention, effectively lowering student success rates. The college must realize that science classes with a laboratory must be kept small to maximize attrition. Moreover, it is imperative to institute needed pre-requisites for many of the classes, this will temporarily decrease the class size, but the long-term results are sure to prove promising. The rewards will be a student population with the skills necessary to perform well in the advanced science classes. Therefore, our challenge as a department is to grow in style and grace, not losing sight of the primary reason for the institution itself, the student. Further, we must continue to be innovative and not afraid to try and fail with different teaching modalities.

Module Eight: Objectives from 2008-2009 Mini-Review

8.0 List each of the objectives from your program’s 2008-2009 mini-review. (Click [here](#) to access the objectives from the mini-reviews.) Indicate the current status and outcome of each objective. (To add additional rows: Hit “Tab” at the end of the last row to add an additional blank row. Select the text and check boxes from the row above and press “Edit-Copy.” Click on the blank row and press “Edit-Paste”.)

Objective	Status Completed = C In Progress = IP Not Implemented = NI	Outcome If “C” evaluate the result If “IP” evaluate the status and plans for continuation of the objective If “NI” state whether the objective will be pushed to the next year or dropped entirely and the rationale behind the decision
Review class size limits and secure additional facilities (office, lab, etc.)	<input checked="" type="checkbox"/> Completed <input type="checkbox"/> In Progress <input type="checkbox"/> Not Implemented	Results are being incorporated into the LL remodel
Electronically enforce all validated prerequisites	<input type="checkbox"/> Completed <input type="checkbox"/> In Progress <input checked="" type="checkbox"/> Not Implemented	Objective is still ongoing. A system is being developed to correctly address students who wish to challenge the prerequisites
Hire more faculty (1 F/T Tenure-Track)	<input type="checkbox"/> Completed <input type="checkbox"/> In Progress <input checked="" type="checkbox"/> Not Implemented	Budget constraints have limited the ability to fully hire within the department
Create a new biology class for non-transfer students aiming at an AA degree, while maintaining existing classes	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> In Progress <input type="checkbox"/> Not Implemented	An advisory board has been established and program data is being obtained

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Recommend proficiency in English and Math	<input type="checkbox"/> Completed <input checked="" type="checkbox"/> In Progress <input type="checkbox"/> Not Implemented	Coordination with the English and Math departments is ongoing
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Module Nine: 2010 Program Review Objectives

9.0 Rank and list all objectives that have been developed in this program review.

Rank	Objective	Planned Activities	Individual Responsible	Start Date	End Date
1	-Full Time Faculty Hire -Maintain current course offerings and increase by 5%.	-Improve course offerings and increase section offerings	-Admin. -Dept. Fac.	Sp 11	
2	Improve course completion	-Increase in tutorial services -Increase counseling services	St. Suc. Ctr.	F 11	
3	-By improving WSH/FTES this will increase individual student/professor contact and increase persistence. The increase in persistence will aid to increase FTES -Hire Full Time Faculty	-Alternative teaching methods and discussion -Additional supplies and equipment needed	Dept. Fac.	Sp 12	
4	Increase course sections and offerings	-Departmental meetings -Staff development activities	-Dept. Chair -Staff Dev. Com	Sp 11	

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5	Integrate and implement SLO's across the curriculum	-SLO data analysis and implementation workshop	-Dept. Fac.	Sp 11	
6	Develop Student Feedback Survey	-Solicit suggestions from students, faculty and staff	-Institutional Research and Dep. Fac.	F 11	

Module Ten: Resource Priority Requests

Note: All resources requests must be linked to a program objective and to a [strategic plan goal/objective](#).

Rank	Resources Requested	Quantity /Units	Program Objective Number Related to this Request	Strategic Goal/Objective Number Related to this Request	Rationale for the Request	Anticipated Total Cost
1	FTEF Tenure-Track Faculty	1	1	Goal 3 (Objective 3)	FT/PT ratio must be improved	\$60,000
2	Lab supplies and equipment		3	Goal 3, Goal 4 (Objective 3)	Refer to Resources section.	\$20,000
3	Office, classroom and lab space (LL Remodel)		2	Goal 4 (Objective 3)	There is no life science learning center in LL Building.	(\$50,000)

Concluding Comments and Recommendations

1. Discuss any special program accomplishments or achievements that have not already been addressed.

Our department's enrollment has increased, which is encouraging. The fact that our average class size has decreased is most likely due to the addition of classes offered, including on-line classes. The increase of student numbers from evening to day enrollment may also be due to on-line classes and/or the fact that many of the new classes are day classes. However this data implies that our program's class offerings are meeting student needs and that what we plan for future classes is on the right tract.

2. Discuss anything else you would like to share about your program that has not already been addressed.

One purpose is to teach the basics of various areas of biology, however other important purposes are to promote students to think independently, to comprehend the importance of nature in our lives and want to preserve nature, to understand medical and biological impact on our everyday life, and to foster intellectual growth and critical thinking.

3. List a minimum of (3) recommendations for the program.

- Increase course sections and improve course offerings
- Improve technological understanding for course implementation
- Electronically enforce all validated prerequisites
- Increase Full-Time Tenure Track Faculty