Honolulu Community College
General Education – DIVERSIFICATION DESIGNATION
Certification and Recertification

Application Form
Spring 2012

APPLICANT: Dr. K. Gopalakrishnan

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COURSE ALPHA and NUMBER: BOT 101

COURSE TITLE: General Botany

ESTIMATED NUMBER OF SECTIONS:
Fall: 1
Spring: 1

APPLICATION IS FOR:
☐ New Course  ☐ Modified Course  ☐ Existing Course  ☐ Re-designation
☐ Certification  x  Re-Certification. Date of last certification:

DIVERSIFICATION AREA DESIGNATION SOUGHT:
☐ DA (Arts)  ☐ DP (Physical Sciences)
☐ DB (Biological Sciences)  ☐ DS (Social Sciences)
☐ DH (Humanities)  ☐ DY (Laboratory)
☐ DL (Literature and Language)

What percentage of the CONTENT of this course focuses on this diversification area? 95

What percentage of CLASS MEETINGS focuses on this diversification area? 95
Guidelines and explanatory notes for the following questions are located at the end of this document.

1. **Hallmarks and SLOs.** Please explain how course-specific SLOs align with the diversification area’s hallmarks.

<table>
<thead>
<tr>
<th>DB. 1 Uses terminology of the biological sciences:</th>
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</thead>
<tbody>
<tr>
<td>SLO 1. Explain the characteristics of living things and the basis structure and function of the plant cell</td>
</tr>
<tr>
<td>SLO 3. Explain the structure and Function of the major plant organs: root, leaf stem and flower/fruit</td>
</tr>
<tr>
<td>SLO 4. Describe the unique anatomical characteristics of major plant groups and relate these structures to the function they perform</td>
</tr>
</tbody>
</table>

As with any live science subjects, this course also necessitate students to have basic knowledge of terminology and vocabulary used in the study of plants. Functional and structural aspects of plant cells are included in SLO1. Terminology used in describing the various plant organs are introduced in SLO 3. Terms needed for understanding plant physiology are covered in SLO 4.

<table>
<thead>
<tr>
<th>DB. 2 Involves knowledge and theories relating to processes in the biological sciences:</th>
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<tbody>
<tr>
<td>SLO 2. Describe important metabolic processes in plant including plant responses to the environment</td>
</tr>
<tr>
<td>SLO 4. Describe the unique anatomical characteristics of major plant groups and relate these structures to the function they perform</td>
</tr>
<tr>
<td>SLO 6. Learn about diversified agriculture technologies for increasing food production</td>
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Application of knowledge of basic physiological processes taking place within plants is an integral part of this course, which is an essential tool for understanding plant responses to natural conditions of the environment as well as to changes to those conditions brought out by anthropogenic activities (SLO 2). Theories on adaptation of plants to withstand demands imposed by environmental conditions will be discussed when students are introduced to various anatomical features of plants for performing specific functions (SLO 4). Students will be introduced to diverse agricultural practices to gain knowledge of food production techniques (SLO 6).

<table>
<thead>
<tr>
<th>DB. 3 Demonstrates inquiry that is guided by observation/experiment and reasoning and mathematics</th>
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<tr>
<td>SLO 4. Describe the unique anatomical characteristics of major plant groups and relate these structures to the function they perform</td>
</tr>
<tr>
<td>SLO 5. Describe the importance of plants to life on earth including ecological and socio-economics aspects</td>
</tr>
<tr>
<td>SLO 6. Learn about diversified agriculture technologies for increasing food production</td>
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</table>

Through experiment and observation, students will learn about vital processes of seed germination and plant growth (SLO 4). Examination of the role of plants in sustaining life on earth and supporting socio-economic activities will be integral part of the lectures (SLO 5). Students will be introduced to new concepts in botany that will enable them to examine effective...
food (fruits, grains and vegetables) production methods (SLO 6).

2. **Assessment strategies.** Explain assessment strategies you have used (or plan to use) to measure the degree to which students exit the course with the course-specific SLOs. If there are multiple sections of the course taught by different instructors, please discuss how assessment is (or will be) carried out across instructors.

Students will be have opportunities to take part in group discussions and short presentation, which will allow the instructor to evaluate effectiveness of such activities in improving student’s learning outcomes. Periodic quizzes, midterms, and final exit exams will provide the instructor mechanisms for evaluating student performance of the course and their expected SLOs. Students are encouraged to attend lecture sessions in an effort to improve student retention in the class. Prescribed textbooks and lecture notes are expected to enhance student’s learning ability. Questions in the exams are selected to measure effectiveness of course-specific SLOS. Review of exam results in the class help students to realize their mistakes and shortcomings in the exams. This activity also helps them to strengthen their understanding of the course content and expected learning outcomes. Student evaluations give direct feedback about the course and instructor’s ability in enabling students meeting the expected SLOs. A lecture is hired on a semester-by- semester basis to teach this course.

3. **Assessment of assessment.** How have you used (or plan to use) the assessment findings to modify or improve this course? If there are multiple sections of the course taught by different instructors, please discuss how review of assessment results is (or will be) carried out across instructors.

The methodology of teaching of this course will be modified in order to incorporate student needs and concerns brought out during their course evaluations. Assessment of assessment will be made on a semester-by-semester basis for incorporating outcomes of reviews and inputs received from students. Mode of instruction will also be changed to utilize most recent instructional resources available. A problem-based learning technique using the greenhouse facility on campus is showing encouraging results in meeting expected student learning outcomes. Because of the emerging applied nature of the subject, efforts will be made to incorporate advancements made in genetics and agriculture to prepare those students with special interest in furthering their education in Botany. Assessment of assessment will include monitoring the success of such students in their pursuit for higher studies in Botany.
DIVERSIFICATION BOARD DECISION:

☑ Approved
   Re-Certification Due: **Fall 2012**

☐ Not approved
   If not approved, reasons for disapproval:

Diversification Board Chair Signature:  

Date: **9/18/12**
Course Syllabus

Course Title: General Botany

Course Number: BOT 101

Credits: 3

Prerequisite: None

Co requisite: Concurrent registration in BOT 101L (General Botany Laboratory)

Time: 8:30-9:45 AM (M & W)

Course Description:
This is an introductory course in plant biology. Topics to be covered are the structure and function of plant cells, tissues, and organs such as roots, stems, leaves and flowers; concepts of biological evolution and classification; the diversity of plants and related organisms; genetics; and ecology. This course also will include topics on biotechnology, agriculture technology and environmental pollution on plants.

Course Content:
Plants in our lives; the plant cell; the plant body; plant physiology; plant life cycle: flowers, fruits and seeds; genetics; plant systematics and evolution; diversity of plant life; human nutrition; origins and types of agriculture; grasses; legumes; starchy staples; breeding for crops and biotechnology; commercial products derived from plants; herbs and spices; material products (cloth, wood and paper); medicinal plants; psychoactive plants; poisonous and allergy plants; the algae; fungi; and plants and the environment; ecology and Biomes.

This course will satisfy the diversification requirement in Biological Sciences (DB) (Group 1 of Natural Science).

Student learning outcomes:

1. Explain the characteristics of living things and the basic structure and function of the plant cell.

2. Describe important metabolic processes in plant including plant responses to the environment.

3. Explain the structure and function of the major plant organs: root, leaf, stem and flower/fruit.

4. Describe the unique anatomical characteristics of major plant groups and relate these structures to the function they perform.

5. Describe the importance of plants to life on earth including ecological and socio-economics aspects.
Learn about diversified agriculture technologies for increasing food production.

Required Text:

Grading Procedure:
Grades are calculated based on the number of points achieved.
Points are accumulated in the following areas:
Quizzes: 10 points each
2 Exams (Midterm and Final): 100 points each
Semester Group Project: 200 points
   A 10 Minute PowerPoint* on one of the following topics:
   1. Native Hawaiian Monocots
   2. Hawaiian endangered endemic plants
   3. Native Hawaiian edible plants
   4. Plants and Bioremediation, with local examples of application
   5. Useful plants in Hawaii (can be introduced or native species)
* Must use original pictures

Final Grade Calculation:
90% points or more A
80% points – 89% points B
70% points – 79% points C
60% points – 69% points D
Less than 60% F

There are no make-ups for any part of this class. Late work will not be accepted. An excuse for not taking the exam on time or late submission of work will be given only for health-related reasons and will require written documentation from the physician.

Attendance Policy:
Due to the nature of this course, attendance is mandatory for complete understanding of the materials. Consideration may be given to the student for the attendance, participation in the class discussions and student group activities throughout the course when calculating the final grade.

Students with disabilities may obtain information on available services online at http://honolulu.hawaii.edu/disability. Specific inquiries may be made by contacting Student ACCESS at (808) 844-2392 voice/text, e-mail at access@hcc.hawaii.edu, or simply stopping by Student ACCESS located in Bldg. 7, Rm. 319

8-27-2012