AUTHORIZATION TO PLAN (ATP)
AN ACADEMIC PROGRAM

1. School/College and Department/Unit:
   Maui Community College
   Science, Technology, Math, and Engineering (STEM) Department
   Agriculture & Natural Resources Program

2. Co-Chairs/Conveners of Planning Committee:
   Ann Emmsley, Associate Professor, Coordinator of the Agriculture & Natural Resources Program (AG)
   Kiope Raymond, Associate Professor, Hawaiian Studies (HWST)
   Ryan Daniels, Instructor, Administration of Justice (AJ), Coordinator, AJ Program

3. Program Category: _X_ New ___ Modified ___ Interdisciplinary

4a. Degree or Certificate Proposed:
   Associate in Applied Science (A.A.S.) Degree in Cultural and Natural Resource Management
   with three concentration areas: Natural Resource Management, Cultural Conservation and Enforcement, and Agricultural Sustainability.

4b. List similar degrees or certificates offered in UH System:
   - Hawaii CC: Hawaiian Life Styles A.A.S. with four concentration areas in: Hula, Mahiai, Lawaia, Cultural Resource Stewardship; and a Hawaiian Life Styles Academic Subject Certificate (ASC-HLS)
   - Hawaii CC: Certificate of Achievement in Tropical Forest Ecosystem and Agroforestry Management (TEAM)

5. Planning
   a. Planning period: Fall 2008 – Spring 2009
   b. Activities to be undertaken during the planning phase include
      1. Curriculum development projects, such as
         a. Developing new courses including course outlines, SLO, syllabi, activities, and assessment strategies;
         b. Develop courses that allow for distance education delivery option.
         c. Reviewing best practices with regard to contextualized, experiential learning and incorporating these into the courses that will be offered as part of the proposed degree;
         d. Developing a course sequence map.
         e. Reviewing and aligning SLO for courses that will be included in the proposed degree;
         f. Determining appropriate SLO and assessment strategies for the proposed degree and each of the three concentrations;
         g. Aligning SLO for the proposed degree with the Agriculture & Natural Resources Program, Administration of Justice, and Hawaiian Studies courses;
h. Assessing the effectiveness of courses that will be offered as part of the proposed degree and making necessary modifications;

i. Completing applications for articulation to the UH General Education Core for courses the have been developed as part of the proposed degree agreement;

2. Determining additional library, media, and equipment needs for the program;

3. Preparing, circulating, and evaluating needs assessments regarding workforce needs which may include DOE teacher in-service training, DLNR in-service training, and appropriate upper-division course preparation;

4. Identifying the target population at the college, for example, cable, on-line students, day or night students;

5. Developing internships and cooperative learning opportunities and finalizing agreements with community partners for on-site experiential learning projects;

6. Applying to governmental agencies for permits to work in sensitive areas, such as archaeological sites, parks, and Natural Area Reserves;

7. Interview kupuna (elders) and record stories related to the sites or species;

8. Ensuring that budget items align with program goals; and

9. Applying for additional grants.

c. Submission date of program proposal: Spring 2009

d. Workload/budget implications during planning period: The workload and budget for the planning is covered by a USDA CSREES Alaska Native-Serving and Native Hawaiian-Serving Institutions Education grant and is being coordinated by Ann Emmsley (AG), Kiope Raymond (HWST), and Ryan Daniels (AJ).

6. Program Description:

Proposed Degree Requirements: Associate in Applied Sciences (A.A.S.) Degree Requirements (65 credits) The proposed Associate in Applied Science (A.A.S.) Degree is a two-year degree consisting of at least 65 credits at the college level (100 or above.) The College’s Mission, Vision, Core Values and Commitments, and Strategic Plan are guided by the Native Hawaiian reverence for the ahupuaa, a practice of sustaining and sharing diverse but finite resources for the benefit of all. This certification provides students with skills and competencies for gainful employment to pursue careers in the areas of cultural and natural resources management and enforcement; sustainable agriculture, with major emphasis on horticulture of native plants; habitat restoration and monitoring; conservation; agribusiness; and entrepreneurship. The proposed A.A.S. Degree will feature a program design grounded in contextualizing the application of knowledge and student experiential learning as a major component. Learning activities may be carried out at a number of sites, such as the Palaua Cultural Preserve, Maui Nui Botanical Gardens, Maui Coastal Land Trust projects in the Waiehu and Waihe’e Ahupua’a, East Maui Watershed Partnership dryland forest restoration projects in Auwahi, and various other projects being carried out by the College’s community partners in Honokowai, Kauaula, Ukumehame, Nu’u, and Haleakala National Park.

The overall goal of the program is to create a generation of cultural and natural resource professionals to expand the current efforts in the county of Maui and the state of Hawai’i to preserve and protect the Hawaiian culture and the unique natural ecosystems.
The major objectives of the proposed A.A.S. Degree are:

1. to provide a comprehensive curriculum to meet the requirements for entry-level training in areas, such as native habitat restoration; archaeological preservation; invasive species eradication; and cultural and natural resources conservation, maintenance, interpretation, and enforcement;
2. to promote traditional and new applied research technologies as essential elements in workforce training;
3. to combine traditional academic experiences with hands-on applications and active learning experiences;
4. to utilize culturally-based education and traditional Native Hawaiian ways of knowing to supplement modern knowledge acquisition modalities;
5. to encourage students to practice their native Hawaiian language, culture, and traditions;
6. to develop authentic training programs for local underserved populations;
7. to support the State of Hawai`i, Department of Education (DOE) career pathway in Natural Resources by creating an academic bridge to the University of Hawaii Natural Resource and Environmental Management Program (NREM);
8. to prepare students for Science, Technology, Engineering, and Mathematics (STEM) professions;
9. to provide in-service training to DOE teachers;
10. to provide a comprehensive cultural and natural resources management training; and
11. to provide in-service and retraining educational opportunities for personnel currently in the field, such as DLNR/DOCAR enforcement officers and other non-profit and governmental agency resource managers.

7. Program Justification:

The development of an A.A.S. Degree supports the State Department of Education (DOE) Career Pathway in Natural Resources. Career Pathways serve to guide career exploration and planning activities, to focus teaching and learning and to link education with relevant real-world experiential activities. The A.A.S. would also bridge an existing gap and provide the necessary preparation for a baccalaureate program in Natural Resources and Environmental Management (NREM) from UHM, UHH and Oregon State University.

As mentioned, the USDA CSREES, Alaska Native-Serving and Native Hawaiian-Serving Institutions Education Grants Program specifically supports projects that enhance educational equity for under represented students; strengthens institutional educational capacities; prepares students for careers related to agricultural and natural resource systems; and maximizes the development and use of resources to improve agricultural sciences teaching programs. This grant money has been used to initiate plans for the proposed A.A.S. Degree and begin appropriate curriculum development.

In 2004, MCC was awarded a Tribal College Undergraduate Program (TCUP) grant to be used to implement an institution-wide effort to restructure and strengthen introductory STEM courses with an emphasis on Native Hawaiian student performance and retention. The
A.A.S. will allow MCC students to play an integral role applying science, technology, engineering, and math to address research questions and utilize experiential education. This project will allow MCC students to engage in a multidisciplinary effort researching both the pre-historic and historic land use of ahupua’a throughout Maui, building on preexisting data such as archaeological, cultural, demographic, environmental, ethno-botanical, ethno-historical; and generating new data where none exists.

The College’s partnership with the Hawai`i State Department of Land & Natural Resources, Division of Conservation & Enforcement will lead to opportunities in the field of natural resources enforcement. Within the envisioned A.A.S., a cooperative agreement with the Maui Branch of the State of Hawai`i Department of Land & Natural Resources will prepare students for joining the workforce. Non-governmental organizations, which have provided MCC students with opportunities for Service-Learning and internships, will benefit from this training and include Maui Nui Botanical Gardens, Maui Invasive Species Committee (MISC), The Nature Conservancy, Haleakala National Park, and East Maui Watershed Partnership. Other fields which could benefit from graduates with this A.A.S. include: fire prevention and safety and fire fighting; hydrology technicians (USGS); archaeology (State and private companies); planners (County) e.g., ensuring that large scale destruction of sites, plants, view planes, natural resources (sand) are reduced when developments are planned/approved. Public works--environmental technicians (County); USGS (PBIN); CTAHR; nursery owners; DOT (for highway improvements); Dept. of Ag. (airport, harbors, ferries); Tri-Isle R&D; landscape architects and large-scale (ML&P) and small-scale developers (family subdivisions); GIS technicians (County or State).

This is a relatively new emerging field; therefore, no traditional career identification is available. However, jobs related to these concentrations are anticipated as the environmental landscape changes. Presently, according to EMSI data, agricultural and food science technicians, environmental science and protection technicians, and environmental engineering technicians will be needed in the range of 16-20 employees per year.

It is expected that 12-15 graduates will be produced by the end of the third year of the program.

The jobs information page at Hawaii.gov lists eleven current openings in the area of Environmental Services, eighteen in Natural Resources, and six in Enforcement. In addition, the Hawaii Ecosystems At Risk (HEAR) website (hear.org) currently lists sixty-four announcements for Conservation jobs in Hawaii and the Pacific.

8. Description of resources required:
   a. Faculty – Adequate faculty are available. Recently three new tenure-track faculty members were hired to teach Hawaiian language and Hawaiian Studies courses. No new faculty members will be needed to cover the General Education, Agriculture, or Administration of Justice course offerings. Lecturers may be needed to fill behind should faculty need to do curriculum development. Grant monies to cover.
b. Library resources – Some new library and media resources are anticipated and will be identified during the planning period. Funds are included in the USDA grant for these resource materials.

c. Physical resources – The faculty of the College expect to have use of a modern two-room building adjacent to the Palauena Cultural Preserve that will serve as classroom and laboratory space. Other classes will be conducted on the MCC campus and at botanical gardens, agricultural facilities, and field research sites around the County of Maui.

d. A Program Coordinator position is covered under the USDA CSREES grant to carry out the activities of the grant; including, but not limited to, recruitment, retention, and data collection. The current grants runs until 2010. A subsequent, five-year grant has been authorized but not yet appropriated. Should the USDA CSREES grant not be appropriated for 2010 to 2015, fill-behind lecturer positions would be eliminated and the full-time faculty would teach all necessary courses to assure program maintenance.

9. Five-Year Business Plan
   a. Annual costs to implement the program
      It is not anticipated that the program will incur costs that would not be covered by tuition and grants.
   b. Projected enrollment and estimated tuition revenue
      See template.
   c. How will be program be funded?
      Tuition revenue and grant income.
   d. Does the current or proposed budget (Department/College/Campus) include funds or a request for funds for the proposed program?
      No.
   e. Given a “flat budget” situation, how will the proposed program be funded?
      Tuition revenue and grant income
f. Mini Cost Revenue Template

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</table>

| REVENUES |        |        |        |        |        |
| Projected Enrollment | 15 | 19 | 25 | 28 | 31 |
| No. of Courses | 4 | 8 | 8 | 8 | 8 |
| No. of Credits | 13 | 26 | 26 | 26 | 26 |
| SSH | 294 | 450 | 744 | 816 | 888 |
| Tuition Rate/Credit | 129 | 147 | 159 | 166 | 185 |
| Total Revenue from Tuition | 37,926 | 66,150 | 118,296 | 135,456 | 164,280 |
| Other Sources of Income | 108,000 | 108,000 | 108,000 | 108,000 | 108,000 |
| TOTAL Revenues | | | | | |

10. Impact on current courses or programs.
   The proposed A.A.S. Degree program will increase Liberal Arts courses offerings in the Humanities, Natural and Social Sciences. Additional elective courses for Agriculture & Natural Resources, Hawaiian Studies, and Administration of Justice credential programs will be made available.

11. If this program is multidisciplinary, provide evidence of commitment for support from the Colleges, departments, programs, and/or individuals expected to participate.
   See attachments.
Reviewed by:

Campus Chief Academic Officer:
Comments and Recommendations:

Suzette Robinson
Print Name    Signature       Date

Council of Chief Academic Officers
Comments/Recommendations:

Linda K. Johnsrud
Print Name    Signature       Date

Chancellor: ___ Approved ___ Disapproved

Clyde Sakamoto
Print Name    Signature       Date

(Final signed copy is provided to the Vice President of Academic Planning and Policy for Program Action Report) 6/12/07