WINDWARD COMMUNITY COLLEGE CERTIFICATE PROPOSAL

This form is to be used for credit certificates that may be approved at Windward Community College and do not need off campus signatures. The chart following the form provides information on certificates.

For more information on program and certificate proposals see the Windward Community College Curriculum Review Policy: Philosophy and Procedures at the CCAAC website.
WINDWARD COMMUNITY COLLEGE CERTIFICATE PROPOSAL

Please complete all sections.

I. INTRODUCTION

A. Date of proposal: June 2, 2012

B. Type of certificate

___ Academic Subject Certificate (ASC)
___ Certificate of Completion (CC)
__x_ Certificate of Competence (CoC)
___ Certificate of Professional Development (CPD)
___ Certificate of Participation (CP)

C. Proposed name of certificate
Certificate of Competence in Plant-Food Production and Technology

D. Date of proposed implementation
Fall 2012

E. Brief Summary of proposal
In order to attract a new generation of skilled agricultural-food technicians and broaden/enhance the skills and knowledge of existing agricultural biotech employees and incumbent workers in other related fields, the College proposes to develop a Certificate of Competence in Plant-Food Production and Technology (PFPaT).

The proposed project is supported through Perkins grant FY 2012 – 2013. The project addresses the following UHCC and WCC Strategic Goals:
- UHCC 4.1, Increase by 3% per year the number of degrees awarded, and or transfers to UH baccalaureate programs that lead to occupations where there is a demonstrated state shortage of qualified workers and where the average wage is at or above the U.S. average.
- WCC 4.1, Contribute to the development of a highly-skilled, high-wage workforce through the establishment of at least one new, specific, career-focused degree, certificate or career pathway per year that leads to employment in emerging fields.
- WCC 4.6, Increase the number of degrees awarded, and/or transfers to UH baccalaureate programs that lead to occupations where there is a demonstrated state shortage of qualified workers and where the average wage is at or above the U.S. average by 3% per year.
II. OBJECTIVES AND NEED FOR CERTIFICATE

A. Objectives
The Certificate of Competence in PFPaT is a hybrid credit/noncredit certification program requiring a total of 9 credits. Each course offering can either be taken for a) credit (pursuant to a higher degree or a Certificate of Completion in Agricultural Technology or a Certificate of Achievement in Agripharmatech, or b) credit/noncredit, leading to a Certificate of Competence in PFPaT (for credit graduates) or a Professional Development (PD) in PFPaT (for non-credit graduates), in preparation for immediate employment in the agricultural biotech industry.

B. Need
The field of agriculture-based biotechnology is evolving each day, offering numerous career options. Besides employing people for research and development, the industry also caters to various other agricultural biotech-related fields including horticulture, floriculture, and tissue culture. Agricultural based biotechnologists can also sharpen students’ academic skills by working with food processing or post-harvest technology.

Academic programs certificates in these fields (Certificate of Achievement in Agripharmatech, and Certificate of Completion in Agriculture Technology) have already been developed and offered at Windward Community College. Occupations related to agricultural biotech are expected to increase 10%-12% by 2018 (DILR Research and Statistics Office, 2010). These include jobs for crop, nursery, greenhouse workers; First line supervisors for farming and forestry workers; first line supervisors/managers of landscaping, lawn service, and grounds keeping workers; and landscaping and grounds keeping workers (Certified Nursery – Hawaii Department of Agriculture, 2012. Http://hawaii.gov/hdoa/pi/pq/nema_cert/nurseries-in-hawaii).


C. Duration – will this certificate continue to be offered indefinitely or for a limited period of time? If the latter, for how many semesters or years do you anticipate offering this certificate.
This certificate will be offered indefinitely. BOT 105, AG 149, AG 152 and FSHN 185 are listed in the Agripharmatech and Agriculture programs, and are alternately offered in regular semesters.
D. Target group – number of students projected to enroll in and complete the certificate each semester or year. Is there student demand for training? Document your answer. Will any special group be served?
Target group: credit/non-credit students. Enrollment in the programs are conservatively projected at 16 for the first year and 18 for the second. Projecting a 70% completion rate based on WCC’s experience with other certificate programs, 11 students should complete after the first year and 13 after the second (assuming that students who do not complete do not return).

E. Is this certificate or one similar to it, offered at any other college in the system? If so, discuss the similarities and differences between the course offerings.
AG 149 (Plant Propagation) and AG 152 (Orchid Culture) are offered only at WCC. No other college in the system offers this certificate program.

III. DESCRIPTION OF COURSE OR COURSE SEQUENCE

A. Curriculum: Required and recommended courses. Specify the total number of credit hours required to earn the certificate. Provide a brief description of each required course, indicating the specific competencies to be attained. Indicate courses which are not currently offered by the college.

Students can select three classes out of four that are listed in the program. All classes are offered at Windward Community College. The CoC PFPaT requires a total of 9 credits. Students can receive the certificate within two semesters. Graduates will gain knowledge in propagating, planting, and understanding the uses of plants/orchids, as well as skills in tissue culture and food sciences.

BOT 105 (Ethnobotany): The scientific study of the interaction between human culture and plants, including the interrelationship of botany, socio-economics, belief systems and history that have shaped the cultural uses of plants in Hawaii, as well as Asia or the Pacific. Lecture/field trip course with service-learning option. (3 hours lecture)
Student Learning Outcomes:
• Identify plants of major importance in various aspects of Hawaiian, Asian and Pacific Island cultures
• Utilize the plants for food, medicine, and other material goods

AG 149 (Plant Propagation): Introduction to the principles and practices of propagation of fruit, vegetable, and ornamental crops by seed, cuttings, grafting, budding, layering and division.(3 hours lecture)
Student Learning Outcomes:
• Describe basic plant growth
• Relate the principles of plant growth to the solution of everyday problems in plant production
• Understand the influence of environmental factors on plant growth
• Propagate plants by various methods
• Determine the best form of propagation for a selected plant

AG 152 (Orchid Culture): An extensive study of orchid identification, breeding, growth, and culture. Students are required to write a 10 to 15 page research report. (3 hours lecture)
Student Learning Outcomes:
• Identify orchid species, hybrids and trace their pedigrees
• Provide cultural requirements for each genus, including temperature, light intensity, humidity, watering, fertilizing, media composition, and pest or disease control and repotting
• Perform traditional and in vitro propagation techniques
• Perform orchid breeding and discuss its economic importance
• Conduct research and submit research paper

FSHN 185 (Food Science and Human Nutrition): An introductory level biological science course which integrates basic concepts of science with the study of human nutrition. Designed for students who want an introduction to nutrition, as well as those who later choose to major in it. (3 hours lecture)
Student Learning Outcomes:
• Describe the six categories of nutrients and evaluate the nutrient adequacy of a diet.
• Identify factors influencing eating habits.
• Correctly interpret and evaluate information on food labels, packages and product advertising based on generally accepted scientific methods and standards.
• Define various types of malnutrition and discuss their causes, cures, and associated health effects.
• Discuss current issues related to the safety of the food supply, using concepts from toxicology.
• Describe physiological changes that occur during the life cycle and explain the changes in nutrient needs that accompany these changes.
• Discuss various environmental and ecological conditions, which interact with human nutrition, both locally and globally.

IV. RESOURCE REQUIREMENTS

A. Additional staff required. If no additional staff is required, indicate how existing staff will be utilized.
No additional staff is required. There are three full-time faculty members. One faculty teaches AG 149 (in Fall or Spring semester). Another faculty
teaches AG 152 (in Spring semester) and BOT 105 (in Fall semester). The other faculty teaches FSHN 185 (in Fall semester).

B. Additional facilities or equipment required. If none required, how will existing facilities and equipment be utilized?
Agriculture and Agripharmatech programs have their own separate facilities. No additional facilities are required. The Perkins grant FY 12 – 13 provides funding for a mini tractor. If more equipment is needed in the future, a second-year Perkins grant proposal will be submitted.
# Review of Certificate Proposals at Windward Community College

New Certificate Proposal:

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6. Faculty Senate Review

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Reason: ____________________________________________________________

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Faculty Senate Chairperson Date

7. Vice Chancellor for Instruction

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Reason: ____________________________________________________________

______________________________________________________________

Vice Chancellor for Instruction Date

8. Chancellor

_____ Approved  _____ Disapproved

Reason: ____________________________________________________________

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Chancellor Date