UNIVERSITY OF HAWAI’I COMMUNITY COLLEGES

PROPOSAL TO INITIATE, MODIFY OR DELETE A COURSE

1. TYPE OF ACTION
   A. Addition [X] Regular [ ] Experimental [ ] Other __________________________ (specify)
   B. Deletion [ ]
   C. Modification [ ] in credits [ ] in title [ ] in number or alpha [ ] in prerequisites [ ] Other __________________________ (specify)

2. NEW ALPHA, NUMBER AND TITLE: BIOL 171L General Biology Lab I

3. CREDITS 1

4. OLD ALPHA, NUMBER AND TITLE

5. CREDITS ______

6. NEW CATALOG DESCRIPTION

Laboratory to accompany BIOL 171.

7. PREREQUISITES
   CHEM 161L (or concurrent) Lecture ______ Lecture/Lab ______ Lab 3
   Co-requisite: BIOL 171

8. STUDENT CONTACT HOURS PER WEEK
   Other (specify) ______

9. PROPOSED DATE OF FIRST OFFERING
   Fall 1997

10. THIS COURSE [ ] IS REQUIRED [ ] IS AN ELECTIVE FOR THE WCC __________________ (Please specify) PROGRAM/CORE
     [ ] CAN FULFILL Natural Science Laboratory ____________________ REQUIREMENT
         (Please specify)

11. THIS COURSE [ ] INCREASES [ ] DECREASES [X] MAKES NO CHANGE IN NUMBER OF CREDITS REQUIRED
     FOR THE PROGRAM/CORE

12. SIMILAR COURSES OFFERED ELSE WHERE:

   College(s): Alpha. Number. Title:
   UH Manoa BIOL 171L General Biology Lab I
   Kap CC BIOL 171L General Biology Laboratory I

13. THIS COURSE IS
   [X] ALREADY ARTICULATED [ ] APPROPRIATE FOR ARTICULATION with BIOL 171L @ UHM & KCC
   [ ] NOT YET APPROPRIATE FOR ARTICULATION
   (Provide details of existing or desired articulation (date, college(s), purposes, pre-major or major, etc.)

14. REASON FOR INITIATING, MODIFYING OR DELETING COURSE OR OTHER PERTINENT COMMENT:

   Companion lab course to BIOL 171; required co-requisite.

REQUESTED BY: ____________________________ Date: 12-2-96

APPROVED BY: ____________________________ Date: 1/16/97

Curriculum Committee
Faculty Senate
Dean of Instruction
Provost

(Amended for WCC use Sept. 1991)
# LEVELS OF REVIEW OF COURSE PROPOSALS AT WCC

<table>
<thead>
<tr>
<th>Signatures</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Subject Area</strong> (one or more instructors in the area)</td>
<td></td>
</tr>
<tr>
<td>Joseph E. Ciotti</td>
<td>12-2-96</td>
</tr>
<tr>
<td>Dale E. Loyola</td>
<td>12/2/96</td>
</tr>
<tr>
<td>Jacqueline Made</td>
<td>12-2-96</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>2. Department</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacqueline Made</td>
<td>12-2-96</td>
</tr>
<tr>
<td>Department Chairperson</td>
<td></td>
</tr>
</tbody>
</table>

Was this course discussed in a dept. mtg. 11-2-96

<table>
<thead>
<tr>
<th><strong>3. Division</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant Dean of Instruction</td>
<td>12-2-96</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>4. Curriculum Committee Review</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved</td>
<td>X</td>
</tr>
<tr>
<td>Disapproved</td>
<td></td>
</tr>
<tr>
<td>Reason:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Curriculum Committee Chairperson</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel Dennin</td>
<td>11/6/97</td>
</tr>
</tbody>
</table>
COURSE ARTICULATION FORM

ORIGINATING CAMPUS: Windward CC
COURSE ALPHA & NUMBER: BIOL 171L
COURSE TITLE: General Biology Lab I
DATE OF OUTLINE: (Fall or Spring) Fall Year 1997

1. Articulation committee to review this course:

A. Standing Committees
   - Written Communication
   - Mathematical & Logical Thinking
   - World Civilizations
   - Languages
   - Arts & Humanities
   - Natural Science
   - Social Science

B. Special Discipline/Program Committee
   - Biology Program
   - Specify discipline/program

   Campus with which this course should be articulated (special articulation only):
   - UH Manoa [ ]
   - UH Hilo [ ]
   - Community Colleges [ ]
   - UH West Oahu [ ]

2. In the opinion of the originating campus, this course is equivalent to the following and/or meets the criteria for the indicated core categories:

<table>
<thead>
<tr>
<th>Receiving Campus</th>
<th>Equivalent Course (Alpha and Number)</th>
<th>Core Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>UH Hilo</td>
<td>Unknown</td>
<td>11.C.BIOL</td>
</tr>
<tr>
<td>UH Manoa</td>
<td>BIOL 171L</td>
<td>NS1</td>
</tr>
<tr>
<td>UH West Oahu</td>
<td>Unknown</td>
<td>NS</td>
</tr>
<tr>
<td>Hawaii CC</td>
<td>Unknown</td>
<td>NS</td>
</tr>
<tr>
<td>Honolulu CC</td>
<td>Unknown</td>
<td>NS1</td>
</tr>
<tr>
<td>Kapilani CC</td>
<td>BIOL 171L</td>
<td>NS1</td>
</tr>
<tr>
<td>Kauai CC</td>
<td>Unknown</td>
<td>NS1</td>
</tr>
<tr>
<td>Leeuward CC</td>
<td>BIOL 171L*</td>
<td>NS1</td>
</tr>
<tr>
<td>Maui CC</td>
<td>Unknown</td>
<td>NS</td>
</tr>
<tr>
<td>Windward CC</td>
<td>Unknown</td>
<td></td>
</tr>
</tbody>
</table>

3. Notes
   *BIOL 171L is not listed in the LCC catalog, but the course is being developed there.

Revised 1/29/93
WOC FORM FOR TRANSFER COURSES

(To be completed for articulation with any 4-year UH campus)

Course__BIOL 171L__ Submitted by __D. Krupp______ Date __11/18/96__

1. List the counter part to this course on any 4-year UH campus. Describe the relationship between the course and any related baccalaureate program area.

   BIOL 171L General Biology Lab I at U.H. Manoa.
   This lab course is a co-requisite to BIOL 171 and is required for all biological science majors.

2. Is this course taught or accepted by major accredited colleges or universities? Give one or two examples.

   Yes. Almost any four-year college or university offers a comparable course.

3. Please attach a complete course outline, if you have not done so already. Your course outline should address all the items listed in the Guidelines for Course Outlines.
WCC FORM FOR NEW COURSE PROPOSALS

Course  BIOL 171L     Submitted by  D. Krupp       Date 11/18/96

1. How is this course related to the educational needs and goals of the
   College/Department/Community as reflected in the EDP?

   Enhances opportunities for students intending to transfer to
   a four-year baccalaureate program in biological science after
   graduation from WCC.

2. Provide details of any additional staff, equipment, facilities,
   library/media material, faculty preparation and other financial support
   that would be required to implement this course. (Include an estimate of
   the actual cost of supplies and equipment.) What has been done to provide
   for these additional costs for the proposed date of offering? Who will
   teach the course?

   Course will take advantage of new equipment and facilities
   offered in the new science building. Thus it will not require
   additional expenditures above what has already been appropriated.
   This course will be taught as part of Dr. Krupp's normal teaching load.

3. Is a similar course taught elsewhere in the UH system? yes
   If yes, provide details of how this course differs from existing similar
   courses.
   It does not differ substantially from BIOL 171L taught at other campuses
   within the U.H. system.

4. Is this course experimental and/or unique to Windward Community College? no
   If yes, provide rationale and details of its impact on the College
   curriculum.

5. Is a similar course taught on the upper division level by a 4-year UH
   college? no
   If yes, explain why this course is appropriate at the lower division or how
   it differs from its upper division counterpart.

6. Please attach a complete course outline. Your course outline should
   address all the items listed in the Guidelines for Course Outlines.

7. If this course is numbered 100 or above or appropriate for transfer to a
   4-year college, complete and attach WCC Form for Transfer Courses (blue).
   (See attached criteria for transfer courses.)

WCC 9/91
COURSE NAME: General Biology Lab I
COURSE ALPHA: BIOL 171L
CREDIT HOURS: 01

CATALOG DESCRIPTION:

Laboratory to accompany BIOL 171. (3 hrs. lab)

REQUIREMENTS COURSE SATISFIES:

AT WCC: Partially fulfills AA degree Natural Science requirements as a biological science lab course.

AT UHM: Partially fulfills Natural Sciences area requirement for the UHM General Education Core and for the Colleges of Arts and Sciences as a laboratory course. This class may fill one of the major requirements for a bachelor of arts (BA) or bachelor of science (BS) degree in any of the biological sciences.

PREREQUISITES

CHEM 161L (or concurrent)

CO-REQUISITE:

BIOL 171

RECOMMENDED SPECIAL PREPARATION:

High school biology

RECOMMENDED BASIC SKILL LEVELS:

College level reading-writing skills

ACTIVITIES REQUIRED AT SCHEDULED TIMES OTHER THAN CLASS TIME:

none

INSTRUCTOR:

Dr. David Krupp

OFFICE:

Haloa 108

TELEPHONE:

235-7316 (WCC office), 236-7437 (HIMB office)

EFFECTIVE DATE:

Fall 1997
COURSE GOALS

Upon completion of this course, you should:

1. have an understanding of basic biological laboratory techniques, the scientific method of inquiry, and the collection, reduction, interpretation, and formal presentation of data;

2. integrate textbook and lecture information from BIOL 171 with systematic observations of biological phenomena in the laboratory.

COURSE OBJECTIVES

The student will demonstrate the acquisition of basic biological science laboratory skills. These skills includes the following areas:

1. describe the scientific method of inquiry, provide examples of its use, and demonstrate this method through written summaries of class laboratory activities and one formal research report;

2. collect, reduce, interpret, and present biological data;

3. use of some of the standard tools of the biological scientist, such as microscopes, scales, spectrophotometers, computers, and other analytical tools;

4. use of standard analytical procedures, such as chromatography, biochemical analyses, preparation of materials for microscopic examination, culture techniques, dichotomous keys, and statistical procedures (descriptive statistics and hypothesis testing);

5. knowledge of the procedures and theoretical foundations needed to study the following biological phenomena: separation of biological compounds, enzyme kinetics, cell structures, membrane transport mechanisms, fermentation, respiration, photosynthesis, extraction/measurement of nucleic acids, meiosis, mitosis, Mendelian genetics, population genetics, bacteria, cyanobacteria, protozoa, algae, and fungi.

MODE OF INSTRUCTION

The previously described objectives will be achieved through the aid of the following learning activities:

1. Active participation in laboratory activities;
2. Laboratory lecture and demonstrations;
3. Multimedia presentations, including computer-assisted and internet-assisted activities;
4. Recording laboratory activities and results in a laboratory notebook;
5. Written summaries of laboratory activities;
6. Completing a formal research paper;
7. Laboratory examinations and quizzes.

The material presented in all modes of instruction will be of an introductory nature but sufficient in content to allow continuation in higher level biological science courses required for biological science majors. Considerable out-of-classroom time will be spent completing lab summaries and preparing for upcoming lab activities.
EVALUATION OF OBJECTIVE ACHIEVEMENT

IN-LAB EXAMINATIONS. The student will take one midterm examination (100 points) and a cumulative final examination (150 points) to demonstrate acquisition of laboratory skills and a understanding of information presented during laboratories. NO RETESTS will be given. A student missing an exam because of an illness or legitimate emergency may take a make-up exam only during the FIRST class meeting to which the student returns. In such a circumstance, the student should make every reasonable attempt to contact the instructor before the exam is administered to the class (or as soon as possible). While make-up exams will cover the same content area as a missed exam, the exam format and specific questions may be different.

PRE-LAB QUIZZES. The student will take a total of 12 quizzes (10 points each) administered ONLY during the first five minutes of the laboratory meetings. These noncumulative quizzes will test the student's knowledge of and preparation for the laboratory exercise planned for that day. In some cases, the student will be required to enter specific information into his laboratory notebook before the laboratory activity. Thus quizzes will frequently include inspections of laboratory notebooks to make sure the student has completed all of the items listed in the Lab Preparation section at the beginning of each laboratory description. Of these 12 quizzes, only the 10 best scores will be included in the student's point total (100 points total). NO MAKE-UP QUIZZES FOR ANY ABSENCES (EVEN RESULTING FROM LEGITIMATE ILLNESS) WILL BE ADMINISTERED.

LABORATORY NOTEBOOK. The student will maintain a laboratory notebook to record all notes, observations, and information gathered before and during laboratory activities. This notebook must be brought to every laboratory period. FAILURE TO HAVE THE LAB NOTEBOOK DURING THE LAB PERIOD WILL RESULT IN A 10 POINT REDUCTION IN THE STUDENT'S TOTAL POINTS FOR EACH OCCURRENCE. This notebook will be collected and graded twice during the semester (20 points each collection). The type of notebook and the kind of information required will be explained during the introductory lab session.

LABORATORY SUMMARIES. The student will complete a total of 11 written laboratory summaries (10 points each). Each summary must be completed and turned in no later than the beginning of the first laboratory meeting after the assignment was given (110 points total). LATE SUMMARIES RECEIVED WITHIN ONE WEEK OF THE DUE DATE WILL BE ASSESSED AN AUTOMATIC PENALTY OF 1.5 POINTS. SUMMARIES WILL NOT BE ACCEPTED IF SUBMITTED MORE THAN ONE WEEK FOLLOWING THE DUE DATE.

FORMAL LABORATORY REPORT. The student will submit both a draft and a final version of a formal lab report for this course (100 points total). The formal report will be written on the Mendelian Genetics lab. LATE ASSIGNMENTS RECEIVED WITHIN ONE WEEK OF THE DUE DATE WILL BE ASSESSED AN AUTOMATIC PENALTY (five points for a late draft and 10 points for a late final report). ASSIGNMENTS WILL NOT BE ACCEPTED IF SUBMITTED MORE THAN ONE WEEK AFTER THE DUE DATE.

LABORATORY ATTENDANCE. Regular attendance is expected. Because laboratories involve considerable set-up/take-down time and supervision, students will NOT be able to make up missed laboratory activities. A student missing a scheduled laboratory activity because of an illness or legitimate emergency may be given an alternative activity to make up lost points. In such a circumstance, the student is still responsible for the information presented during the missed laboratory session. Regardless of the reason, a student missing more than one scheduled laboratory session WILL NOT RECEIVE CREDIT FOR THE COURSE.
METHOD OF GRADING

The assignment of points will be according to the following protocol:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Examination</td>
<td>100</td>
</tr>
<tr>
<td>Final Examination</td>
<td>150</td>
</tr>
<tr>
<td>Pre-Lab Quizzes</td>
<td>100</td>
</tr>
<tr>
<td>Laboratory Notebook</td>
<td>40</td>
</tr>
<tr>
<td>Laboratory Summaries</td>
<td>110</td>
</tr>
<tr>
<td>Formal Laboratory Report</td>
<td>100</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>600</strong></td>
</tr>
</tbody>
</table>

Letter grades will be assigned as follows:

- **A** --- 90% or above in total points and not missing more than one scheduled laboratory activity.
- **B** --- 80-89.9% of total points and not missing more than one scheduled laboratory activity.
- **C** --- 65-79.9% of total points and not missing more than one scheduled laboratory activity.
- **D** --- 55-64.9% of total points and not missing more than one scheduled laboratory activity.
- **F** --- Below 55% of total points, or informal or incomplete official withdrawal from course, or if a student misses more than one scheduled laboratory activity for reasons other than documented illness or emergency.
- **I** --- Incomplete; given at the **INSTRUCTOR'S OPTION** when student is unable to complete a small part of the course because of circumstances beyond his or her control. It is the **STUDENT'S** responsibility to make up incomplete work. Failure to satisfactorily make up incomplete work within the appropriate time period will result in a grade change for "I" to the contingency grade identified by the instructor (see catalog); may be issued if documented serious illness or emergency forces a student to miss more than one scheduled laboratory activity.
- **CR** --- 65% or above in total points; the student must indicate the intent to take the course as **CR/NC** in writing by the end of the 10th week of classes (see catalog).
- **NC** --- Below 65% of total points; this grade only available under the **CR/NC** option (see above and see catalog).
- **N** --- **NOT GIVEN BY THIS INSTRUCTOR EXCEPT UNDER EXTREMELY RARE CIRCUMSTANCES** (e.g., documented serious illness or emergency that prevents the student from officially withdrawing from the course); may be issued if documented serious illness or emergency forces a student to miss more than one scheduled laboratory activity; never used as an alternative for an "F" grade.
- **W** --- Official withdrawal from the course after the third week and prior to the end of the 10th week of classes (see catalog).

Waiver of minimum requirements for specific grades may be given only in unique situations at the instructor's discretion.

Students involved in academic dishonesty will receive an "F" grade for the course. Academic dishonesty is defined in WCC's college catalog.

**STUDENT RESPONSIBILITIES**

Students should carefully review the attached sheet detailing inherently dangerous activities of this course and sign the appropriate U.H. Assumption of Risk and Release and Medical Consent forms.

Students are expected to participate in all laboratory activities and complete all course assignments on time.
Students are expected to be prepared in advance when they arrive to class. Being prepared includes the following: having already read text materials (e.g., textbook readings and handouts) assigned for that day's activities, bringing required work materials (e.g., lab notebook, textbook, handouts, writing supplies, etc.), and having completed any assigned pre-lab tasks.

Any changes in the course schedule, such as examination dates, deadlines, etc., will be announced ahead of time in class. It is the student’s responsibility to be informed of these changes.

It is the student's responsibility to be informed about deadlines critical to making registration changes (e.g., last day of erase period and last day for making an official withdrawal.

The student should understand that BIOL 171L is a difficult course for students intending to major in one of the biological sciences. Thus BIOL 171L requires much time and serious dedication. If the student does not have a strong background or interest in science, the student does not belong in this lab course.

TEXTBOOK AND OTHER ASSIGNED INSTRUCTIONAL MATERIALS

The required textbook is: Biology 171L Laboratory Manual. Biology Program, University of Hawaii at Manoa.

OTHER INFORMATION

Important Dates:

- Last day to add or drop a class .........................
- Last day of erase period ................................
- Last day for official withdrawal ....................

Instructor's Office Hours (or by appointment):
Students enrolled in BIOL 171L are advised that certain required course activities are inherently dangerous and may require normal physical abilities. Students are therefore required to read about the inherently dangerous activities described below. In addition, students must read and demonstrate knowledge of their responsibilities while engaged in these activities.

Some students may have physical conditions that restrict their participation in certain laboratory activities. Respiratory ailments, certain allergies, and pregnancy may be among these conditions. Students exhibiting any of these conditions, or any other condition that may be impacted adversely by participation in the activity, should consult a physician.

**INHERENTLY DANGEROUS ACTIVITIES IN THE BIOLOGY LABORATORY**

Students may be exposed to chemicals (e.g., formaldehyde, organic solvents, acids, and other caustic chemicals), chemical fumes, laboratory equipment and supplies (e.g., scalpels, razor blades, glass slides, coverslips, and electrical equipment), toxic or irritating properties of living and dead animals, human organic matter (e.g., saliva and blood), and other materials necessary to laboratory activities of this or other laboratory classes. Other possible hazards include broken glass on the floor or counters, combustible materials (e.g., bunsen burner gas), and slippery spills.

**RESPONSIBILITIES OF STUDENTS IN THE LABORATORY**

1. Students should be familiar with safety procedures and take appropriate precautions at all times to insure the safety of every student in the lab.

2. Students should follow instructions carefully, especially when hazardous conditions occur or hazardous materials are being used.

3. Students should locate the placement of safety equipment and supplies in the laboratory: safety shower, eye wash station, fire extinguisher, and first aid kit. Students should understand the use of this equipment. Also note the locations of exits.

4. Anyone injured in the lab, should inform the instructor immediately and take immediate action to reduce the risk of further injury.

5. Students should familiarize themselves with the fire procedures. Extinguish small fires, but leave the building immediately should a major fire occur. Notify the appropriate authorities -- don’t assume someone else remembered to do it. Meet with other students and your instructor outside the building before leaving so that an accurate headcount may be made.

6. Students should dress appropriately in the lab. Students may elect to supply their own gloves and protective aprons or laboratory coats. Some lab activities may require protective eyewear (provided for the activity by WCC).

7. Students should report all hazardous conditions to the instructor immediately.

8. Chemicals may be poisonous, corrosive, or flammable. No chemicals, even chemicals known to be safe, should be ingested, inhaled, or touched unless specifically directed to do so by your instructor.

9. All organisms, living or dead, should be treated with care and respect. Avoid direct handling when possible.

10. The safe use of specific equipment and tools (e.g., microscopes, slides, scalpels, and pipettes) will be demonstrated by the instructor during the laboratory sessions. Students should be sure they understand this usage.
11. Students should clean up any supplies used and should return materials where they belong as instructed. Any material spilled should be cleaned appropriately. Report and hazardous spills or breakages.

12. Broken glass and sharp metal waste should be placed only in those receptacles marked for such disposal -- do not put these materials in normal trash receptacles.

13. Some chemical wastes may not be dumped into laboratory sinks. In such circumstances an appropriate container will be provided for this waste in the lab.

14. Organic waste resulting from animal dissection activities should be disposed of in the appropriate receptacle, not the ordinary trash receptacles.

15. Human organic materials (e.g., saliva and blood) must be disposed of in such a way as to eliminate any possibility for contamination and the spread of disease. Appropriate handling and disposal procedures will be explained when human materials are involved in the laboratory exercise.

16. After completing laboratory activities and clean up, students should wash their hands in the restroom to avoid spreading contamination and hazardous chemicals.

17. The laboratory is a place for learning. Therefore, eating, drinking, and playing around is prohibited during the laboratory session. Students exhibiting unsafe or inappropriate behavior in the lab may be asked to leave and may be given an "F" grade for the course.
LIST OF LABORATORY TOPICS

• Laboratory Introduction
• Separation and Identification of Biological Compounds
• Cell Structure
• Cell Membrane Properties
• Enzyme Catalysis
• Gas Exchange in Respiration and Photosynthesis
• The Light Reactions of Photosynthesis
• Mitosis, Meiosis, and Chromosomes
• Mendelian Genetics
• Molecular Biology Demonstration
• Population Demonstration
• Population Genetics
• Bacteria, Cyanobacteria, and Protozoa
• Algae and Fungi