Rubric for Assessing Regular and Substantive Interaction in Distance Education Courses

Course: BIOL 120 Humans and the Environment
Semester: Spring 2024
Reviewer: Luke Blacquiere

Part I: Regular and substantive interaction –Instructor Contact

Substantive interaction:

☐ The course doesn't show clear evidence of engaging students in teaching, learning, and assessment that is consistent with the content under discussion.

☑ The course shows clear evidence of engaging students in teaching, learning, and assessment that is consistent with the content under discussion.

Explanation and/or examples:
1. Canvas Announcements
2. Canvas Discussions
3. Quizzes, exams, and research paper

In addition, the course shows evidence of at least two of the following:

1. Direct instruction:

☐ The course doesn't provide direct instruction.

☑ The course provides direct instruction.

Explanation and/or examples:
1. Announcements include introduction and study suggestions
2. Presentation slides are provided
3. Canvas Quizzes are used to evaluate and assess pupil progress

2. Assessing or providing feedback on a student's coursework.

☐ The course doesn't show clear evidence of assessment and feedback on students' coursework.

☑ The course shows clear evidence of assessment and feedback on students' coursework.

Explanation and/or examples:
1. Quizzes and exams
2. Discussion posts
3. Research paper

3. Providing information or responding to questions about course content/competency.

☐ The course doesn't show clear evidence of responses to student questions about the course.

☑ The course shows clear evidence of responses to student questions about the course.

Explanation and/or examples:
1. Announcements
2. Instructor makes himself available via office hours, Canvas Messaging, and
3. college email.

4. Facilitating group discussion regarding course content/competency.

☐ The course doesn't show clear evidence of facilitating group discussions regarding course content or competencies.

☑ The course shows clear evidence of facilitating group discussions regarding course content or competencies.

Explanation and/or examples:
1. Discussion assignments
2.
3.

5. Other instructional activities approved by the college or accrediting agency.

☐ The course doesn't show any other evidence of instructional activities.

☑ The course shows other evidence of instructional activities (as desccribed below).

Explanation and/or examples:
1. Presentation slides
2. Discussions include course-related current event articles
3.

Regular interaction:

1. Opportunities for substantive interaction on a predictable and scheduled basis

☐ The course doesn't provide opportunities for substantive interaction on a predictable and scheduled way.

☑ The course provides opportunities for substantive interaction on a predictable and scheduled way.

Explanation and/or examples:
1. Office hours
2. Email
3. Canvas messaging

2. Monitoring student academic engagement and success and promptly and proactively engaging in interaction based on such monitoring or upon request by students.

☐ The course doesn't monitor student engagement and success nor engages in interaction based on that monitoring or upon request by students.

☑ The course monitors student engagement and success and engages in interaction based on that monitoring or upon request by students.

Explanation and/or examples:
1. Announcement reminders when students were missing due dates
2. Grading quizzes and discussions
3.

Part II. Regular and substantive interaction –Student-to-Student Contact

1. Giving students opportunities to initiate interaction with other students.

☐ The course doesn't provide opportunities for students to initiate interaction with other students.

☑ The course provides opportunities for students to initiate interaction with other students.

Explanation and/or examples:
1. Discussions
2.
3.

2. Giving opportunities to engage in regular and substantive interaction with other students.

☐ The course doesn't provide opportunities for students to engage in regular and substantive interaction with other students.

☑ The course provides opportunities for students to engage in regular and substantive interaction with other students.

Explanation and/or examples:
1. Discussions
2.
3.

3. Providing guidelines explaining levels of participation and how participation will be evaluated.

☐ The course doesn't explain the levels of interaction between students expected from each student nor how such interaction will be evaluated.

☑ The course explains the levels of interaction between students expected from each student and how such interaction will be evaluated.

Explanation and/or examples:
1. Given in the instructions about Discussion Assignment posts
2.
3.

Dept	Program	Source	Year	Initiative (Objective)	Resource Need	Requested Item(s) Please include per item cost	Funding Request	Program Faculty Lead Priority	Estimated Equipment Cost
English	[illegible]	Yearly Planning Only	[illegible]	[illegible]	[illegible]	5 Video cameras $600 each	One-time	1 = High	[illegible]
Life & Physical Sciences	[illegible]	Yearly Planning Only	2023-2024		[illegible]	Portable 3D Printer $[illegible]	One-time	2 = Medium	[illegible]
Life & Physical Sciences	Biology	Yearly Planning Only	2023-2024		Equipment	30 iWORX Pulseoximeters $266.67 each (15 SM, 15 LVC)	One-time	1 = High	$ 8,000.00
Life & Physical Sciences	Biology	Yearly Planning Only	2023-2024		Equipment	2 Somso Human Larynx, Trachea, Bronchi Models $1,075 each (LVC)	One-time	1 = High	$ 2,150.00
Life & Physical Sciences	[illegible]	Yearly Planning Only	2023-2024	BIOL OBJ 1	[illegible]	Cadaver Replacement Every Two Years	Ongoing	1 = High	[illegible]
Life & Physical Sciences	[illegible]	Yearly Planning Only	[illegible]		[illegible]	Vascular Head Model (LVC)	One-time	2 = Medium	[illegible]

Dept	Program	Source	Year	Initiative (Objective) [illegible]	Resource Need	Requested item(s) please include per item cost	Funding Request	Program Faculty Lead Priority	Estimated Equipment Cost
English	English Rhetoric	Yearly Planning and Core Topic	2022-2023	ER OBJ - 2	Operational Supplie	Paper cutter for the office	One-time	1 = High	$ 50.00
Life & Physical Sciences	Biology	Yearly Planning Only	2023-2024		Instructional Supplie	27 Wingspan Optics FieldView 8X32 Binoculars $89.99 each	One-time	1 = High	$ 2,429.73

Dept	Program	Source	Year	Initiative (Objective)	Resource Need	Requested Item(s)	Funding Request	Program Faculty Lead Priority	Estimated Equipment Cost
English	English Rhetoric	Yearly Planning and Core Topic	2022-2023	ER OBJ.- 1	Staffing	Hire FT faculty	Ongoing	1 = High	$ 100,000.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Dept	Program	Source	Year	Initiative (Objective)	Resource Need	Requested item(s) please include per item cost	Funding Request	Program Faculty Lead Priority	Estimated Equipment Cost
English	English Rhetoric	Yearly Planning and	2022-2023	ER OBJ.- 3	Technology	New software program	One-time	1 = High	$ 400.00

Building maintenance, furniture requests, repairs

FACILITIES

Dept	Program	Source
English	English Rhetoric	Yearly Planning and Core Topic

Year	Initiative (Objective) Reference	Resource Need
2022-2023	ER OBJ.- 3	Facilities

Requested Item(s) please include per item cost	Funding Request	Program Faculty Lead Priority
Need air conditioning	One-time	1 = High

TOTAL **TOTAL**

Estimated Equipment Cost	Estimated Instructional/Restricted Lottery Cost
$ 400.00	

	$ -
	$ -
	$ -
	$ -
	$ -
	$ -
	$ -

	$ -
	$ -
	$ -

$ 400.00	**$ -**

Dept	Program	Source	Year	Initiative (Objective)	Resource Need	Requested Item(s) please include per item cost	Funding Request	Program Faculty Lead Priority	Estimated Equipment Cost
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

YEARLY PLANNING DISCUSSION TEMPLATE
General Questions

Program Name __Biology_____**Academic Year** _2023-2024__

1. Has your program mission or primary function changed in the last year?

   Our program mission has not changed:
   The Biology Program is committed to providing excellent college-level education in biology at the freshman and sophomore level in support of students seeking academic and professional degrees and certificates. The Biology Program mirrors the Allan Hancock College mission and strategic plan to provide quality educational opportunities that enhance student learning and the creative, intellectual, cultural, and economic vitality of the diverse Santa Maria community. The biology faculty members are committed to incorporating innovative instructional techniques and current technologies to enhance student achievement and instill life-long learning.

2. Were there any noteworthy changes to the program over the past year? (eg, new courses, degrees, certificates, articulation agreements)

   In Fall 2023, we had the first offering of BIOL 100 through concurrent enrollment at Righetti High School. The instructor was recently observed by our BIOL 100 Coordinator and received an outstanding evaluation.

   BIOL 175 Cadaver Lab I has been approved through AP&P and is on the Fall 2024 schedule.

3. Is your two-year program map in place and were there any challenges maintaining the planned schedule?

   Two-year program maps are in place for Biology and significant effort is made in scheduling to maintain the planned schedule while avoiding conflicts with Chemistry, Physics, and Math. The maps are going to be revised by Christine Reed because the prerequisite for BIOL 150 Cellular Biology has changed from CHEM 150 General Chemistry to CHEM 120 Introductory Chemistry.

4. Were there any staffing changes?

   This semester, two new full-time Anatomy and Physiology faculty members were hired to fill vacancies from a retirement and a resignation. They will start in Fall 2024.

   We have also had turnover in our biology lab support. There was no lab assistant support for our lab specialist for several months and the assistant recently hired has already announced her resignation. Another lab assistant has started, but it has been challenging to retain people in this position.

Our lab specialist is retiring at the end of this semester after several decades of employment at AHC. Thankfully, her replacement has been hired and she has had a few weeks to train her replacement as well as the incoming lab assistant.

For several years, we had a large pool of part-time instructors available to teach our general education courses. More recently, hiring and retaining part-time instructors has become a challenge. We currently need two or three new part-time instructors to fill the current vacancies in BIOL 100 at both the Santa Maria and Lompoc campuses.

5. What were your program successes in your area of focus last year?

   Working closely with Chemistry, Physics, and Math to avoid conflicts in scheduling for our biology majors. Also, changing the BIOL 150 prerequisite from CHEM 150 to CHEM 120 allows students to begin the biology major courses one to two semesters earlier than before.

Learning Outcomes Assessment

a. Please summarize key results from this year's assessment.

   This year, the following program learning outcome (PLO) was assessed: Demonstrate knowledge of genetics, including the central dogma and heredity.

   This is a fundamental concept in biology, taught in courses for non-majors (BIOL 100), allied health majors (BIOL 128), and biology majors (BIOL 150).

   In BIOL 150 Cellular Biology, 80% of the students in Fall 2023 and 92% of the students in Spring 2024 met the PLO. The Fall 2023 course had 20 students and Spring 2024 had 25 students. Just considering students earning a passing grade in the course, 94% in Fall 2023 and 96% in Spring 2024 met the PLO.

   In Fall 2023 in BIOL 128 Microbiology, a total of 51 students were tasked with correctly answering questions based on the genetics PLO outlined above. In this student sample 40 of the students successfully completed the PLO based questions, resulting in a demonstrated 78% success rate for genetics understanding. In Spring 2024, a total of 50 students were tasked with correctly answering questions based on the genetics PLO outlined above. In this student sample 41 of the students successfully completed the PLO based questions, demonstrated an 82% success rate for understanding genetics-based questions.

   In BIOL 100 Introductory Biology, the two genetics questions with the highest level of difficulty on an exam were assessed for Spring 2024. The first question was answered correctly by 59 of 95 students (62%) and the second question was answered correctly by 66 of 95 students (69%).

b. Please summarize your reflections, analysis, and interpretation of the learning outcome assessment and data.

For Biology major students, there was an improvement in the outcome from Fall semester to Spring semester. One change made in the Spring semester was including more in class concept map activities and practice genetics questions before the assessment. This likely contributed to an increase in the number of students meeting the outcome.

For BIOL 128, the data from these two semesters indicate a slight improvement in student understanding when asked about genetics, the central dogma and heredity. In the Spring semester an additional activity sheet was provided to the class, and students were asked to convert DNA to mRNA to tRNA to create functional protein products. This additional practice sheet resulted in students asking more questions about the process, and most likely contributed to the slight increase observed in overall student success with this PLO.

For BIOL 100, this is an exam that takes place before the drop deadline and there are some students not earning a passing grade that attempt this exam. This may be a factor in less than 70% of the students meeting the PLO. Also, the two most difficult questions were selected from a total of 15 questions. When all 15 questions are considered, student performance exceeds 70%. A Genetics Investigation has been created by our lead BIOL 100 instructor for students to review vocabulary and practice solving problems pertaining to genetics.

c. Please summarize recommendations and/or accolades that were made within the program/department.

The data shows how biology faculty use PLO information for instructional feedback and planning. It also highlights how faculty are continually developing additional activities and exploring resources for student success and learning retention.

d. Please review and attach any ***changes*** to planning documentation, including PLO rubrics, associations, and cycles planning.

The following new PLOs for Biology are currently undergoing AP&P review:

1. Demonstrate knowledge of evolutionary principles and biodiversity.
2. Demonstrate knowledge of genetics, including the central dogma and heredity.
3. Demonstrate proficiency in using the scientific process to make hypotheses about natural phenomena, test those hypotheses, and analyze the results.
4. Demonstrate knowledge of homeostasis in regards to biological systems and functions.
5. Demonstrate knowledge of cell theory, including diverse cell types and functions.

Distance Education (DE) Modality Course Design Peer Review Update (Please attach documentation extracted from the *Rubric for Assessing Regular and Substantive Interaction in Distance Education Courses*)

a. Which courses were reviewed for regular and substantive interactions (RSI)?

   BIOL 120 Humans and the Environment – See attached DE Rubric

b. What were some key findings regarding RSI?

   - Some strengths:

     Canvas Announcements, Discussions, Messaging, AHC email, and office hours are all used for interaction with students.

   - Some areas of possible improvement:

     Increase the frequency of feedback regarding graded assignments in the course.

c. What is the plan for improvement?

   The course will be updated this summer utilizing the important components addressed in the DE Pedagogy course.

CTE two-year review of labor market data and pre-requisite review

N/A

a. Does the program meet documented labor market demand?
b. How does the program address needs that are not met by similar programs?
c. Does the employment, completion, and success data of students indicate program effectiveness and vitality? Please, explain.
d. Has the program met the Title 5 requirements to review course prerequisites, and advisories within the prescribed cycle of every 2 year for CTE programs and every 5 years for all others
e. Have recommendations from the previous report been addressed?

Use the tables below to fill in **NEW** resources and planning initiatives that **do not apply directly to core topics.** ***This section is only used if there are new planning initiatives and resources requested.***

New Program Planning Initiative (Objective) – Yearly Planning Only	
Title (including number:	BIOL Obj 1 – Funding for Cadavers
Planning years:	*2024-2025*
Description: Long-term funding is needed to continue our cadaver program. There is a newly developed Cadaver Lab course on the Fall 2024 schedule and the current cadavers have been used for many years. The biology program must have funding to maintain a rotation of cadavers every few years.	
What college plans are associated with this Objective? (Please select from the list below): ☒ **Ed Master Plan** ☐ **Student Equity Plan** ☐ **Guided Pathways** ☐ **AB 705/1705** ☐ **Technology Plan** ☐ **Facilities Plan** ☐ **Strong Workforce** ☐ **Equal Employment Opp.** ☐ **Title V**	

New Program Planning Initiative (Objective) – Yearly Planning Only	
Title (including number:	BIOL Obj 2 – Hire New Part-Time Faculty
Planning years:	*2024-2025*
Description: Biology faculty, along with the dean and department chair, will hire new part-time faculty to fill current vacancies. We need instructors for BIOL 100 in both Santa Maria and Lompoc for Fall 2024.	
What college plans are associated with this Objective? (Please select from the list below): ☒ **Ed Master Plan** ☒ **Student Equity Plan** ☒ **Guided Pathways** ☐ **AB 705/1705** ☐ **Technology Plan** ☐ **Facilities Plan** ☐ **Strong Workforce** ☐ **Equal Employment Opp.** ☐ **Title V**	

Resource Requests: Please see attached Resource Request Excel template.

Area of Focus Discussion Template
INNOVATIVE SCHEDULING

Innovative Scheduling embraces mapping, scheduling, and student outcomes. This focus includes a review of modalities, times, days, and sequence of courses. It supports areas of interest. It is based on student success, retention, and completion/graduation data. Sample activities include the following:

Possible topics:

- Review scheduling matrices – program map alignment, successes, and challenges.
- Collaborate with guided pathways success teams to assess scheduling conflicts and bottlenecks within and across disciplines that impact student completion.
- Assess mix of teaching modalities – mornings-afternoons-evenings; weekends; face-to-face, hybrid, and distance learning. NOTE: Hybrid is the combined use of various teaching modalities.
- Address scheduling conflicts or dependencies across disciplines or general education areas.
- Student access – cultivate majors, support cohorts and interdisciplinary connections.
- Review units and time to course and program completion.

1. What data were analyzed and what were the main conclusions?

Faculty from Biology, Chemistry, Physics, Math, and Engineering along with Counselors well versed in serving STEM majors collaborated to review what course conflicts arise for our students. These scheduling conflicts interfere with timely degree completion and transfer. As far as Biology is concerned, the scheduling for major courses is not in conflict with Chemistry 150/180 courses and Physics 140/160 courses. There have been a few students who would like to enroll in BIOL 150 or BIOL 154 and CHEM 140, which is not currently an option since both BIOL 154 and CHEM 140 are only offered in the Spring semester and meet on Tuesday and Thursday in the morning. BIOL 150 is offered in the Fall and Spring semesters but also meets on Tuesday and Thursday morning.

2. Based on the data analysis and looking through a lens of equity, what do you perceive as *challenges* with student success or access in your area of focus?

Several of the courses for STEM majors are only offered at one time each semester or one semester per academic year. We have most of our STEM major courses with waitlists, but we do not have the faculty or lab space to accommodate more sections. Also, BIOL 150, the first course for Biology majors, had a pre-requisite of CHEM 150 which meant some students took a year completing CHEM 120 and CHEM 150 before starting the major series.

3. What are your plans for change or *innovation*?

The pre-requisite for BIOL 150 has just been changed to CHEM 120 starting in Fall 2024. Also, we have started a discussion about offering a two-semester sequence option for Biology majors on a fast track to transfer. This will allow students to complete Biology and Chemistry in their first year and Physics in their second year, reducing the potential for course conflicts when students attempt Biology, Chemistry, and Physics in the same semester. Adding a CHEM 140 section in the Fall semester will help with BIOL 150/154 conflicts.

A counselor recommendation was to continue to offer an evening section of BIOL 100 Introductory Biology as a hybrid (online lecture, in person lab) so high school students would have the opportunity to attend class in the evening only once per week, not twice, to complete this G.E. requirement.

4. How will you *measure* the results of your plans to determine if they are successful?

Obtain feedback from students regarding timeline to enter BIOL 150 and ability to enroll in STEM courses without conflict.

Based on the narratives for the prompts above, what are some program planning initiatives and resources needed for the upcoming years? Use the tables below to fill in **NEW** resources and planning initiatives.

New Program Planning Initiative (Objective) – Core Topic Only	
Title (including number:	BIOL Obj 1 – New course in Organismal Biology and Ecology for Biology majors
Planning years:	*2024-2025*
Description: *Faculty teaching the biology major courses will meet to explore and develop curriculum for a second semester course following BIOL 150 that will cover Organismal Biology and Ecology. Our curriculum specialist will be consulted and a new course proposal should be ready for the AP&P approval process by the end of the academic year 2024-2025.*	
What college plans are associated with this Objective? (Please select from the list below): ■ **Ed Master Plan** ■ **Student Equity Plan** ■ **Guided Pathways** ☐ **AB 705/1705** ☐ **Technology Plan** ☐ **Facilities Plan** ☐ **Strong Workforce** ☐ **Equal Employment Opp.** ☐ **Title V**	

Resource Requests: Please see attached Resource Request Excel template.

Program Review Signature Page:

Ashley Wise
Ashley Wise (May 28, 2024 14:25 PDT)

Program Review Lead | Date

Program Dean | Date

Vice President, Academic Affairs | Date

Biology Innovative Scheduling 2023-24

Final Audit Report 2024-06-18

Created:	2024-06-18
By:	Christy Lopez (clopez@hancockcollege.edu)
Status:	Signed
Transaction ID:	CBJCHBCAABAAO2_qshn-bFNTzo_zz3ay-vO-r8f80LkA

"Biology Innovative Scheduling 2023-24" History

Document created by Christy Lopez (clopez@hancockcollege.edu)
2024-06-18 - 5:20:33 PM GMT- IP address: 209.129.94.61

Document emailed to Robert Curry (rcurry@hancockcollege.edu) for signature
2024-06-18 - 5:21:32 PM GMT

Email viewed by Robert Curry (rcurry@hancockcollege.edu)
2024-06-18 - 5:22:13 PM GMT- IP address: 104.47.55.126

Document e-signed by Robert Curry (rcurry@hancockcollege.edu)
Signature Date: 2024-06-18 - 5:32:52 PM GMT - Time Source: server- IP address: 209.129.94.61

Agreement completed.
2024-06-18 - 5:32:52 PM GMT