PALAU COMMUNITY COLLEGE

"We Strive to Guarantee Quality and Excellence"

Palau Community College is an accessible public educational institution helping to meet the technical, academic, cultural, social, and economic needs of students and communities by promoting learning opportunities and developing personal excellence.

T2 - Instructional Departments
(Academic Departments)
Three Year Program Review

Natural Science department

Fall 2015 to Summer 2018

Program Review Completed By:

Name	Title	Signature	Date
Vernice Yuji	Science Dept. Chair		January 31, 2019

Program Review Certified By:

Name	Title	Signature	Date
Robert Ramarui	Dean, Academic Affairs		January 31, 2019

Program Review Received By: (Institutional Research & Evaluation Office)

Name	Title	Signature	Date
Ligaya T. Sara	Institutional Researcher		01/31/19

Purpose:

Program review at Palau Community College is a process that provides an extensive evaluation of academic and non-academic programs on a three year basis. The results of yearly assessments (using the FAMED process) are compiled into the one three year review cycle.

The purpose of program review is to evaluate program sufficiency to allow definite strategies to be developed for major revisions, to provide information for consideration when decisions are made, and to develop recommendations to improve institutional effectiveness.

Instructions for completing Program Review:

1. Type your text into the boxes. The text boxes will expand to accommodate the amount of text spaces you need.

2. Individual instructions are included before each section. Examples are in **green**, remove when you start writing.

3. Submit completed and signed Program Review in both hard copy and electronic copy format to the Institutional Research & Evaluation Office.

4. Required supporting documents must be included during submission.

   Appendix A: CLOs – GE/ILOs Mapping (e-copy only)

   Appendix B: Most Updated & Approved Outlines within this cycle (e-copy only)

   Appendix C: FAMED grid of all course assessment data within review cycle (e-copy in pdf only)

5. Be sure to keep both hard and electronic copies for your file.

Note: Other college plans may include the 15-Year Institutional Master Plan, the 5-Year Technology Plan, Institutional Learning Outcomes, Institutional-Set Standards for Student Achievement, or other plans, such as an approved department plan or committee plan.

I. Academic Department Purpose and Relationship to the College Mission

1. State the mission of this academic department below.

The mission of the Department of Natural Sciences is to help students develop a strong science background and critical thinking skills through meaningful in- and out-of-class experiences. The Department aims to provide students with an understanding and appreciation of the natural world from a scientific perspective. The Department of Natural Sciences strives to remain consistent with the educational mission of Palau Community College by helping to meet the technical, academic, cultural, social, and economic needs of students and communities by promoting learning opportunities and developing personal excellence.

2. How is the academic department supporting the overall mission of the College?

Courses in the natural sciences are designed to prepare students for living and working in a world where science informs both public and private issues. Science courses aim to provide students with a basic understanding of the discipline and to help students explore its theories, principles, models and reasoning processes; to examine the methods and values of the discipline; and to review the historical and cultural context of the discipline and its relation to the wider world of ideas. Natural sciences courses are offered in the fields of biology, chemistry, geology, environmental science and physics and serve students majoring in environmental/marine science, STEM and Nursing programs as well as those seeking to fulfill their general education requirements for graduation.

The mission of the Department of Natural Sciences is to help students develop a strong science background and critical thinking skills through meaningful in- and out-of-class experiences. The Department aims to provide students with an understanding and appreciation of the natural world from a scientific perspective. The Department of Natural Sciences strives to remain consistent with the educational mission of Palau Community College by helping to meet the technical, academic, cultural, social, and economic needs of students and communities by promoting learning opportunities and developing personal excellence.

3. Provide a brief history of this academic department below. Include the updates of major changes and accomplishments since the last review.

The Natural Science Department supports the entire college community by providing a wide variety of science courses required for each student's majors, especially the EMS, STEM and Nursing programs. The department also supports the Liberal Arts education and other academic programs and aims to providing students with a solid foundation in a number of disciplines and providing training in scientific methods, technical laboratory skills, and field research techniques. The history of the science

department is traced back to 1976, during Micronesian Occupational College (MOC) when it was called natural science department. The department was formed based on three discipline groups and they were: biological, chemical, and physical science. The discipline groups were established to meet the needs of occupational students in the area of science. Subject areas included botany, chemistry, physics, and biology.

Updates since the last review include the development and implementation of an Introduction to Environmental Science course (SC103), first offered in Fall 2017. This course is an introduction to environmental science. It is designed to give students a basic understanding of the Earth's life-supporting, ecological systems, and threats to those systems. Students will learn to determine and analyze human impacts to natural environmental systems and identify and differentiate between different types of pollution sources and their environmental impacts. There is no prerequisite for this course. This course may be taken to fulfill SC core under Required General Education courses in every degree program.

Additional update, prerequisites for Physics I (SC205) changed in Fall 2016 from SC119 and MA221 to SC119 and MA112.

II. Student and Faculty Data

Figure 1 – Course Completion Data

You may insert more rows as needed

Table 1a. Course Completion of Department Courses (Fall)

FA 2015					FA 2016					FA 2017				
Course	%Passed	%Failed	%Withdraw	Enrolled	**Course**	Passed	Failed	Withdraw	Enrolled	**Course**	Passed	Failed	Withdraw	Enrolled
SC159A	46	6	2	54	SC159A	26	12	4	42	SC103	58	0	2	60
										SC159A	28	8	2	38

Table 1b. Course Completion of Department Courses (Spring)

SP 2016					SP 2017					SP 2018				
Course	Passed	Failed	Withdraw	Enrolled	**Course**	Passed	Failed	Withdraw	Enrolled	**Course**	Passed	Failed	Withdraw	Enrolled
SC159B	32	0	0	32	SC159B	9	3	0	12	SC103	72	6	4	82
SC205	2	0	0	2	SC205	4	0	0	4	SC159B	12	0	1	13
SC209	10	0	0	10	SC209	8	0	0	8	SC205	2	0	0	2
										SC209	14	0	0	14

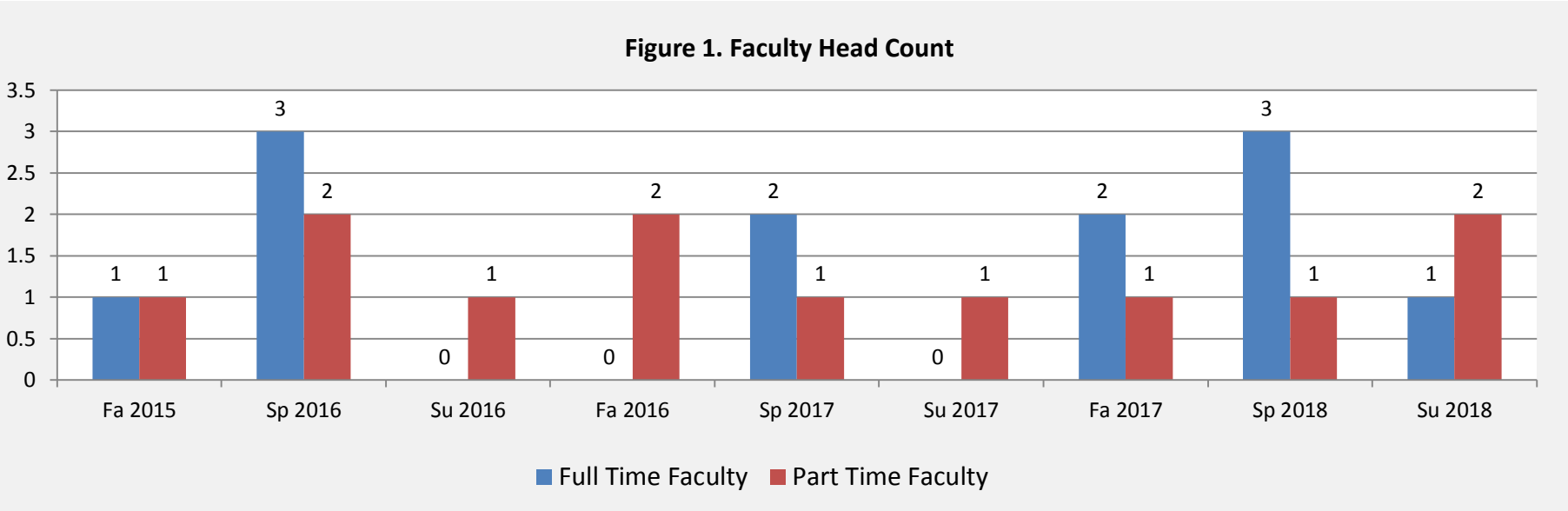
Table 1c. Course Completion of Department Courses (Summer)

SU 2016					SU 2017					SU 2018				
Course	Passed	Failed	Withdraw	Enrolled	**Course**	Passed	Failed	Withdraw	Enrolled	**Course**	Passed	Failed	Withdraw	Enrolled
SC206	2	0	0	2	SC206	4	0	0	4	SC103	106	8	6	120
										SC206	3	0	0	3

Provide Summary of Tables 1a, 1b & 1c including its trends analysis below.

Table 1a-Enrollment for SC159A in table 1a was high as it is a prerequisite for most nursing courses. First semester to offer SC103.
Table 1b-This was the second semester to offer SC103.
Table 1c-SC206 was offered to accommodate STEM students.

Figure 1 – Faculty Information



Provide summary of Figure 1 including its trends analysis below.

Part time faculties are needed every semester to help teach science courses and assist in other department needs.

III. Student Learning and Curriculum

School Year	How many department courses are there? (refer to catalog or most recent approval by CPC)	% of courses with Identified CLOs	List all revised department courses outlines or proposed new courses that received CPC approval within this review cycle	% of CLOs aligned with GE/ILOs
2015-2018	6	100%	100%	100%

Provide Summary of Student Learning and Curriculum in the box below. Summary should include reasons for course revisions and course proposals. If any course went through the validity process during this cycle, include the information here.

Development and implementation of an Introduction to Environmental Science course (SC103), first offered in Fall 2017. There is no prerequisite for this course. This course may be taken to fulfill SC core under Required General Education courses in every degree program.

IV. Course Assessment Data

Semester Assessed	Course Assessed	CLO-GE/ILO Mapping	Results of Assessments **(Do not combine CLO results; report individual CLO results ONLY.)**
Fall 2015	SC159A	CLO 1-6 – GE/ILO 1	CLO 1: 94% performed at the proficiency level
		CLO 1-6 – GE/ILO 3	CLO 2: 88% performed at the proficiency level
			CLO 3: 100% performed at the proficiency level
			CLO 4: 80% performed at the proficiency level
			CLO 5: 88% performed at the proficiency level
			CLO 6: 100% performed at the proficiency level.

Year 1: School Year 2015

Semester Assessed	Course Assessed	CLO-GE/ILO Mapping	Results of Assessments **(Do not combine CLO results; report individual CLO result.)**
Spring 2016	SC159B	CLO 1-3-GE/ILO 1	CLO 1 - 72% performed at the proficiency level
		CLO 1-3-GE/ILO 3	CLO 2 – 52% performed at the proficiency level

			CLO 3 – 75% performed at the proficiency level
Spring 2016	SC209	CLO 1-6-GE/ILO 1	CLO 1: 75% of the students assessed achieved the rating of 3 (competent level) or better. (FE) 100% of the students assessed performed at the proficiency level. (RP) 100% of the students assessed performed at the proficiency level. (Lab)
		CLO-1-6-GE/ILO 2	CLO 2: 60% of students assessed performed at the proficiency level. (FE) 100% of the students assessed performed at the proficiency level. (Lab)
		CLO-1-6-GE/ILO3	CLO 3: 85% of the students assessed performed at the proficiency level. (Lab) 100% of the students assessed performed at the proficiency level.(RP) 85% of the students assessed performed at the proficiency level. (FE)
		CLO-1-6-GE/ILO4	CLO 4: 75% of the students assessed performed at the proficiency level. (FE) 100% of the students assessed performed at the proficiency level. (lab) 100% of the students assessed performed at the proficiency level. (RP)
			CLO 5: 100% of the students assessed performed at the proficiency level. (RP) 65% of the students assessed performed at the proficiency level. (FE) Review CLO and assessment and revise as needed. 90% of the students assessed performed at the proficiency level. (lab)
			CLO 6: 90% of the students assessed performed at the proficiency level. (FE) 91% of the students assessed performed at the proficiency level. (lab)

Year 2: School Year 2016

Semester Assessed	Course Assessed	CLO-GE/ILO Mapping	Results of Assessments **(Do not combine CLO results; report individual CLO result.)**
Fall 2016	SC159A	CLO 1-6 – GE/ILO 1	CLO 1: 92% of the students assessed performed at the proficiency level.
		CLO 1-6 – GE/ILO 3	CLO 2: 92% of the students assessed performed at the proficiency level.
			CLO 3: 58% of the students assessed performed at the proficiency level.
			CLO 4: 75% of the students assessed performed at the proficiency level.
			CLO 5: 58% of the students assessed performed at

			the proficiency level.
			CLO 6: 58% of the students assessed performed at the proficiency level
Spring 2017	SC159B	CLO 1-3-GE/ILO 1	CLO 1: 73% of the students assessed performed at the proficiency level. (Midterm) 50% of the students assessed performed at the proficiency level. (Final exam)
		CLO 1-3-GE/ILO 3	CLO 2: 73% of the students assessed performed at the proficiency level. (Midterm) 50% of the students assessed performed at the proficiency level. (Final exam)
			CLO 3: 73% of the students assessed performed at the proficiency level. (Midterm) 50% of the students assessed performed at the proficiency level. (Final exam)
Spring 2017	SC205	CLO 1-7-GE/ILO 1	CLO 1: 100% of the students assessed performed at the proficiency level. (Final exam)
		CLO 1-7-GE/ILO 3	CLO 2: 100% of the students assessed performed at the proficiency level. (Final exam)
			CLO 3: 100% of the students assessed performed at the proficiency level. (Final exam)
			CLO 4: 100% of the students assessed performed at the proficiency level. (Final exam)
			CLO 5: 100% of the students assessed performed at the proficiency level. (Final exam)
			CLO 6: 100% of the students assessed performed at the proficiency level. (Final exam)
			CLO-7: 100% of the students assessed performed at the proficiency level. (Final exam)
Spring 2017	SC209	CLO 1-6-GE/ILO 1	CLO 1: 95.9% of the students assessed achieved the rating of 3 (competent level) or better. (FE) 98.3% of the students assessed performed at the proficiency level. (Lab)
		CLO-1-6-GE/ILO 2	CLO 2: 95.9% of the students assessed achieved the rating of 3 (competent level) or better. (FE) 100% of the students assessed performed at the proficiency level. (Lab)
		CLO-1-6-GE/ILO3	CLO 3: 95.9% of the students assessed achieved the rating of 3 (competent level) or better. (FE) 100% of the students assessed performed at the proficiency level. (Lab)
		CLO-1-6-GE/ILO4	CLO 4: 93.2% of the students assessed achieved the rating of 3 (competent level) or better. (FE) 100% of the students assessed performed at the proficiency level. (Lab)
			CLO 5: 95.9% of the students assessed achieved the rating of 3 (competent level) or better. (FE)

			98.3% of the students assessed performed at the proficiency level. (Lab)
			CLO 6: 98.6% of the students assessed achieved the rating of 3 (competent level) or better. (FE) 98.3% of the students assessed performed at the proficiency level. (Lab)

Year 3: School Year 2017

Semester Assessed	Course Assessed	CLO-GE/ILO Mapping	Results of Assessments **(Do not combine CLO results; report individual CLO result.)**
Fall 2017	SC103	CLO 1-6-GE/ILO 1	CLO 1: 85% of the students assessed performed at the proficiency level. (FE) 85% of the students assessed performed at the proficiency level. (Lab)
		CLO 1-6-GE/ILO 3	CLO 2: 85% of the students assessed achieved the rating of 3 (competent level) or better. (FE) 85% of the students assessed performed at the proficiency level. (Lab)
		CLO 1,3-GE/ILO 4	CLO 3: 85% of the students assessed achieved the rating of 3 (competent level) or better. (FE) 85% of the students assessed performed at the proficiency level. (Lab)
			CLO 4: 85% of the students assessed achieved the rating of 3 (competent level) or better. (FE) 85% of the students assessed performed at the proficiency level. (Lab)
			CLO 5: 85% of the students assessed achieved the rating of 3 (competent level) or better. (FE) 85% of the students assessed performed at the proficiency level. (Lab)
			CLO 6: 85% of the students assessed achieved the rating of 3 (competent level) or better. (FE) 85% of the students assessed performed at the proficiency level. (Lab)
Fall 2017	SC159A	CLO 1-6 – GE/ILO 1	CLO 1: 70.6% of the students assessed performed at the proficiency level.
		CLO 1-6 – GE/ILO 3	CLO 2: 100% of the students assessed performed at the proficiency level.
			CLO 3: 70.6% of the students assessed performed at the proficiency level.
			CLO 4: 88.2% of the students assessed performed at the proficiency level.
			CLO 5: 76.5% of the students assessed performed at the proficiency level.
			CLO 6: 70.6% of the students assessed performed at

			the proficiency level.
Spring 2018	SC103	CLO 1-6-GE/ILO 1	CLO 1: 100% of the students assessed performed at the proficiency level.
		CLO 1-6-GE/ILO 3	CLO 2: 100% of the students assessed performed at the proficiency level.
		CLO 1,3-GE/ILO 4	CLO 3: 100% of the students assessed performed at the proficiency level.
			CLO 4: 97.2% of the students assessed performed at the proficiency level.
			CLO 5: 91.7% of the students assessed performed at the proficiency level.
			CLO 6: 100% of the students assessed performed at the proficiency level.
Spring 2018	SC159B	CLO 1-3-GE/ILO 1	CLO 1: 100% of the students assessed performed at the proficiency level. (Midterm) 81.8% of the students assessed performed at the proficiency level. (Final exam)
		CLO 1-3-GE/ILO 3	CLO 2: 100% of the students assessed performed at the proficiency level. (Midterm) 81.8% of the students assessed performed at the proficiency level. (Final exam)
			CLO 3: 63.6% of the students assessed performed at the proficiency level. (Final exam)
Spring 2018	SC205	CLO 1-7-GE/ILO 1	CLO 1: 100% of the students assessed performed at the proficiency level. (Midterm exam)
		CLO 1-7-GE/ILO 3	CLO 2: 100% of the students assessed performed at the proficiency level. Midterm exam) 100% of the students assessed performed at the proficiency level. (Final exam)
			CLO 3: 100% of the students assessed performed at the proficiency level. (Midterm exam) 100% of the students assessed performed at the proficiency level. (Final exam)
			CLO 4: 100% of the students assessed performed at the proficiency level. (Midterm exam) 100% of the students assessed performed at the proficiency level. (Final exam)
			CLO 5: 100% of the students assessed performed at the proficiency level. (Midterm exam) 100% of the students assessed performed at the proficiency level. (Final exam)
			CLO 6: 100% of the students assessed performed at the proficiency level. (Final exam)
			CLO 7: 100% of the students assessed performed at the proficiency level. (Final exam)
Spring	SC209	CLO 1-6-GE/ILO 1	CLO 1: 78.6% of the students assessed performed at

2018			the proficiency level. (Final exam)
		CLO-1-6-GE/ILO 2	CLO 2: 35.7% of the students assessed performed at the proficiency level. (Final exam)
		CLO-1-6-GE/ILO3	CLO 3: 71.4% of the students assessed performed at the proficiency level. (Final exam)
		CLO-1-6-GE/ILO4	CLO 4: 57.1% of the students assessed performed at the proficiency level. (Final exam)
			CLO 5: 57.1% of the students assessed performed at the proficiency level. (Final exam)
			CLO 6: 100% of the students assessed performed at the proficiency level. (Final exam)

Provide Summary of Course Assessment Data with analysis results in the box below. Summary should include how assessment results have led to improvement of course and department learning outcomes, and student learning and achievement.

Course assessment results have led to improvement of course and department learning outcomes, and student learning and achievement.

V. General Education / Institutional Learning Outcomes (GE/ILO) Assessment

Year Assessed	List GE/ILOs	Proficiency Level	Result of Assessments **(Do not combine GE/ILO results; report individual GE/ILO result.)**

Year Assessed	List GE/ILOs	Proficiency Level	Result of Assessments **(Do not combine GE/ILO results; report individual GE/ILO result.)**

Provide Summary of GE/ILOs Assessments and analysis results in the box below. Summary should include analysis of this cycle with previous cycles; how assessment results have led to major decisions made to support the improvement of department's student learning and student achievement.

Course assessment results have led to major decisions made to support the improvement of department's student learning and student achievement.

VI. Evaluation of Previous Department Review Action Plan (s)

Indicate the status of the previous department review action plans below. (Include all previous action plans.) Indicate the cycle and years of the previous department review.

Cycle:	Years:

Action Plan Activity/Objectives	Status Complete/Ongoing/Incomplete	Updates of Action Plan(s) (Report action plans individually.)
Previous department review	Incomplete	Work order was not followed up.

Provide Summary of the Evaluation of Previous Department Review Action Plans below. Summary should include what measurable outcomes were achieved due to the actions completed; were the completed actions plans led to improvement of student learning and student achievement; and provide detailed explanation of action plans that are ongoing and plans that are incomplete.

VII. Action Plans

Based on current department review results, describe the department action plan(s) for the next three (3) academic years. Include necessary resources.

Action Plan Activity/Objective	How will this action plan improve student learning outcomes? (CLO, GE, ILO)	Needed Resources (if any)	Timeline
Personnel	needed to help teach science courses and assist in other department needs	$16,000/annually	Fall 2019
Facility	Shelves and cabinets are infested with termites; holes in ceilings and leaks when it rains.	$5,000	ASAP
Equipment	Laboratory stools Autoclave	$3,500	ASAP

Provide Summary of Action Plans in the box below. Summary should include department major strengths; department needs and any recommendations for improvements based on assessment results, data and/or other college major plans. The summary needs to indicate overall department needs that may require financial support from the institution.

Additional full time faculty is needed to help teach science courses and assist in other department needs. Shelves and cabinets are infested with termites; holes in ceilings and leaks when it rains. More science labs being offered concurrently at full capacity, additional stools for students to sit are needed. An autoclave is needed for Microbiology Labs prep and sterilization purposes.

IX. Resource Request

Itemize resource request below to include resource requests that will support action plans and are data-driven (e.g. course enrollment, course needs, student needs). This section should provide a clear representation of the department's annual budget request.

Type of Resource	Detailed Description	Estimated Amount Requested	Justification
Personnel	Full- time	$16,000/annual	Additional full time faculty is needed to help teach science courses and assist in other department needs.
Facility	Science Lab A & B; and chemical storage	$5,000	Shelves and cabinets are infested with termites; holes in ceilings and leaks when it rains.
Equipment	Laboratory stools	$500.00	More science labs being offered concurrently at full capacity
Supplies			
Software			
Training			
Other	Autoclave	$3,000.00	Needed for Microbiology Labs prep and sterilization purposes
Total		$24,500.00	

Provide Summary of Resource Request in the box below. Summary should connect the resources requested to course, department and institutional learning outcomes assessment results and/or any other college major plans.

Work order (s) to be submitted to Academic Affairs and follow-up for updates.

Do not forget to include all your required appendices. Required appendices are listed on page 2 of this template.