

SUBSTANTIVE CHANGE PROPOSAL

**ASSOCIATE OF SCIENCE IN GENERAL AGRICULTURE**

College of Micronesia – FSM  
P.O. Box 159 – KOLONIA, Pohnpei, FM 96941

September 16, 2008

Spensin James, President

<b>Table of Contents</b>	page
A. Description of the proposed change and reasons for it -----	2
B. Description of the program to be offered -----	4
C. Description of the planning process which lead to the request for change -----	6
D. Evidence of human, administrative, financial and physical resources and processes to initiate, maintain and monitor the change and to assure that the activities undertaken are accomplished with acceptable quality -----	7
E. Evidence of all necessary internal and external approvals -----	9
F. Evidence that each Eligibility Requirement will still be fulfilled after the change -----	10
G. Evidence that accreditation standard will still be fulfilled after the change and that all relevant Commission policies are addressed -----	12

## Appendices

- Appendix A.1: Conservation Society of Kosrae Support
- Appendix A.2: The Nature Conservancy/ Micronesia Support
- Appendix A.3: Kosrae Island Resource Management Authority Support
- Appendix B.1: Authorizations
- Appendix C.1: COM-FSM Faculty, staff and in country experts
- Appendix C.2: Human Resource Profile
- Appendix D.1: COM-FSM Kosrae Campus Bibliography Report
- Appendix E.1: Kosrae Campus photographs
- Appendix F.1: Organizational chart

## A. Description of the Proposed Change and the Reasons for It

The College of Micronesia-FSM is proposing to make substantive changes to the existing Associate of Science in General Agriculture program which is currently being offered at the National Campus. There are two major components of the proposed change:

- 1) Change of Degree name to Associate of Science in Agriculture and Natural Resources Management with a resulting change in curriculum to include a stronger mathematics and natural science-based background starting Spring 2009; and
- 2) Extend and include the program as a degree offering of the Kosrae Campus in addition to the National Campus starting Spring 2009.

The program was initially created in 1983 with support from the COM Land Grant Program and was intended to prepare agriculture graduates who are employable or capable of succeeding in transferring into four-year institutions as well as providing continuing education for in-service state agriculture extension service employees and secondary agriculture teachers.

While agriculture, fisheries and tourism remain as the FSM's three most important sectors, these have been underperforming as reported in the Asian Development Bank (ADB) Economic Report for 2006. In particular, the agriculture sector's mission statement is to "*...provide (i) food security, cash income, and healthy livelihood; and (ii) opportunities for domestic and export markets, while promoting environmentally sustainable production within a stable and consistent policy framework...*" Nevertheless, the ADB reports that the sector over the past 20 years has been typified by a lack of consistent vision and expensive failed investments. There has been a lack of interest of agriculture as a career as evidenced by the recent closure of the Pohnpei Agriculture and Trade School (PATS). Likewise an internal review of agriculture enrollment data for COM-FSM in 2006 showed only a 0.5% enrollment rate.

After a 2006 meeting involving COM-FSM and stakeholders in agriculture and natural resources in the FSM, the following issues came to light:

- 1) A human resource survey conducted by COM-FSM in 2006 showed that there is a dire lack of qualified staff involved in agriculture and natural resources management, particularly those who hold BS/BA degrees. The Kosrae Campus has been offering the 1-year Certificate of Achievement in Agriculture and Food Technology since 2000 and has successfully placed its graduates in the state agricultural extension and Land Grant agencies, however, interviews with local agriculture administrators show that there is a need to upgrade these graduates to at least an Associate degree level in order to qualify for several bilateral scholarships like AusAid.
- 2) There is only one local FSM citizen suitably-qualified (with at least a master's degree) in agriculture who is now serving as a faculty member. COM-FSM and the nation rely on expatriates for expertise in agriculture and natural resource management.
- 3) When asked about why there is a low enrollment rate, stakeholders at the meeting revealed that there is an apparent "stigma" attached to "agriculture" as high schools do not encourage their better than average students to take up such courses and recommend it to students who perform below par.

Therefore, the revised program reflects the broader scope that links agriculture with natural resources management and would appeal to prospective students with strong interests in agriculture, natural

resources, environment and related fields. It also focuses on sustainable systems as specified in the agriculture sector mission statement of the FSM.

The expansion of the program to Kosrae Campus builds on the success of an existing vocational program that has produced extension agents for the state. It has existing staff and facilities that can be used to support an associate degree program and is intended to serve as a means for upgrading manpower in the agriculture and natural resources agencies and non-governmental institutions to at least an associate degree level.

This proposal builds on the COM-FSM mission to be committed to assisting in the development of the FSM by providing academic, career and technical educational opportunities for student learning, specifically in areas of food production and natural resources management. This proposal is supported by the current Micronesian authorities in agriculture, botany, and conservation as noted in appendices A.1, A.2, and A.3.

## B. Description of the Educational Program to be Offered

The program has the following learning objectives:

Students will be able to:

- 1) Acquire fundamental concepts and principles of land resources focusing on development and production in a sustainable manner appropriate to Micronesia;
- 2) Demonstrate basic competencies in the management of land resources and food production;
- 3) Acquire basic skills, knowledge and attitude to manage a sustainable food production enterprise or qualify for entry-level employment in a land resource management-related agency; and,
- 4) Acquire a sound scientific background that will allow transfer to a higher degree program related to land resources and food systems.

The following curriculum revisions are proposed:

### General Education Core:

English (9 credits) NO CHANGE

EN 110 Advanced Reading (3)

EN 120a Advanced Writing I (3)

EN 120b Advanced Writing II (3)

Mathematics (3 credits)

MS 100 College Algebra (3)

- currently Any 100 level or above Mathematics course

- MS 100 is the prerequisite for MS 150 (Intro to Statistics) which will become a major course

Natural Science (7 credits)

SC 120 Biology with Lab (4)

- currently any science course with lab

- SC 120 is a prerequisite for SC 250 (General Botany ( with Lab) which is a major course

And one from:

SC 101 Health Science (3)

SC 110 Introduction to Ecology (3)

SC 111 Environmental Studies (3)

SC 112 Introduction to Human Nutrition (3)

- currently a non-lab science, or AG 101 (Intro to Agriculture)

Social Science (3 credits) NO CHANGE

SS 150 History of Micronesia (3)

Exercise and Sport Science (1 credit) NO CHANGE

Any ESS course

Computer Applications (3 credits) NO CHANGE

CA 100 Computer Applications (3)

Humanities (3 credits) NO CHANGE

Any course in Art, Music, History, Literature, SS 195 or Language may be taken

**General Education Core Sub-Total: 29 credits (NO CHANGE IN NUMBER OF CREDITS)**

## Major Requirements:

### Agriculture (19 credits)

NO CHANGE:

AG 110 Crop Production with Lab (4)  
AG 140 Principles of Animal Science with Lab (4)  
AG 290 Agriculture Project Management (3)

### REVISION PROPOSED:

AG 101 Introduction to Agriculture (4)  
- currently AG 101 is 3 credits; 1-credit laboratory component will be added to align with University of Guam articulation.  
AG 299 Directed Field Experience (4)  
- currently AG 299 is 1 credit for 3 hrs weekly; propose to 12 hrs weekly for 4 credits

### COURSES TO BE DELETED

AG 252 Agricultural Extension (3)  
AG 270 Principles of Agricultural Engineering (3)  
- these courses are deemed to be more appropriate for a 4-year BS program

Natural Science (14 credits)

NO CHANGE:

SC 250 General Botany with Lab (4) (prerequisite SC 120 Biology)  
COURSES TO BE ADDED (EXISTING IN COM-FSM)  
SC 230 Introduction to Chemistry with Lab (4) (prerequisite MS 098)  
SC/SS 115 Ethnobotany (3) (prerequisite ESL 089)  
MS 150 Introduction to Statistics (3) (prerequisite MS 100)

Deleted as Required Major Courses but Retained as Degree Electives (3-4 credits)

#### *Business*

BU 101 Introduction to Business (3) (prerequisite ESL 089)  
Economics  
EC 220 Microeconomics (3) (prerequisite MS 098, ESL 089)

Additional Choices of Degree Electives

#### *Media Studies*

MM 224 Multimedia Design (3) (prerequisite CA 100 or permission)

#### *Agriculture*

AG 280 Processing of Agricultural Food Products (3) (proposed course)  
AG 291 Selected Topics in Land Resources and Food Systems (1-2) (proposed course, may be repeated twice provided topic is different)

#### *Marine Science*

MR 120 Marine Biology with Lab (4) (prerequisite ESL 089)  
MR 201 Aquaculture with Lab (4) (prerequisite MR 120)

#### *Information Systems*

IS 120 Geographic Information Systems (3)

**Sub-Total: Major Course Requirements: 36-37 credits**

**Total Program Requirements: 65-66 credits**

Implementation of this proposed program will not significantly impact on the quality of instruction, access to instructional resources and other student services primarily because these resources are already in place and are operational.

### **C. Description of the Planning Process Which Led to the Request for Change**

This planned change meets the College's mission statement by providing academic, career and technical educational opportunities for student learning. It also will provide manpower support for the agriculture sector consistent with the Federated States of Micronesia's Agriculture Strategic Goal 1 of having a well resourced and properly focused agriculture sector consistently operating within a stable policy framework and Goal 4 of promoting environmentally sound and sustainable production.

Two events prompted a meeting called and held in Pohnpei in late September 2006. The participants included COM-FSM administrators, faculty members, extension staff, and stakeholders in agriculture and natural resources within Micronesia. One event that prompted the call for the meeting was the closing of the Pohnpei Agriculture and Trades School which for years was the feeder high school for students pursuing careers and degrees in agriculture. The second event was a program evaluation of the national campus AS in Agriculture program. The evaluation illustrated the dismal enrollment and completion rates. This meeting was held to address the dismal performance of agriculture and how education could be improved to address this issue.

Stakeholders included staff from both government and NGO agencies dealing with natural resources conservation and management such as the Conservation Society of Pohnpei, FSM Quarantine, the Task Force on Invasive Species, The Nature Conservancy-Micronesia and were on hand to provide input on program changes and their current workforce needs.

The issue of lack of qualified staff in agriculture and natural resources management in the FSM was highlighted during the meeting. This is compounded by the fact that several of local suitably qualified FSM citizens are approaching retirement age. This was supported by a human resource survey conducted by the Kosrae Campus in Kosrae which showed that 40% of the total agriculture and natural resource staff of the state hold only 1-year vocational certificates and 50% of the current staffing will reach retirement age within the next 10 years. The education sector depends on expatriate faculty and scientists to support education, research and extension in these fields.

As a result, the educators and stakeholders decided to revise the program to address the dismal image of agriculture as a career choice and at the same time address the problem of students with poor grounding in science and mathematics. Micronesia, because of its size is one area where science directly affects the lives of its residents. Agriculture and natural resource issues like sustainable food production, climate change, and land and water resource management all have a bearing on the daily lives of its citizens. Thus, the proposed changes would integrate these concerns in the providing of education to its students.

The proposed program changes followed college policies and procedures. They were circulated among COM-FSM program and curriculum committees as well as stakeholders in agriculture and natural resources for comments and suggestions. The program modification was reviewed by the curriculum committee and the cabinet prior to seeking board approval. The proposed changes were submitted to the COM-FSM board as an action item for the March 2008 meeting and were approved as noted in the curriculum minutes for program approval and for name approval, cabinet minutes, copy of board directive, and copy of approved board directives from March 2008 meeting (appendix B.1).

**D. Evidence of Human, Administrative, Financial, and Physical Resources and process to Initiate, Maintain, and Monitor the Change and to assure the activities undertaken are accomplished with acceptable quality**

Both the National and Kosrae Campuses each have existing full-time agriculture instructors with master's degrees. In addition, they are supplemented by Cooperative Research and Extension (CRE) staff who can teach part-time. CRE staff based in Pohnpei has master-level degrees in animal science and international agricultural development and the researcher based at the Kosrae Campus has a PhD in botany. In addition, the existing mathematics and science faculty based on the National and Kosrae campuses will be able to teach the required natural science and mathematics courses.

Pohnpei State hosts the nation's capital. Various national, regional and international agencies and organizations with activities related to agriculture, conservation and natural resources management have offices located on Pohnpei. This provides a pool of experts to call upon as technical assistants, guest lecturers, and potential part time faculty.

The college also is a member of CariPac, a consortium comprised of the group of US affiliated insular area colleges in the Pacific and Caribbean with USDA Land Grant college status. This group includes the University of Guam, College of the Northern Marianas Islands, Palau Community College, College of the Marshall Islands, American Samoa Community College, University of Puerto Rico, and University of the Virgin Islands. COM-FSM is collaborating with the CariPac members to share curriculum, courses, and faculty expertise.

The following examples illustrate how the COM-FSM program is being supported and enhanced through CariPac. Two food handling related courses developed by the faculty at the University of Puerto Rico have been distributed to be shared by CariPac members. In summer of 2008 a COM-FSM student and staff completed an internship at the University of Puerto Rico. The dean of the college of Science and Tropical Agriculture from University of Guam also visited COM-FSM in June 2008 as part of the CariPac initiative. He met with COM-FSM faculty and CRE staff to provide guidance to agriculture faculty who are redesigning AG 101 (Introduction to Agriculture) to a 4 credit lab course deliverable through distance education. COM-FSM will seek to also share our faculty expertise and unique courses such as ethno botany with our sister campuses and the CariPac members.

During the summer session, agriculture faculty members from Pohnpei and Kosrae met to redesign some of the agriculture classes for distance learning as well as laid the groundwork for the reviving the certificate program in Agriculture & Food Technology in the Pohnpei State Campus. Enrollment in the certificate program for Fall 08 semester was encouraging with 8 at Pohnpei Campus and 23 at Kosrae Campus. Some of these students will eventually join the AS degree program.

While the agriculture faculty and programs at the COM-FSM are small in scale, they have access to a rich pool of internal and external expertise. FSM hosts expert offices and experts from regional organizations such as the South Pacific Community (SPC), Western and Central Pacific Fisheries Commission (WCPFC), South Pacific Regional Environmental Program, among others. Additionally, through the CariPac consortium partners, the college has a wider resource network of professionals, curriculum resources, and inters institutional opportunities to support and enhance the quality of our COM-FSM agriculture and natural resource programs.

A listing of the COM-FSM faculty members and staff and in country experts and a survey of profiles of experts in Kosrae are attached as Appendices C.1 and C.2 respectively.

**Administrative-** Existing administrative policies and procedures guiding the implementation and evaluation of academic programs apply to the proposed modified program and the extension of the program to Kosrae campus. This program like all other academic programs at the college is monitored by the office of the vice president for instructional affairs with assistance from the director of academic programs and the director of vocational, continuing and community education. They also provide training and guidance in assessing student learning outcomes and program effectiveness. At the state campus level, the Kosrae campus director and instructional coordinator supervise the day to day implementation and supervision of the program.

### **Financial**

For the program at the national campus site adequate funding has been incorporated in the annual division budget. Kosrae campus in anticipation of having the associate degree program originally planned for Fall 08 included an additional full time agriculture instructor position in their FY 08 budget. This second agriculture faculty position was approved. Additional funding for part time instructors is also available as needed for the program at both campuses.

The agriculture programs at the college also benefits from funding provided from a special grant program under the US Department of Agriculture (USDA) Cooperative Research, Education, and Extension Service (CSREES) program. COM-FSM has “land grant” institution status and is also classified as an insular land grant college. As such the college agriculture program receives funding from the “Resident Instruction Grants Program for Institutions of Higher Education in Insular Areas” This is a non competitive grant designed to strengthen the capacity of IHE in the Insular Areas (the US affiliated Pacific insular area along with the Virgin Islands and Puerto Rico) to carry out resident instruction, curriculum, and teaching programs in agriculture, food science and natural resources. To date COM-FSM has been awarded a total of \$140, 588 for FY 2005-2008. This funding is currently being used to support recruitment activities, curriculum enhancement, and development of infrastructure for distance learning instructional delivery systems across all COM-FSM campuses. A continuation grant proposal for \$78,000 for FY 09 was recently submitted. Grant funds are being used to procure distance education software and equipment, redesign and enhance curriculum, conduct recruitment, and to procure scientific equipment and tools and library resources. Funding to provide opportunities for staff development and student internships to the other CariPac colleges is also included.

### **Physical Resources**

Both the National and Kosrae campuses have existing crop and swine production and tissue culture facilities which are used as field laboratories for associate and certificate courses. Pohnpei Campus hosts a unique ethno- botanical garden featuring indigenous traditional medicinal trees and plants. The Kosrae campus is also negotiating with the state government of Kosrae for additional land to further increase the area. In addition, both campuses have strong ties with private farms, non-governmental and governmental institutions that allow farm visits and internships to enhance the student learning experience. Existing classrooms and labs are available for the required math and science courses. [See appendix E.1]

## **E. Evidence of All Necessary Internal and External Approvals**

For a program revision to be implemented at the College of Micronesia-FSM, the following approvals are required and secured for this program: [See appendix B.1]

- Curriculum Committee for review of program application analysis, design and course descriptions and recommendation for approval to Cabinet
- President and Cabinet for review of program design and consideration of impact on financial and physical resources and recommendation for approval to the Board of Regents
- Board of Regents for review of program for final approval.

The only external approval required is that of WASC/ACCJC.

## F. Evidence that Eligibility Requirements will still be fulfilled after the change

**Authority** – The implementation of the program will not impact the authority at the college. The proposed program instead, was established through the college’s free use of its authority. No agreements were made with other entities that may infringe on the authority of the college.

**Mission** – The program will further promote the college’s ability to meet its mission by contributing to the development of the Federated States of Micronesia through the offering of another program as needed by the nation.

**Governing Board** – like any program offered by the college, the Board of Regents has approved this program and endorsed this proposal.

**Chief Executive Officer** – The chief executive officer endorsed the program, approved its review within the college’s committees, and submitted it to the governing board where it was approved.

**Administrative Capacity** – This program will be administered within the administrative matrix of the college. [See appendix F.1]

**Operational Status** – This program fits into the operation of the college. Our prospective learners will be able to secure employment or pursue further education after completing this program.

**Degrees** – The degrees as described in section B of this proposal will enable our clientele another choice of program to choose from. The proposal will not create a new program but it will expand the areas covered in the current program.

**Educational Programs** – The program has been approved through our curriculum approval process and will be monitored at course and program level and through the College’s institutional effectiveness processes which is currently being implemented in response to the Commission’s recommendations.

**Academic Credit** – The proposed program complies with the college’s format for offering credits. Details are available in section B of this proposal.

**Student Learning and Achievement** – The program will be regulated through the college’s institutional effectiveness plan. Student achievement will be monitored at both course and program level while student learning outcomes evaluation will be conducted using data generated from both internal and external sources. The extent of this process is documented under the college’s institutional effectiveness plan.

**General Education** – The learners will be required to take all general education requirements for academic programs.

**Academic Freedom** – The proposed program will also comply with the college’s academic freedom as clearly stated in its general catalog.

**Faculty** – The college currently has among its faculty at Kosrae, Pohnpei, and National campuses people qualified to teach the courses. The college also has access to other available in country experts and leaders in the areas of agriculture and botany.

**Student Services** – The college will support the program using its student support services. Substantial change to the nature of the services will not take place as the prospective learners for the proposed program will be current students at the college.

**Admissions** – Prospective learners will be required to enter the program through the approved college admission requirements for academic programs. This process is administered at each campus while all student records are accounted for and monitored by the office of admissions and records based at the National Campus. The college has implemented a web-based student data storage and access service which has greatly improved the admission process.

**Information and Learning Resources** – The Learning Resources Center at the National Campus is currently being stocked with materials to support this program. Other learning

support materials and resources are already available. An inventory of available resources at the Kosrae library is appended. [See appendix D.1]

**Financial Resources** – Refer to the financial section under section D of this report.

**Institutional Planning and Evaluation** – The evaluation of this program will be integrated into the overall institutional effectiveness planning process which is being implemented by the college.

**Public Information** – The program will appear in the next edition of college's general catalog. Current public information needs will be handled through the college's website, flyers, and radio public service announcements.

**Relations with the Accrediting Commission** – Both Dr. Lily Owyang and Dr. Susan Clifford were contacted by the college's ALO. Dr. Owyang verified the need to submit the report while a working copy of the report was reviewed and commented on by Dr. Clifford.

**G. Evidence that accreditation standards will still be fulfilled after the change and all relevant Commission policies are followed**

- a. Standard I: Institutional Mission and Effectiveness
  - i. Mission – [See Eligibility Requirements section under section F of this report].
  - ii. Improving Institutional Effectiveness – [See Eligibility Requirements under section F of this report].
  
- b. Standard II: Student Learning Programs and Services
  - i. Instructional Programs – The program will add another program offering to the college’s current programs. The quality of the program will be regulated as part of the college’s institutional effectiveness plan.
  - ii. Student Support Services – [*See Administrative Services under section D and Admissions, Information, Learning Resources under section F*].
  - iii. Library and Learning Support Services – [*See Eligibility Requirements under section F of this report*].
  
- c. Standard III: Resources – [*Refer to section D of this report*].
  - i. Human Resources
  - ii. Physical Resources
  - iii. Technology Resources
  - iv. Financial Resources
  
- d. Standard IV: Leadership and Governance [*Refer to section F of this report*]
  - i. Decision-Making Roles and Processes
  
- e. Board and Administrative Organization