## Marine Science Program

## [Program Review Report](#_How_to_Complete_6)

## College of Micronesia-FSM

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| --- | --- | --- | --- | --- |
| AP Full Official |  | | | |
| Campus | National Campus | | AP Review Submission Date | *August. 3rd, 2018* |
| Completed by | Olter-Pelep et al. | | AR Review Cycle | *Fall 16 – Spring 17*  *Fall 17 – Spring 18* |
| **Program Goals** | | | | |
| Program goals are broad statements concerning knowledge, skills, or values that the faculty members expect the graduating students to achieve. | | | | |
| At the completion of **Marine Science Program** the student will be able to:   1. Demonstrate fundamental knowledge of geological, geomorphological, physical, chemical, and biological oceanography. 2. Apply fundamental knowledge of marine sciences towards identifying and critically analyzing and outlining potential solutions for local, regional and global problems relating to marine systems. 3. Apply the scientific process to formulate hypotheses, design experiments, and collect and analyze data from which valid scientific conclusions are drawn. 4. Communicate effectively, in written and oral forms, utilizing the language and concepts of marine science. | | | | |
| **Program History** | | | | |
| This section describes the history of the program. This includes the date and reason of implementation, significant milestones in the development of the program, and significant current activities. | | | | |
| In 1986, the Marine Science Program was implemented and the first class graduated in 1989. The program began rather experimentally as a means to train students for pursuit of a higher degree in marine science and to prepare individuals for local positions, and today this remains a program focus. Initially, the program experienced recruitment difficulties and had merely six students enrolled. Today, the program draws more than 50 students. Recruitment efforts over the years have improved, and our program serves as a gateway to many internship and scholarship opportunities for those who excel in the program. Further, in recent years, our students have been highly competitive against Pacific students for scholarship and internship positions across the region.  Four years ago, program learning outcomes were altered in an effort to make them a more accurate reflection of expectations, and more importantly, to ensure the outcomes were measureable. The prerequisites were changed for MR 201 Aquaculture and MR 210 Marine Ecology to ensure students had more complete background knowledge for success in each of these courses. Further, developed and approved were new course outlines for MR 120 Marine Biology and MR 201 Aquaculture. These outlines were done to ensure all course learning and student learning outcomes were measurable and that we had specific strategies in place for the purpose of assessing student learning outcomes. Our division also designed and had approved ESS 102WS/1 Open Water SCUBA Diver as an official course, with the primary goal of offering this training to our marine science majors, as many positions and research efforts require methods of underwater investigation to be utilized. This course was not required, but would be highly recommended to our majors in order to also satisfy their exercise sports science 1 credit hour graduation requirement. We have had to increase the number of sections and class size of MR 120 Marine Biology and MR 240 Oceanography in order to meet both increasing numbers of marine science majors and of other majors who must satisfy their science with lab requirement for graduation. | | | | |
| **Program Description** | | | | |
| The program description describes the program, including its organization, relationship to other programs in the system, program design, degree(s) offered, and other significant features of the program, such as elements/resources for forward-looking new program contributions to the state’s economy, or specialized program accreditation. | | | | |
| The Marine Science Program is designed to respond to a need expressed by the FSM leadership in the FSM States and National Economic Summits. It has been designed to take full advantage of the unique variety of marine environments available in the FSM, particularly Pohnpei. This program provides a solid foundation for students interested in pursuing a higher degree at a four-year institution.  The Marine Science program falls under the Division of Natural Sciences and Mathematics and is currently maintained by all three full-time faculty members. Faculty members are responsible for program-specific course instruction, though each also teaches a few courses outside the marine program each year. The program offers only an Associate of Science Degree in Marine Science. Students of other majors also regularly take some of our marine science courses, in an effort to meet their science with a lab and science without a lab, graduation requirements. Typically, the most heavily utilized marine courses taken by non-majors are MR 120 Marine Biology and MR 240 Oceanography. Additionally, our marine science faculty teach numerous sections of SC 111, Environmental Studies (3 credits), one section of SC 220 (3 credits, Geology and SC 255 (4 credits), General Zoology with lab, which serves as science elective for students annually. | | | | |
| **Program Admission Requirements** | | | | |
| This section describes the requirements for admission into the program and other requisites. | | | | |
| Students who are accepted for admissions to COM-FSM are eligible for the Marine Science Program, though all of our courses require students to demonstrate a proficient reading level either by scoring high enough on their entrance test or by completing additional studies and successfully passing ESL 089. | | | | |
| **Program Certificate/Degree Requirements** | | | | |
| This section specifies the requirements for obtaining a certificate/degree in the program, including specific courses, credits, internships, practical, etc. This section should also include the program’s suggested schedule and program course matrix. | | | | |
| **The new suggested Marine Science program schedule should be reshuffled. It is also suggested to bring some minor changes by modifying and replacing a few courses. The following elaborates on these changes.**  **First Semester (1)**  EN 110 Advanced Reading 3  MR 120 Marine Biology w/lab 4  MS 100 College Algebra 3  EN 120A Expository Writing I 3  ---------- (2) Social Science 3  \_\_\_\_\_  16  **Second Semester**  EN 120B Expository Writing II 3  MR 240 Oceanography w/lab 4  MR 210 Marine Ecology 3  SC 230 Intro. to Chemistry w/lab 4  CA 100 Computer Literacy 3  \_\_\_\_\_  17  **Summer Session**  There are no scheduled classes for the summer session – students should be able to complete an Associate degree program within the 4 semester time frame allocated for an Associate degree.  But if there are remedial courses a student need to take or if a student has failed or did poorly in previous taken courses, the summer session should be a good opportunity to catch up with the program planned schedule.  **Third Semester**  MS 150 Statistics 3  SS150 History of Micronesia 3  ---------- (3) Exercise and Science Sports 1  MR 230 Ichthyology 4  ---------- Marine/Natural Science w/lab 4  \_\_\_\_\_  15  **Fourth Semester**  MR 250 Fisheries Biology & Management 3  MR 201 Aquaculture 4  MR 254 (4) Marine Biology Field Studies 3  ---------- Marine/Natural Science 3  ----------(2) Humanities 3  \_\_\_\_\_  16  **TOTAL CREDITS: 64**   1. The first semester has a total of only 16 credits to permit the students to begin with. 2. **Open elective; Humanities; and Social Sciences elective** – In the previous curriculum there are 3 credits reserved for an open elective, 3 credits for Humanities; and another 3 credits for a Social Sciences elective. It is suggested that there would only be 3 credits allocated here and it should be an open elective with the possibility of choosing either a Social Science or Humanities according to desire. Eliminating 6 credits will permit to cut down on the overall number of credits and maintain a program total credit that can be distributed into 4 semesters, summer sessions being omitted. 3. **Exercise and Science Sports** is a 1 credit found in all programs. In the Marine Science program, the students have the privilege to follow a SCUBA diving course and become certified open water divers. This is a great trump card for any marine science major. Work in coastal marine sciences often requires being a certified diver. To register to this course, priority is given to the students following the marine science program. Thus, it is logical that it be offered to the marine science students who have already completed their freshman year and proven their interest in the program. By following the course later on in their program, the students will likely be more mature and responsible. 4. **MR254 Marine Biology Field Studies** is considered to be a “capstone course” which implies that students have completed the greater part of their other marine science courses and can relate to this acquired academic background in order to undertake a research project in the field. This course was initially offered during the second semester, but we find that it would be more relevant if this course is undertaken later on in the curriculum. This course should be the opportunity for students to apply in the real world the theoretical knowledge gained in class. In this course, students should learn about the methodology of doing field work when studying the benthic and the nekton communities. Students should be able to apply these techniques in a practical research, which would lead to produce a scientific report at the end of the course.     I = Introduced, D = Demonstrated, M = Mastery at a level appropriate for graduation. | | | | |
| **Program Courses and Enrollment** | | | | |
| This section lists courses offered in the program, including number of sections, course enrollment, section fill rates, and redundancy of courses across the institution. | | | | |
| Fall 2016   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Courses | Semester | Sections | Course Enrollment | Course Redundancy | | MR 120 | Fall 2017 | 1 | 16 | No | | MR 201 | - | - | - | - | | MR 210 | - | - | - | - | | MR 230 | Fall 2017 | 1 | 11 | No | | MR 240 | Fall 2017 | 1 | 19 | No | | MR 250 | - | - | - | - | | MR 254 | Fall 2017 | 1 | 6 | No |   Spring 2017   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Courses | Semester | Sections | Course Enrollment | Course Redundancy | | MR 120 | Spring 2017 | 2 | 21 | Yes | | MR 201 | Spring 2017 | 1 | 10 | No | | MR 210 | Spring 2017 | 1 | 7 | No | | MR 230 | - | - | - | - | | MR 240 | Spring 2017 | 1 | 8 | No | | MR 250 | Spring 2017 | 1 | 6 | No | | MR 254 | Spring 2017 | 1 | 8 | No |   Fall 2017   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Courses | Semester | Sections | Course Enrollment | Course Redundancy | | MR 120 | Fall 2017 | 1 | 18 | No | | MR 201 | - | - | - | - | | MR 210 | - | - | - | - | | MR 230 | Fall 2017 | 1 | 17 | No | | MR 240 | Fall 2017 | 2 | 24 | Yes | | MR 250 | - | - | - | - | | MR 254 | Fall 2017 | 1 | 10 | No |   Spring 2018   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Courses | Semester | Sections | Course Enrollment | Course Redundancy | | MR 120 | Spring 2018 | 1 | 13 | No | | MR 201 | Spring 2018 | 1 | 18 | No | | MR 210 | Spring 2018 | 1 | 24 | No | | MR 230 | - | - | - | - | | MR 240 | Spring 2018 | 1 | 16 | No | | MR 250 | Spring 2018 | 1 | 23 | No | | MR 254 | Spring 2018 | 1 | 9 | No | | | | | |
| **Program Faculty** | | | | |
| This section reports the faculty of the program, including full-time and part-time faculty. The degrees held and rank are provided for the full-time and part-time faculty. | | | | |
| Currently, there are only two full-time faculty members teaching marine science program and also teach other courses for the Division of Natural Sciences and Mathematics. Each instructor has varied backgrounds and experiences within the marine sciences, and each is utilized to teach courses most reflective of those backgrounds. Additionally, members serve as advisors to marine science majors as well as other majors and participate in both college and community services.  **David Brian Lynch**  A.A.S., Fisheries and Wildlife, SUNY Cobleskill, USA  B.S., Animal Science, SUNY Cobleskill, USA  M.S., Biological Sciences, North East Louisiana, USA    **Peltin Olter-Pelep**  A.S., Liberal Arts, College of Micronesia, PNI  3rd Yr Certificate, Teacher Preparations, College of Micronesia, FSM  B.A., Biological Sciences, University of Hawaii at Manoa, USA  M.S., Tropical Conservation Biology and Environmental Biology, University of Hawaii at Hilo, USA | | | | |
| **Program Indicators** | | | | |
| This section provides the data for analyzing the extent to which the program has achieved the established outcomes and criteria. This is the most important part of the program review. The data that will be collected and evaluated are the following: | | | | |
| Assessment of course student learning outcomes of program courses | **MR 120-Marine Biology**   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Term** | **No. of Students** | **SLO 1** | **SLO 2** | **SLO 3** | **SLO 4** | **SLO 5** | **SLO 6** | **SLO 7** | | **Fall 2016** | 16 | 13 | 16 | 16 | 14 | 14 | 16 | 15 | | **Spring 2017** | 12 | 9 | 11 | 10 | NA | 9 | 11 | 8 | | **Fall 2017** | 18 | 15 | 14 | 14 | 12 | 12 | 13 | 14 | | **Spring 2018** | 13 | 11 | 10 | 11 | 7 | 12 | 11 | 10 |     **MR 201-Aquaculture**   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Term** | **No. of Students** | **SLO 1** | **SLO 2** | **SLO 3** | **SLO 4** | **SLO 5** | **SLO 6** | | **Fall 2016** | - | - | - | - | - | - | - | | **Spring 2017** | 9 | 9 | 9 | 9 | 9 | 9 | 10 | | **Fall 2017** | - | - | - | - | - | - | - | | **Spring 2018** | 18 | 17 | 16 | 15 | 18 | 17 | 17 |     **MR 210-Ecology**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Term** | **No. of Students** | **SLO 1** | **SLO 2** | **SLO 3** | **SLO 4** | **SLO 5** | **SLO 6** | **SLO 7** | **SLO 8** | | **Fall 2016** | - | - | - | - | - | - | - | - | - | | **Spring 2017** | 7 | 6 | 6 | 6 | 5 | 6 | 5 | 6 | 6 | | **Fall 2017** | - | - | - | - | - | - | - | - | - | | **Spring 2018** | 24 | 20 | 19 | 18 | 17 | 20 | 18 | 20 | 21 |     **MR 240-Oceanography**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Term** | **No. of Students** | **SLO 1** | **SLO 2** | **SLO 3** | **SLO 4** | **SLO 5** | **SLO 6** | **SLO 7** | **SLO 8** | | **Fall 2016** | 19 | 15 | 14 | 15 | 16 | 15 | 16 | 16 | 15 | | **Spring 2017** | 9 | 6 | 6 | 6 | 7 | 5 | 5 | 5 | 5 | | **Fall 2017** | 24 | NA | 19 | 18 | 20 | 20 | 21 | 16 | 18 | | **Spring 2018** | 16 | 12 | 12 | 13 | 12 | 13 | 14 | 13 | 12 |   **MR 250-Fisheries Biology and Management**   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Term** | **No. of Students** | **SLO 1** | **SLO 2** | **SLO 3** | **SLO 4** | **SLO 5** | **SLO 6** | **SLO 7** | **SLO 8** | **SLO 9** | **SLO 10** | | **Fall 2016** | - | - | - | - | - | - | - | - | - | - | - | | **Spring 2017** | 6 | 6 | 6 | 4 | 4 | 5 | 5 | 5 | 5 | 3 | 4 | | **Fall 2017** | - | - | - | - | - | - | - | - | - | - | - | | **Spring 2018** | 23 | 20 | 21 | 17 | 18 | 20 | 13 | 20 | 19 | 16 | 17 |   **MR 254-Marine Biology Field Studies**   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Term** | **No. of Students** | **SLO 1** | **SLO 2** | **SLO 3** | **SLO 4** | **SLO 5** | **SLO 6** | | **Fall 2016** | 6 | 6 | 6 | 6 | 6 | 6 | 6 | | **Spring 2017** | 8 | NA | NA | NA | 6 | NA | NA | | **Fall 2017** | 10 | 8 | 10 | 10 | 7 | 8 | 7 | | **Spring 2018** | 9 | 8 | 8 | 9 | 6 | 7 | 8 | | | | |
| Assessment of program student learning outcomes | **Program Student Learning Outcomes (PSLOs) AY 2016-2017**    At the completion of the **Marine Science Program**, the student will be able to:   1. Demonstrate fundamental knowledge of geological, geomorphological, physical, chemical, and biological oceanography. 2. Apply fundamental knowledge of marine sciences towards identifying and critically analyzing and outlining potential solutions for local, regional and global problems relating to marine systems. 3. Apply the scientific process to formulate hypotheses, design experiments, and collect and analyze data from which valid scientific conclusions are drawn. 4. Communicate effectively, in written and oral forms, utilizing the language and concepts of marine science.   The above matrix shows the relation between PSLOs, the courses in a program and the expected level of mastery.  **PSLO Assessment Report Summary**    **What we looked at:**  The Marine Science Program assessment focused on all four MS\_PSLO during the academic year 2016-2017 (Fall 2016 & Spring 2017).  **What we found:**  ***MS\_PSLO\_1: Demonstrate fundamental knowledge of geological, geomorphological, physical, chemical, and biological oceanography.*** Fall 2016– Marine Biology (MR120)   * Students who took and completed the course obtained an overall average of at least 87%, exceeding the targeted score of 70% for both SLOs for cellular structure and functions as well as classifying various marine life forms.   Fall 2016 – Oceanography (MR240)   * Students who took and completed this course exceeded the targeted score of 70% (at least 74%) on the measured SLOs. We focused more on the SLO 8 (lab report) for it broadly covers geological, geomorphological, physical, chemical and biological oceanography. For this SLO, students exceeded the targeted score of 70%.   ***MS\_PSLO\_2: Apply fundamental knowledge of marine sciences towards identifying and critically analyzing and outlining potential solutions for local, regional and global problems relating to marine systems.*** Spring 2017 – Fisheries Biology and Management (MR250)   * Students who took and completed the MR 250 exceeded the targeted score of 70% on the measured SLOs except for SLO 9 (state the major biological parameters used in stock assessment, notably: stock abundance, fishing effort, catch rate, growth, recruitment, mortality, and yield) and SLO 10 (list and describe the needs for fisheries management, compare and contrast the management tools that can be adopted in assuring a sustainable development of the exploited resource) where they scored 58% and 63%. Consequently, more in depth explanations need to be given in class on these two SLOs in order for the students to demonstrate the required level of mastery for an associate degree.   ***MS\_PSLO\_3: Apply the scientific process to formulate hypotheses, design experiments, and collect and analyze data from which valid scientific conclusions are drawn.*** Fall 2016 & Spring 2017 – Oceanography (MR240)   * Students who took and completed the MR 240 course in both Fall 2016 and Spring 2017 where writing an extensive report on the water mixing pattern of the Dausokele estuary as a research project is required exceeded the targeted score of 70% on the measured SLO. Consequently, they demonstrated the required level of mastery for an associate degree for the MS\_PSLO\_3.   ***MS\_PSLO\_4: Communicate effectively, in written and oral forms, utilizing the language and concepts of marine science.*** Fall 2016 & Spring 2017 – Oceanography (MR240)   * Students who took and completed the course in both semesters pertaining to writing an extensive report on the water mixing pattern of the Dausokele estuary exceeded the targeted score of 70% on the measured SLO. Consequently, they demonstrated the required level of mastery for an associate degree for the MS\_PSLO\_4.   Spring 2018 – Marine Biology Field Study (MR254)   * Students who completed this course were required to complete and report the findings of a coral reef survey they conducted at Nahlap Island in Pohnpei. Eight of the nine students (89%) completed this outcome as measured by a rubric designed to score scientific reporting.   **What we looked at:**  The Marine Science Program assessment focused on just two of the MS\_PSLO during the academic year 2017-2018 (Fall 2017 & Spring 2018).  **What we found:**  ***MS\_PSLO\_1: Demonstrate fundamental knowledge of geological, geomorphological, physical, chemical, and biological oceanography.*** Spring 2018– Marine Biology (MR120)   * Students who took and completed the course obtained an overall average of at least 84%, exceeding the targeted score of 70% for the SLOs for cellular structure and functions as well as classifying various marine life forms (to the levels of Phyla, Class and Family).   Fall 2018 – Oceanography (MR240)   * Students who took and completed this course exceeded the targeted score of 70% (scoring just under 79% on questions relating to the science of Plate Tectonics and Sea-Floor Spreading) as an indicator for this particular SLO. Target was met.   ***MS\_PSLO\_3: Apply the scientific process to formulate hypotheses, design experiments, and collect and analyze data from which valid scientific conclusions are drawn.*** Fall 2017 – Oceanography (MR240)   * Students who completed this course successfully utilized the scientific method to examine data collected during laboratory exercises. Additionally, 18 of 24 students successfully identified the steps involved in scientific methodology and covered on Test 1.   Spring 2018 – Marine Biology Field Study (MR254)   * Students were tasked with completing and reporting a coral reef survey assignment requiring them to collect data in the field, analyze the collected data, and report their findings along with any significant conclusions they came across. While all of the students completed the field aspects of this project (conducting the survey and data collection), only 5 of 9 (55%) successfully completed this project to acceptable analysis and reporting levels. | | | |
| Program enrollment (historical enrollment patterns, student credits by major) | **Table 1. Enrollment by Major and Campus**   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Major** | **Term** | **Total** | **CTEC** | **Chuuk** | **Kosrae** | **National** | **Yap** | | Mar. Sci | Fall 2016 | 66 | 4 | 2 | 8 | 47 | 5 | | Mar. Sci | Spring 2017 | 46 | 2 | 2 | 2 | 37 | 3 | | Mar. Sci | Fall 2017 | 57 | 1 | 0 | 7 | 42 | 7 | | Mar. Sci | Spring 2018 | 57 | 0 | 0 | 8 | 45 | 4 |   **Table 2. Enrollment of the program as compared to total enrollment of National campus**   |  |  |  |  | | --- | --- | --- | --- | | **Term** | **No. of Students Enrolled in Program** | **National campus Enrollment** | **Percentage (%)** | | Fall 2016 | 66 | 919 | 7 | | Spring 2017 | 46 | 818 | 6 | | Fall 2017 | 57 | 928 | 6 | | Spring 2018 | 57 | 831 | 7 |   **Table 3. Credits by Major and Campus**   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Major** | **Term** | **Total** | **CTEC** | **Chuuk** | **Kosrae** | **National** | **Yap** | | Mar. Sci | Fall 2016 | 895 | 34 | 32 | 108 | 669 | 52 | | Mar. Sci | Spring 2017 | 616 | 24 | 27 | 32 | 508 | 25 | | Mar. Sci | Fall 2017 | 807 | 7 | 0 | 62 | 623 | 115 | | Mar. Sci | Spring 2018 | 790 | 0 | 0 | 116 | 624 | 50 |   **Table 4. Credits by Program and Campus**   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Major** | **Term** | **Total** | **CTEC** | **Chuuk** | **Kosrae** | **National** | **Yap** | | Mar. Sci | Fall 2016 | 910 | 34 | 32 | 108 | 669 | 52 | | Mar. Sci | Spring 2017 | 632 | 24 | 27 | 32 | 508 | 25 | | Mar. Sci | Fall 2017 | 807 | 7 | 0 | 62 | 623 | 115 | | Mar. Sci | Spring 2018 | 790 | 0 | 0 | 116 | 624 | 50 | | | | |
| Average class size | **Table 1. Program Sections, Enrollment Ratio and Average Class Size**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Program** | **Term** | **Section** | **Enroll Max** | **Enrollment** | **Enroll Ratio** | **Ave. Class Size** | | Mar. Sci | Fall 2016 | 6 | 108 | 103 | 95.4% | 17.2 | | Mar. Sci | Spring 2017 | 5 | 75 | 72 | 96% | 14.4 | | Mar. Sci | Fall 2017 | 7 | 109 | 60 | 55% | 8.6 | | Mar. Sci | Spring 2018 | 4 | 63 | 52 | 82.5% | 13.0 | | | | |
| Course completion rate | **Table 1. Course Completion Percentage and Withdrawals.**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Program** | **Term** | **Degree** | **No. of Students** | **ABCORP%** | **ABCDORP%** | **W%** | | Mar. Sci | Fall 2016 | AS | 65 | 89.2% | 92.3% | 50.8 | | Mar. Sci | Spring 2017 | AS | 53 | 88.7% | 94.3% | 50.9 | | Mar. Sci | Fall 2017 | AS | 59 | 94.9% | 94.9% | 49.2 | | Mar. Sci | Spring 2018 | AS | 60 | 96.7 | 98.3% | 46.7 | | | | |
| Student retention rate (Fall-to-Fall for two-year programs; Fall-to-Spring for one-year programs) | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **MajorDescription** | **Degree** | **NewStudents Fall 2016** | **Students Spring 2017** | **Students Fall 2017** | **Persistence Spring 2017** | **Retention Fall 2017** | | Marine Science | AS | 22 | 17 | 15 | 78.9% | 63.2% |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **MajorDescription** | **Degree** | **NewStudents Fall 2017** | **Students Spring 2018** | **Students Fall 2018** | **Persistence Spring 2018** | **Retention Fall 2018** | | Marine Science | AS | 11 | 10 | 9 | 90.9% | 81.8% | | | | |
| Graduation rate based on yearly number | |  |  | | --- | --- | | **Term** | **No. of Graduates** | | Fall 2016 | 6 | | Spring 2017 | 6 | | Fall 2017 | 4 | | Spring 2018 | 2 | | Total | 18 | | | | |
| Students seat cost | **Table 1. Student Seat Cost.**   |  |  |  |  | | --- | --- | --- | --- | | **Program** | **Total Credits** | **CPC** | **CPS** | | Marine Science | 64 | $135 | $8,640 |   **CPC- Cost Per Credit; CPS- Cost Per Student** | | | |
| Cost of duplicate or redundant courses, programs or services | **None** | | | |
| Students’ satisfaction rate | **No Data** | | | |
| Alumni data | **Not Data** | | | |
| Employment data and employer feedback (employer survey) | **No Data** | | | |
| Program added or cancelled at nearby regional institutions (PCC, GCC, Hawaii schools, UOG, CMI, NMC) | **Not Applicable** | | | |
| Transfer rate | **No Data** | | | |
| **Analysis** | | | | |
| **Findings**  This section provides discussion of information discovered as a result of the evaluation such as problems or concerns with the program and what part of the program is working well and meeting expectation. | | * There was a significant increase in the MR 210 and MR 250 course enrollment between Spring 2017 and Spring 2018. * In terms of program enrollment as compared to the total enrollment of National campus indicated that roughly 8 percent are Marine science majors. * Enrollment ratio and average class size were significantly lower in Fall 2017. Similarly, retention rate is lower in Fall 2017. * In terms of graduates, only 2 marine science students graduated in Spring 2018. | | |
| **Recommendations**  This section provides recommendations from the program on what to do to improve or enhance the quality of program and course learning outcomes as well as program goals and objectives. This section should also include suggestions that describe how the program might be able to create opportunities for a better program in the future. Some examples are exploring alternate delivery mechanisms, forming external partnerships, or realigning with other programs. | | * Faculty members need to collaborate to compile collective data for future references. * Marine science advisors need to work closely with students to ensure students register for appropriate courses in order to graduate accordingly. | | |

*Form is newly revised. Previous Program Reviews are available at* [*http://wiki.comfsm.fm/Academic\_Programs*](http://wiki.comfsm.fm/Academic_Programs)

*Micronesian Studies is a very good example. Program review checklist is on the next page.*