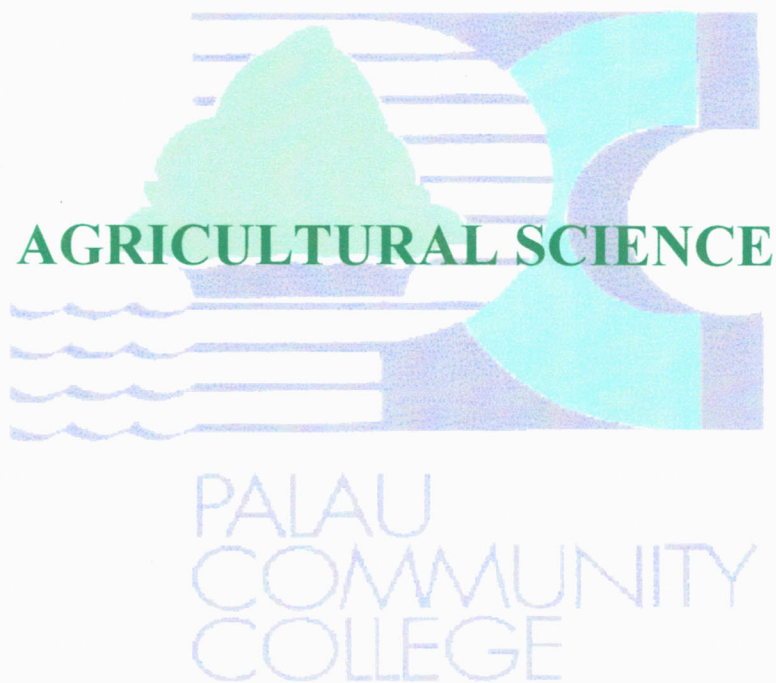


**PALAU COMMUNITY COLLEGE**  
**SCHOOL OF ARTS AND SCIENCES**

**PROGRAM REVIEW AND ASSESSMENT REPORT**



Assessment Period: Fall 2005 to Summer 2009

Initiator:

**ALEX M. GACHALIAN**

## PROGRAM/DEPARTMENT REVIEW

**Assessment Period: Fall 2005 to Summer 2009**

### **I. Program Description and History (expand on catalog description)**

This program is designed to equip students with employability skills with technical expertise in crop and animal productions, soil technologies, and scientific knowledge to become future Agriculturists and successful entrepreneurs; or for the pursuit of a higher education in the field of Agricultural Science. It also develops concerns and awareness of the students to protection and preservation of the eco-system.

#### **a. Goals (should be tied to program learning outcomes)**

- To develop future Agricultural Technologists with ethical standards, motivated, and highly committed citizens of their respective communities.
- To promote the concepts of entrepreneurship and enable the graduates to fully participate in the economic stability of the country.
- To provide developmental agricultural skills and technical assistance that is supportive to the national agricultural policy to strengthen the agricultural sectors of their community.
- To develop concern habits and awareness of students in preserving the eco-system.

#### **b. Admission Requirements**

##### For Associate of Applied Science Program:

- Be a high school graduate with a minimum cumulative grade point average of 2.0; or posses a GED certificate with a minimum score of 450 on all 5 sections; or
- Have a cumulative grade point average of 2.0 while a full-time student at PCC.
- Apply and be accepted for admission into the chosen program.

##### For Associate of Science Degree:

- Be a high school graduate with a minimum cumulative grade point average of 2.0; or posses a GED certificate with a minimum score of 450 on all 5 sections; or
- Have a cumulative grade point average of 2.0 while a full-time student at PCC.
- Have a TOEFL score of 500 or better.
- Apply and be accepted for admission into the chosen program.

c. Credit Requirements:

Credit Requirements	Number
General Education courses	16
Required Program Courses	41
Other Required Courses	6

d. History (origin and significant events in its development)

The Agricultural Science courses started upon the expansion of the vocational education of the former Micronesian Occupational Center. It was due to the growing political awareness among the states and republics of Micronesia and because of the commitment of the United States of America to the economic and educational development. Funding permitted the addition of facilities and staff in 1976. In 1974, the Agriculture Program was included in the school's offerings and started with six (6) courses. The program started with a handful of students to demonstrate the importance of agriculture to the growing public of Micronesia, which predominantly depend on its agriculture economy. Despite limited resources, the program has demonstrated to its clientele the basic principles of agriculture by the establishment of crop and animal production projects in where the students were trained to become fully competent individuals in building the agriculture economy of their respective sectors. In May 1978, the Micronesian Occupational Center, a distinctive and complementary part of the College of Micronesia expanded the courses in Agriculture due to the presidency of Kuniwo Nakamura, who initiated the importance of Agriculture, Tourism and Fishery, as the three (3) national occupational priorities, the college has continuously offered relevant agricultural courses that provide technical expertise leading to food security and sustainability for a strong Republic.

On April 2, 1993, Micronesian Occupational College officially became Palau Community College, which offers more technical courses with Agriculture as one of its complements to deliver its goals and objectives to its clientele. Over the years, Agricultural Science has been a regular program offered by the college providing scientific knowledge and technical expertise to students from the island in particular and the whole region of Micronesia in general.

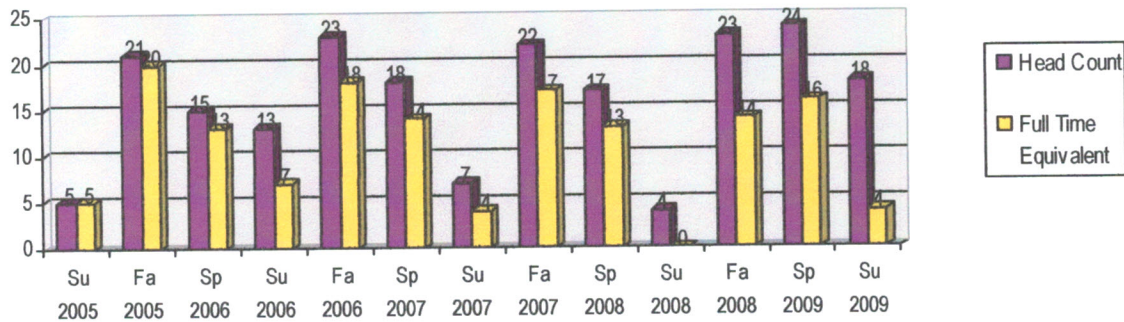
## II. Program Effectiveness

This descriptive statistics in Part A includes enrolment data information for **three-year sequence**, number of degrees granted, graduate information, course analysis, and other quantitative or qualitative information relative to Agricultural program. Part B includes the relationship of the program goals to the college mission, program strength and weaknesses, and recommendations for program improvement.

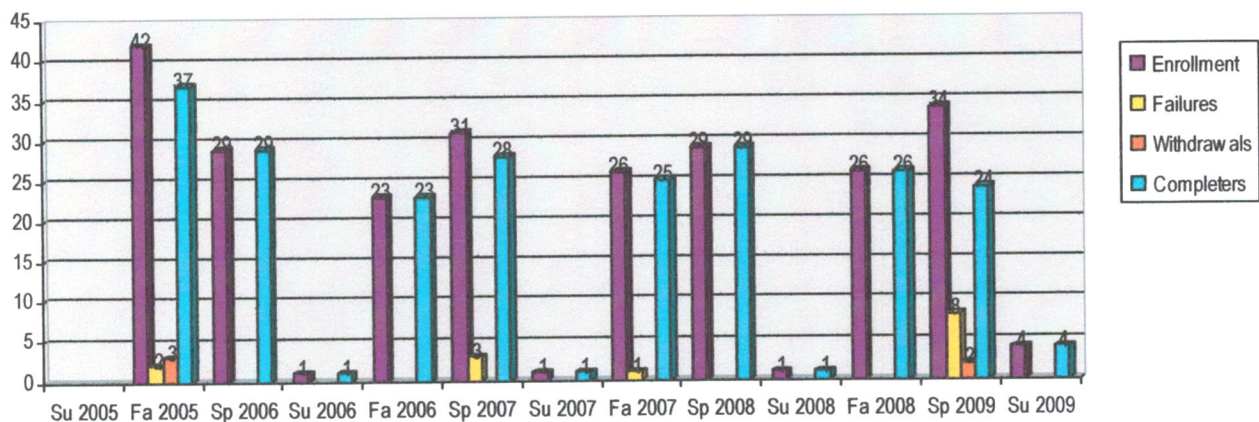


## a. Data Information

**Figure1. Number of Students enrolled in Program**



**Figure 2. Number of Students enrolled, failures, withdrawals, and completers**



**Figure 3. Estimated Direct Instruction Cost**

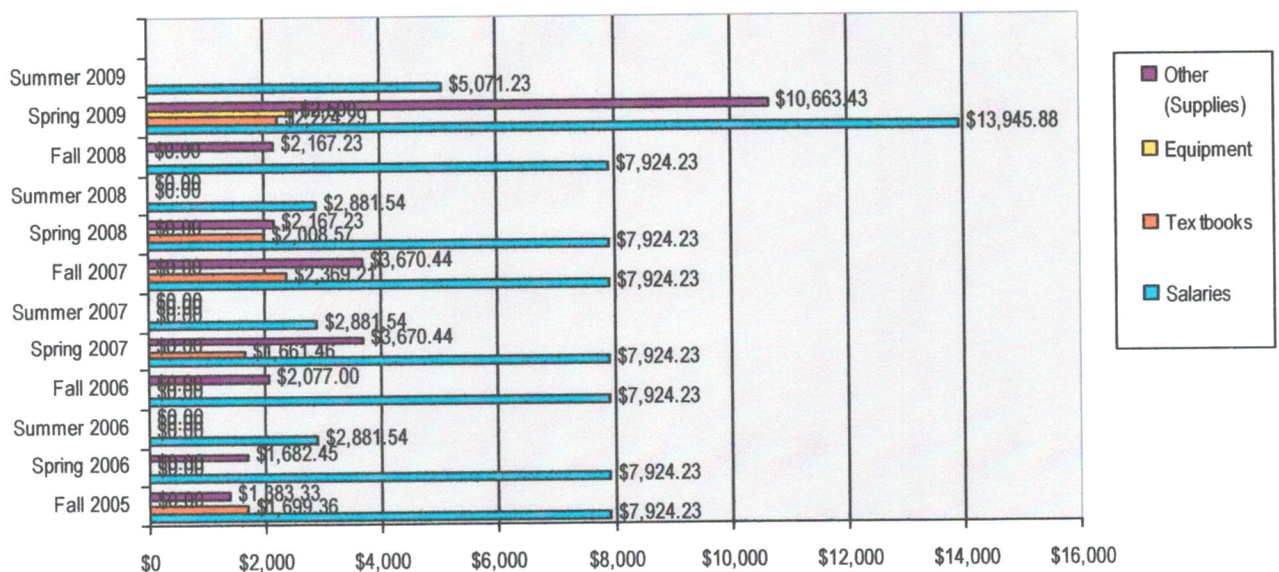




Figure 4. Number Size of Class and Sections Conducted

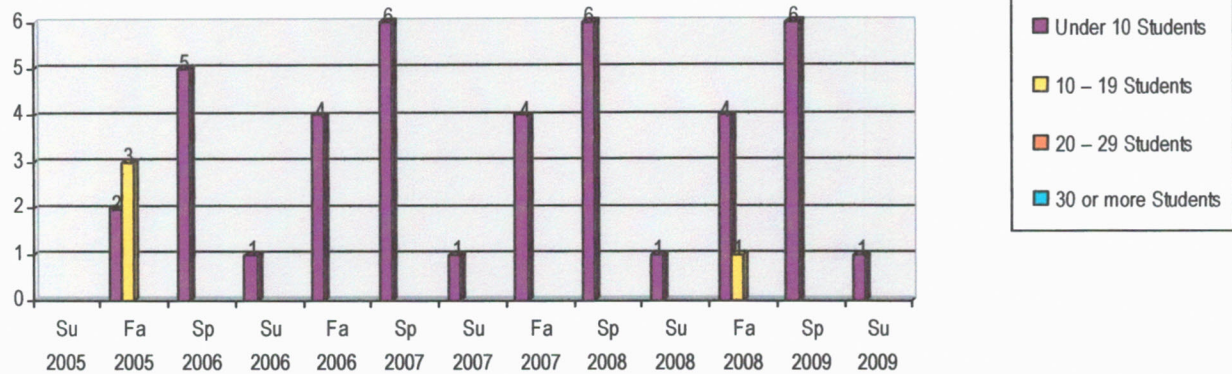


Figure 5. Teaching Loads

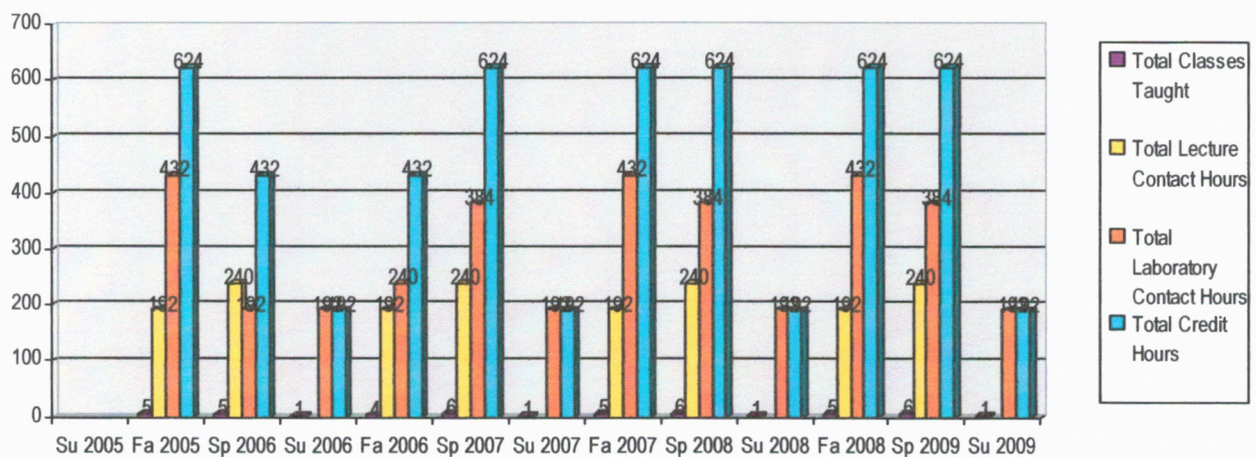


Figure 6. Faculty Head Count

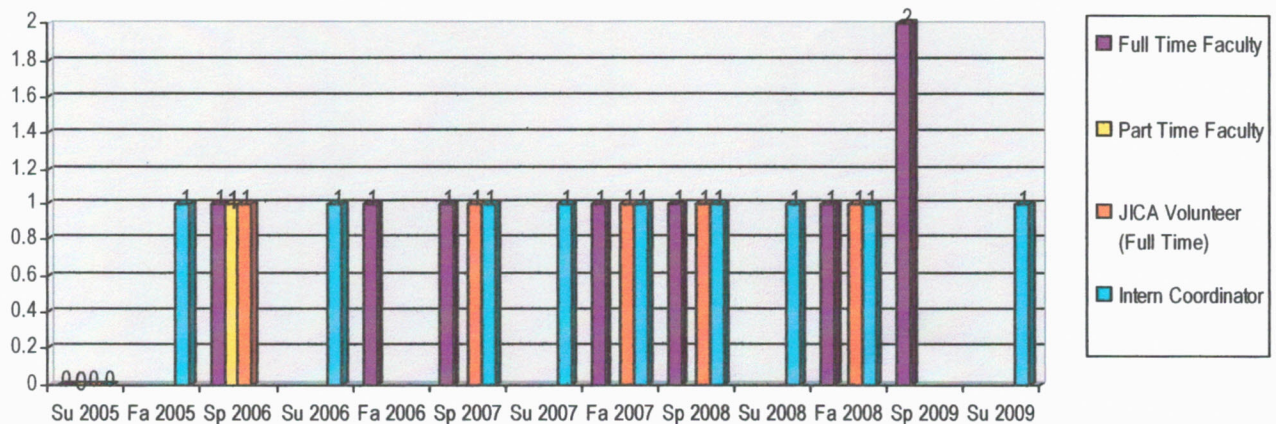


Figure 7. Number of Graduates

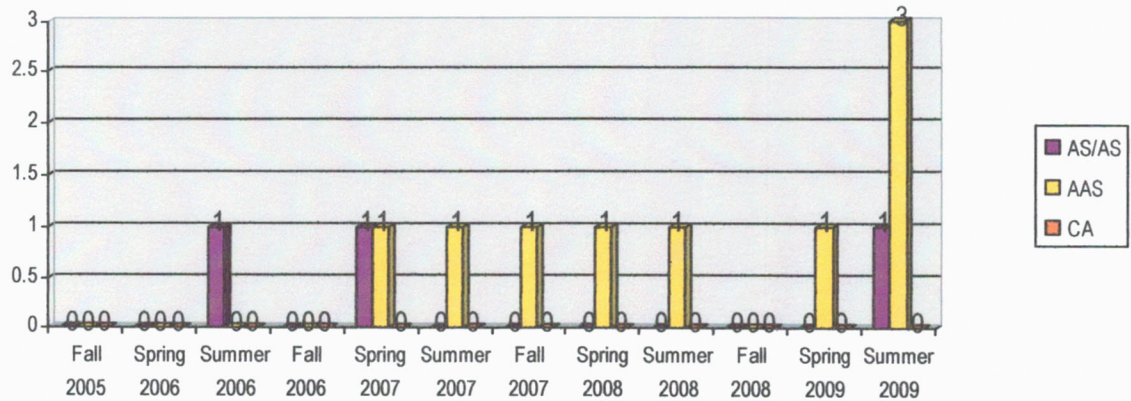


Table 1. Faculty-Student Ratio (program headcount).

Ratio	Summer 2005	Fall 2005	Spring 2006	Summer 2006	Fall 2006	Spring 2007	Summer 2007
Full Time Faculty (F: S)	0:0	1:20.5	1:29	0:0	1:23	1:14.5	0:0
Part Time Faculty (F: S)	0:0	1:1	0:0	1:1	0:0	1:2	1:1

Ratio	Fall 2007	Spring 2008	Spring 2008	Summer 2008	Fall 2008	Spring 2009	Summer 2009
Full Time Faculty (F: S)	1:12.5	1:14	1:14	0:0	1:12.5	1:15.5	0:0
Part Time Faculty (F: S)	1:1	1:1	1:1	1:1	1:1	1:3	1:4

Note: One (1) Full-Time Regular Faculty  
 One (1) Full-Time JICA Volunteer  
 One (1) Part-Time Internship Coordinator



Table 2. Faculty Qualification and Recent Trainings.

Name of Faculty	Degree Completed (Specify Discipline/Year of Completion)	Training Completed in the Past 3 Years
Alex M. Gachalian	PhD, 57 units (Agronomy) MA (Educational Management), 1998 BS in Agriculture, 1978	Proper Farm Waste Disposal Systems
Maho Miyashita (JICA Volunteer)	BS in Agriculture	Para Vet Training
Yoshio Takahasi (JICA Volunteer)	Veterinary Science, 1969	
Michael Fedison	BS in Geology, 1999	

Table 3. Program Course and History of Revision.

Listings of Program courses in the catalog (GE and related required courses included)	OS - offered every semester O1Y - offered once a year O2Y - offered every two years NOF - never offered	Date of last revision
AG 111-Introduction To Tropical Agriculture	O1Y	05/18/2009
AG 122- Soil Technology	O1Y	07/8/2009
AG 123- General Animal Husbandry	O1Y	12/9/2008
AG 124- Plant Science	O1Y	11/6/2009
AG 214- Horticultural Crop Production	O1Y	05/18/2009
AG 215- Poultry and Swine Production	O1Y	05/18/2009
AG 216- Tropical Landscape Horticulture	O1Y	05/18/2009
AG 219- Crop Protection	O1Y	05/18/2009
AG 220- Farm Management	O1Y	05/18/2009
AG 223- Internship	OS	05/18/2009
AG 224- Service Learning		Tabled

Table 4a. Existing Equipment

Listings of Equipment	AQ - Adequate NR - Need Repair NP – Need Replacement	Explanation	Estimated Cost
Merry Tiller	NR	Some of its parts needs replacement	\$ 300.00
Water System	NR/NP	Some water pipes are clogged Some faucets need replacements	\$300.00
Lights and Power outlets	NR/NP	Need to repair and replace the lighting system and install more power outlets	200.00

Table 4b. Needed Equipment

Listings of Equipment	Number of Equipment Needed	Justification	Estimated Cost
Portable Egg Incubator with Egg Turner	1	Needed to hatch chicken eggs and for instructional purposes	\$ 150.00
Digital/Analog Zoom Stereo Microscope	5	For use in dissection and anatomy of plant and animal specimens and in identifying microorganisms	\$ 985.00
7 cu ft Refrigerator	1	For storing chicken eggs, vegetable seeds, and veterinary supplies	\$ 650.00
Merry tiller	1	For use in cultivating the farm	\$ 1, 300.00
Ceiling fans	5	To provide ventilation at the piggery during hot days	\$ 1, 500.00



Table 5. Facilities

Location (Class room, Lab)	AQ – Adequate NP – Need Repair	Explanation	Estimated Cost
2 classrooms	Need Repair	The 2 <sup>nd</sup> year classroom needs a door and repair of the air conditioning unit.	\$500.00
14x16 ft storage building with concrete compost boxes in front	To be constructed	For safekeeping of farm tools and supplies. Compost boxes will be used for decomposing the farm wastes.	\$ 4,000.00
Faculty office at R and D station with office tables and chairs and air condition unit	To be installed	There is no faculty office at R and D station for faculty as work place during off-hours	\$ 2,500.00
Piggery house	Need Repair	Some pig pens partition are broken. Automatic waterers should be installed	\$ 1,000.00
Nursery	Need Repair	The roof needs to be modified into a monitor type to improve its ventilation	\$ 600.00

Table 6. Estimated Budget

Total Cost (Table 4a) Existing Equipment	Total Cost (Table 4b) Needed Equipment	Total Cost (Table 5) Facilities	Total Cost Other Expenses (Farm Supplies)
\$ 800.00	\$ 4,585.00	\$ 7,600.00	\$ 2,000.00
Estimated Overall Total Cost			<b>\$15, 985.00</b>

## b. Program Evaluation

### 1. Program/department SLO's and goals in relation to the mission of the college.

As an open- door for technical skills development and training ground for occupational programs, Agricultural Science courses are designed to meet all the required competencies for future employment of students and become prospective entrepreneurs of their respective communities. The program provides the students with farm expertise and specialized skills in line with the goals of sustainable agriculture as one of the priority programs of the College.

### 2. Program/department major strengths.

- Agricultural Science program produces graduates leading to Crop and Animal Production Technologists.
- Students are trained to be future entrepreneurs and motivated to undertake initiatives to be businessmen that can contribute to national economic stability.
- The program has provided the students concepts and efficient approaches to environment protection.
- Students are trained to be self- reliant and have learned to maximize the utilization of available resources.
- Has qualified faculty with Masters Degree and PhD units to teach the courses of the Program.
- Has a collaborative tie up with the Bureau of Agriculture, Taiwan Technical Mission Farm, and private sectors to enhance the capability skills of students by attending seminars and actual demonstration of farming technologies.

### 3. Program/department major needs for improvement.

- Instructional Support Materials, Tools and Equipments
- Animal Science instructor
- Nursery roof modification and pig pens repair
- Students taking unnecessary courses
- Transportation



4. Recommendations for improving the program/department and correcting identified areas of concern.

- All the needed supplies and instructional materials should be requested before the end of the spring semester and must be prioritized by the school.
- Hire one regular AG instructor specialized in animal science to teach the animal science courses.
- The nursery roof should be modified into a monitor type of roofing to improve its ventilation. Broken partitions of pig pens should also be repaired.
- Advisors and Councilors should advise students to take only the required program courses during enrolment.
- The AG program must have its own vehicles (mini bus and pick up truck) enough to accommodate and transport all students, supplies and materials to the R and D station.

5. In terms of staff development concerns, identify training needs as a program/department and rank them in order of priority.

- Faculty should be allowed to attend international trainings and workshops in agricultural production technologies to build a sustainable agriculture programs.
- Faculty should be allowed to attend training in Multi-media presentations
- Faculty should be encourage and allowed to finish Ph D degrees

6. Address meeting demands for the program through alternate forms of delivery. Including electronic and on site delivery of the program or portions of the program.

- Makes on-site visits on different farms and production sites that expose students to different farming practices.
- Exposes students to actual farm management operations during laboratory periods and allowed them to apply the acquired skills.
- Invites resource speakers from different agencies to discuss relevant topics and demonstrate actual procedures in agricultural technologies.
- Performs power point and video presentations of technical practices in crop and animal productions.
- Have its own poultry, piggery, nursery, and crop production project where students can apply and specialized with their technical skills.

### III. Program Rubrics Assessment

The Agriculture program students will be evaluated to indicate their level of competency using the newly formulated program outcome assessment instrument.

#### a. Program Outcome

At the end of the practicum experience, the student will be rated on the four competencies listed below with the corresponding rating scale. The numerical ratings of 5, 4, 3, 2, and 1 are not intended to represent the traditional school grading system of A, B, C, D and F. The descriptions associated with each of the numbers focus on the level of students' performance for each of the competencies.

1. **Student will develop competent agricultural skills in their commitment to develop their respective agricultural economy.**

Numerical Value	Performance Criteria
5	Student will develop competent agricultural skills in their commitment to develop their respective agricultural economy with 90 %-100% accuracy
4	Student will develop competent agricultural skills in their commitment to develop their respective agricultural economy with 80%-89% accuracy
3	Student will develop competent agricultural skills in their commitment to develop their respective agricultural economy with 70%-79% accuracy
2	Student will develop competent agricultural skills in their commitment to develop their respective agricultural economy with 65%-69% accuracy
1	Student will develop competent agricultural skills in their commitment to develop their respective agricultural economy with 64% and below accuracy

2. **Students will demonstrate scientific knowledge and technical skills of prospective entrepreneurs.**

Numerical Value	Performance Criteria
5	Students will demonstrate scientific knowledge and technical skills of prospective entrepreneurs with 90 %-100% accuracy
4	Students will demonstrate scientific knowledge and technical skills of prospective entrepreneurs with 80%-89% accuracy
3	Students will demonstrate scientific knowledge and technical skills of



	prospective entrepreneurs with 70%-79% accuracy
2	Students will demonstrate scientific knowledge and technical skills of prospective entrepreneurs with 65%-69% accuracy
1	Students will demonstrate scientific knowledge and technical skills of prospective entrepreneurs with 64% and below accuracy

**3. Students will recognize the value and awareness in preserving diversities of the environment and be cognizant to the principles of preservation.**

<b>Numerical Value</b>	<b>Performance Criteria</b>
5	Students will recognize the value and awareness in preserving diversities of the environment and be cognizant to the principles of preservation with 90 %-100% accuracy
4	Students will recognize the value and awareness in preserving diversities of the environment and be cognizant to the principles of preservation with 80%-89% accuracy
3	Students will recognize the value and awareness in preserving diversities of the environment and be cognizant to the principles of preservation with 70%-79% accuracy
2	Students will recognize the value and awareness in preserving diversities of the environment and be cognizant to the principles of preservation with 65%-69% accuracy
1	Students will recognize the value and awareness in preserving diversities of the environment and be cognizant to the principles of preservation with 64% and below accuracy

**4. Students will effectively deliver relevant extension services to their respective communities providing quality services and assistance to the agricultural sectors.**

<b>Numerical Value</b>	<b>Performance Criteria</b>
5	Students will effectively deliver relevant extension services to their respective communities providing quality services and assistance to the agricultural sectors with 90 %-100% accuracy
4	Students will effectively deliver relevant extension services to their respective communities providing quality services and assistance to the agricultural sectors with 80%-89% accuracy

3	Students will effectively deliver relevant extension services to their respective communities providing quality services and assistance to the agricultural sectors with 70%-79% accuracy
2	Students will effectively deliver relevant extension services to their respective communities providing quality services and assistance to the agricultural sectors with 65%-69% accuracy
1	Students will effectively deliver relevant extension services to their respective communities providing quality services and assistance to the agricultural sectors with 64% and below accuracy

#### b. Assessment/Analysis

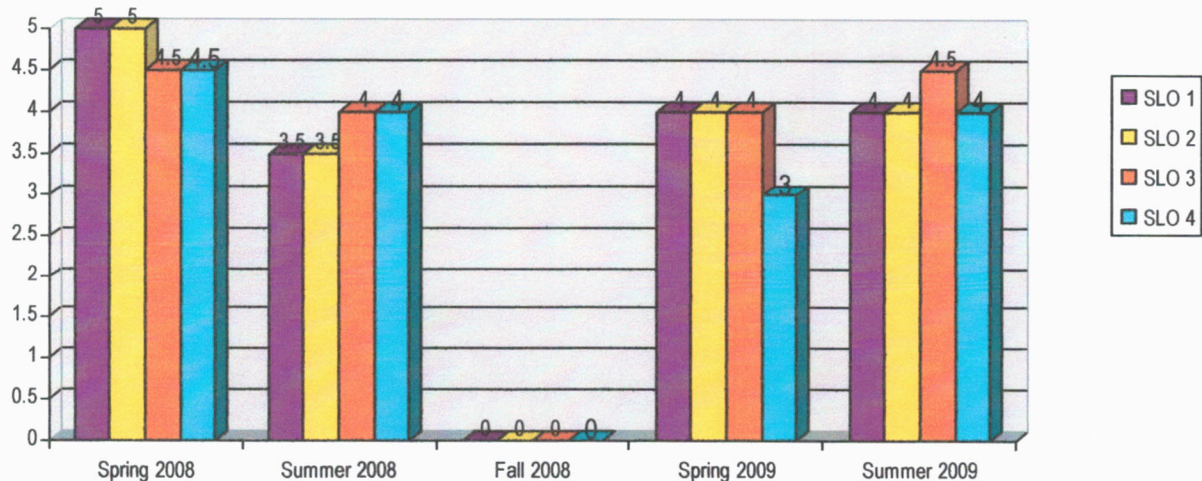
The Agriculture program has a total of 9 candidates for the academic year Spring 2008 to Summer 2009, who undergone the assessment using the newly formulated program outcome assessment instrument. The students were assessed in the following steps:

##### I. Assessor/s evaluates the student performance and achievement on the following:

1. Acquired knowledge
2. Comprehension
3. Application

##### II. Using the program outcomes rubrics, the assessor/s computes the student average point obtained from each of the SLO's.

**Figure 8. Program Outcome Assessment Report**



*Note: No courses offered during summer.*



### III Curriculum Alignment Matrix

Course	Outcome 1	Outcome 2	Outcome 3.	Outcome 4
AG 111	I	D	D	
AG 122			I	M
AG 123	D		M	M
AG 124	D		M	
AG 214	D	M	M	M
AG 215	M	M	M	M
AG 216	D	M	M	M
AG 219	M	M	M	M
AG 220	M	M	M	M
AG 223	M	M	M	M

Legend: I – Introduced

D – Developed & Practiced with Feedback

M – Demonstrated at the Mastery Level Appropriate for Graduation

### IV. Program Action Plan for Improvement

Objective	Timeline	Person Responsible
Request supplies, instructional materials, facilities and equipments	January 11-15, 2010	AG instructor
Hire one regular faculty specialized in animal science	August 2010	Administration
Request to modify the nursery roof to a monitor type of roofing and repair of pig pens partitions	January 11, 2010	AG instructor
Advise students to take only the required courses within the program	January 11-14, 2010	Advisors/Counselors
Provide one mini- bus and pick up truck to transport students and supplies and materials to R and D station	August 16, 2010	Administration