UNIVERSITY OF HAWAII COMMUNITY COLLEGES
EXHIBIT II
PROPOSAL TO INITIATE, MODIFY OR DELETE A COURSE
CCCM #6100
(July 26, 1979)

TYPE OF ACTION (circle appropriate)
A. Addition
1. Regular
2. Experimental
3. Other __________________________ (specify)
B. Cancellation
C. Modification
1. in credits
2. in title
3. in number or alpha
4. in prerequisites
5. Other __________________________ (specify)

2. NEW ALPHA, NUMBER AND TITLE
PHYS 152L, College Physics Laboratory II

3. CREDITS

4. OLD ALPHA, NUMBER AND TITLE
N/A

5. CREDITS
N/A

6. NEW DESCRIPTION
Experiments in electricity, magnetism, optics, and modern physics.

7. PREREQUISITES OR RECOMMENDED PREPARATION
Credit or registration in PHYS 152

8. STUDENT CONTACT HOURS PER WEEK
Lecture 3 Lab ___ Other (specify)

9. PROPOSED DATE OF FIRST OFFERING
Spring 1986

10. THIS COURSE IS (REQUIRED) (ELECTIVE) FOR THE Arts and Science PROGRAM

11. THIS COURSE (WILL BE REQUIRED) (MAKES NO CHANGE) IN THE NUMBER OF CREDITS REQUIRED FOR THE PROGRAM.

12. SIMILAR COURSES OFFERED ELSEWHERE
College(s): UHM
HCC

PHYS 151-152L - College Physics Laboratory
PHYS 151-152L - College Physics Laboratory

13. THIS COURSE IS (ALREADY ARTICULATED) (APPROPRIATE FOR ARTICULATION) (NOT APPROPRIATE FOR ARTICULATION)

PROVIDE DETAILS OF EXISTING OR DESIRED ARTICULATION (Date, college(s), purposes, pre-major or major, etc.):
Spring 1985; UH Manoa; for students in the college of Arts and Sciences where it meets Natural Science core requirements and is also required for some degrees.

14. REASON FOR INITIATING, MODIFYING OR DELETING COURSE OR OTHER PERTINENT COMMENT:
This lab course will be a companion laboratory course to be coupled with PHYS 152 which is also being proposed at this time (See PHYS 152 Course Proposal).

REQUESTED BY Math/Science David M. Lumia 10-19-84
Department/Division Chairperson Date

APPROVED BY Juan K. Okumura 10-29-84
Curriculum Committee Date

(Other required campus signature) 11-12-84
Date

Dean of Instruction 1/20/85
Provost Date

10/32/85
WCC CURRICULUM REVIEW FORM I
FORM FOR COURSE PROPOSALS

A. Information Needed for Processing ALL Course Proposals

Course Title: PHYS 152L: College Physics Laboratory II

Transfer X Non-transfer

Submitted ___________________________ David W. Shinn ___________________________

Date ___________________________

1. Course Objectives:
   Upon completion of this course the student should:
   a. have a general understanding of the basic procedures and methods of experimental analysis as applied to a selected group of fundamental topics in physics (see lab schedule);
   b. have the ability to comprehensively record work performed in a laboratory environment in a manner exhibiting both organization and proper documentation;
   c. have an understanding and working knowledge of experimental data and error analyses as well as problem solving, and;
   d. have a keener awareness of some types of environmental factors which can affect the outcome of an experimental approach.

2. Provide details of additional staff, equipment facilities, library/media material and equipment, other financial support that would be required to implement the new course or the course modification.
   (REFER TO ATTACHED BUDGET SHEETS)
   Has this additional cost been included in the budget for the proposed date of offering? Include in estimate of actual cost of supplies and equipment in addition to cost already budgeted by the discipline.

   a. Staff: This course will be part of the regular work load assignment for the new 1.0 position in Physics and Physical Sciences. This course will not in itself necessitate the assignment of overload or the hiring of a lecturer.
   b. Equipment Facilities: The need for equipment facilities can be met by the utilization of the existing science laboratories and storage areas in the Iolani building.
   c. Equipment: To equip this laboratory course for 6-8 medium to high quality independent lab stations, a budget of $32,603 is required as detailed in attached sheets.
   d. Educational Supplies: A first year of $1,460 is required for initial purchase of accessories for equipment, and expendable supplies for new course (includes demonstration apparatus for PHYS 151-152 lecture course as well as computer diskettes for computer-assisted instruction).
   e. The budget sheets attached are for PHYS 151-151L and PHYS 152-152L.
THREE YEAR SUMMARY BUDGET FOR PROPOSED PHYSICS COURSES

Courses: PHYSICS 151-151L and 152-152L
Instructor: David W. Shinn

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Supplies</th>
<th>Equipment</th>
<th>Total</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984-1985</td>
<td>$1,460</td>
<td>$8,000</td>
<td>$9,460</td>
<td>Primarily to equip a 4 station Physics 151L course with Oscilloscopes ($2,400), precision air tracks ($1,000) and other equipment items ($5,600) which can also be used in PHYS 152L.</td>
</tr>
<tr>
<td>1985-1986</td>
<td>1,533</td>
<td>10,000</td>
<td>11,533</td>
<td>Primarily used to equip 4-station Physics 152L with additional purchase of oscilloscopes and precision air tracks. (each require 1-2 of each).</td>
</tr>
<tr>
<td>1986-1987</td>
<td>1,610</td>
<td>10,000</td>
<td>11,610</td>
<td>Final stages of equipment acquisition for 6-8 station laboratories for both Physics 151L and Physics 152L</td>
</tr>
<tr>
<td>TOTALS</td>
<td>$4,603</td>
<td>$28,000</td>
<td>$32,603</td>
<td></td>
</tr>
</tbody>
</table>

NOTES: 1/ Included under supplies also are lecture (i.e., 151-152) class demonstration apparatus and computer aided instructional media such as pre-programmed diskettes for student tutorial use in Lono Computing Center.

2/ This equipment is primarily used in the laboratory (i.e., 151L-152) classes but may be used in lecture demonstrations.

3/ Values obtained by multiplying previous FY budget for supplies by 1.05 to account for inflation.
B. Information Needed to Process Course Modification Proposals ONLY

1. What change is proposed in the course? Provide specific information on both the new and the old course.

N/A

2. Is the submitted change enough to require a change in course identification? If so, explain thoroughly.

N/A

3. If the course is articulated with any four year program, give details and dates of agreements(s) and explain any impact the proposed change may have on articulation.

N/A

4. Will this change alter the number of hours required to attain a certificate or degree? If so, provide details and justification.

N/A
C. Information Needed to Process New Course Proposals

1. Course relation to EDP of the College:
   This course supports the College's goal of serving the needs of individuals who are seeking to meet baccalaureate program requirements for four-year colleges in Hawaii and in other locales.

2. Program course in (Please give some information concerning the status of the program and the relation of the course to the program):
   In the College of Arts and Sciences at UH Manoa, this lab course meets a program requirement in a number of science related degree programs and also fulfills core requirements for non-science majors. At WCC this course will meet the AA degree natural sciences core requirement.

3. Independent work by students:
   Reading lab handouts in preparation for upcoming experiments and "pop" quizzes; answer questions dealing with various experiments, and; preparing laboratory reports.

4. Rationale for articulation with UHM General Education Core--attach Windward Community College Form 3 for transfer course criteria, if appropriate:
   This course is similar to PHYS 152L: College Physics Laboratory II that is offered by the physics department at UH Manoa (also, see attached Form 3 for transfer criteria).

5. If similar to an upper division course, explain community college application:
   N/A

6. If course is experimental and unique to Windward Community College, indicate additional rationale and impact on college curriculum, if appropriate:
   N/A

D. Attach Course Outline for New Course Proposals or for Course Modifications that Involve Changes in Content, Syllabus, or Time Schedule. Use the Windward Community College FORM 2: General Course Outline for Proposed Course. A student course outline may be submitted, if it indicates the syllabus, content, and time schedule of the proposed course. The student lab course outline submitted with this form provides this information.
GENERAL OUTLINE FOR PROPOSED COURSE

Course: PHYS 152L: College Physics Laboratory II
Transfer: X Nontransfer: New: X Modified: 

1. COURSE DESCRIPTION:
Experiments in electricity, magnetism, optics, and modern physics.

2. HOURS PER WEEK: LEC: ___ LAB: 3 OTHER: ___ TOTAL: 3

3. PREREQUISITIES:

COREQUISITIES:

RECOMMENDED PREPARATION: Knowledge of Analytic Geometry, Algebra, and Trigonometry

4. SPECIFIC COURSE OBJECTIVES:
See attached student course outline.

5. TEXTBOOK AND MATERIALS:
See attached student course outline.

6. REFERENCE MATERIAL SAMPLES:
See attached student course outline.

7. AUXILIARY MATERIALS:
See attached student course outline.
WCC CURR. FORM 3

TRANSFER COURSE CRITERIA

Course__PHYS 152L: College Physics Laboratory II__________

New______ Modified__________

Submitted by___David W. Shinn______________________________Date__________

1. RATE OF STUDENT PROGRESS:

Refer to course schedule for weekly experimental topics.

2. BASIC SKILLS NEEDED:

13th grade reading level;
Knowledge of Analytic Geometry, Algebra, and Trigonometry

3. AMOUNT OF SKILLS AND INDEPENDENT WORK REQUIRED:

Independent work required in laboratory data recording and report writing. Time
management skills, i.e., submitting reports by deadline due-dates, and application
and transfer of basic physics concepts to problem solving.

4. REASONING REQUIRED:

Must be able to interpret experimental data and relate these to theories and models
that help to explain such observations. Must be able to solve problems that
require the application of physics concepts and mathematical skills.

5. CONCEPTUAL COURSE LEVEL:

Application of the basic concepts of physics to the planning, execution, and
reporting of experimental operations, data and error analyses, results, and
discussion.

6. BACKGROUND KNOWLEDGE PREREQUISITE:

Credit or registration in PHYS 152.

7. MASTERY LEVEL EXPECTED:

See course outline for detailed specifications.

8. COUNTERPART IN 4 YEAR CAMPUS:

PHYS 152L: College Physics Laboratory (UH Manoa)

9. COURSE USE IN MAINLAND ACCREDITED SYSTEMS:

Typically there is a companion laboratory course coupled with a standard non-
calculus college physics course which is taught at many 4-year colleges and
universities.
WINDWARD COMMUNITY COLLEGE

OUTLINE OF COURSE OBJECTIVES

COURSE NAME: COLLEGE PHYSICS LABORATORY II
COURSE ALPHA: PHYS 152L
CREDIT HOURS: 01
CATALOG DESCRIPTION: Experiments in electricity, magnetism, optics, and modern physics.

REQUIREMENTS COURSE SATISFIES:
   AT WCC: Meets AA degree natural sciences core requirement.
   AT UH MANOA: May meet natural sciences requirement.
PREREQUISITES: Credit or registration in PHYS 152.

RECOMMENDED BASIC SKILLS LEVELS: Knowledge of Analytic Geometry, Algebra, and Trigonometry
READING LEVEL OF TEXT(S): 13th grade

ACTIVITIES REQUIRED AT OTHER THAN REGULARLY SCHEDULED CLASS TIMES: None

INSTRUCTOR: DAVID W. SHINN
OFFICE: Iolani 106
OFFICE HOURS: To be announced at the start of the course.
OFFICE PHONE: 235-7321
EFFECTIVE DATE: January 1986
A. Goal of the Course

The primary intention of this basic physics lab is to provide the student with an in-depth feeling for the "scientific method" and its various parts, through the use of physical investigations. Although many of the "hypotheses" which will be considered have previously been accepted as "laws" via numerous experimental approaches, the purpose here will be to carry out independent "experiments" whose "results" may possibly be used to evaluate and/or verify existing contemporary scientific facts, theories, and/or laws.

B. Objectives of the Course

Upon completion of this course, you should...

1. have a general understanding for the basic procedures and methods of experimental analysis as applied to a selected group of fundamental topics in physics; (see lab schedule);

2. have the ability to comprehensively record work performed in a laboratory environment in a manner exhibiting both organization and proper documentation;

3. have an understanding and working knowledge of experimental data and error analyses as well as problem solving, and;

4. have an increased awareness of some types of environmental factors which can affect the outcome of an experimental approach.

C. Performance Criteria of the Course

1. "Pop" Quizzes: The student will come prepared for lab. This entails reading the lab handouts as well as the appropriate section(s) in the textbook and classnotes from the lecture class. At the discretion of the instructor, "pop" quizzes will be administered prior to the start of some classes to check individual preparation. Minimum level of achievement for the criterion is 60%.

2. Laboratory Notebooks: The student will maintain an individual laboratory notebook in which all data should be entered, calculations performed, and summary write-ups done for each experiment. The instructor will check the notebook for data and results after the completion of each experiment. Minimum level of achievement for this criterion is 60%.

3. Attendance: Each student, working either individually or in a group, must perform all of the experiments. In the event that a laboratory session is missed due to unforeseen reasons, it may be made up in one of two ways:
   i) By attending the make-up session at the end of the semester, or
   ii) By informal arrangement with the lab instructor.

This criterion is evaluated on a Cr/F basis.
4. Lab Reports: The student will hand individual lab reports in for eight of the 13 experiments. Reports are due one week after completion of the experiment. In the event that more than eight reports are handed in, only the first eight received will be counted toward the final grade. Minimum level of achievement for this criterion is 60%.

Note: At the first lab meeting, the student will receive a handout describing the general format which notebooks and reports should follow.

D. Method of Grading

1. The student must meet the minimum level of achievement for Criteria 1-4 in order to receive a passing grade for the course. Failure to satisfy the minimum level of achievement for any one of these criteria will result in a grade of "F".

2. The assignment of points to the different objectives will be as follows:

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Description</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion 1</td>
<td>&quot;pop&quot; quizzes</td>
<td>150</td>
</tr>
<tr>
<td>Criterion 2</td>
<td>lab notebooks</td>
<td>250</td>
</tr>
<tr>
<td>Criterion 3</td>
<td>lab completion</td>
<td>Cr/F</td>
</tr>
<tr>
<td>Criterion 4</td>
<td>lab reports</td>
<td>600</td>
</tr>
</tbody>
</table>

3. Letter Grades will be assigned as follows:

- **A**: 90% or above of total points; meets minimum level of achievement in Criteria 1-4.
- **B**: 80-89% of total points; meets minimum level of achievement in Criteria 1-4.
- **C**: 70-79% of total points; meets minimum level of achievement in Criteria 1-4.
- **D**: 60-69% of total points; meets minimum level of achievement in Criteria 1-4.
- **F**: Below 60% of total points; failure to meet minimal level of achievement in Criteria 1-4; informal or incomplete official withdrawal.
- **Cr**: Achievement of Criteria 1-4 at C level or higher. Written consent of the instructor is required.
- **NC**: No credit given; achievement of Criteria 1-4 at less than C level under the Cr/NC option.
- **I**: Incomplete. This is a temporary grade given at the instructor's option when a student has failed to complete a small part of a course because of circumstances beyond his or her control. The student is expected to complete the course by the last day of instruction of the succeeding semester. If this is not done, the I will revert to the contingency grade identified by the instructor.
- **W**: Official withdrawal after the third week of a 16-week course and prior to the end of the 10th week of a 16-week course.
"Pop" quiz retakes will not be allowed. Make-up quizzes will not be given and only in cases of legitimate no-shows will these be stricken or omitted from the final grade assessment. Penalties for late reports will be 25% reduction per day late. Waiver of minimum levels of achievement are given only in unique situations at the instructor's discretion. Students involved in cheating systems will be dealt with in accordance with the WCC/UH guidelines concerned with academic dishonesty.

E. Textbook and Other Instructional Materials

1. Required - General Physics Laboratory II by UH Manoa Physics Department.
   - Lab handouts for experiments done in weeks 5 and 14 made available by instructor.
   - A quadrille notebook
   - A calculator with trigonometric functions

2. Reference Materials - Other introductory physics texts and handouts on reserve in the open lab, library, or provided by the instructor.

F. Mode of Instruction

The instructor will give a preliminary discussion of each experiment at the start of each period, with demonstrations and explanations pertaining to the use of the apparatus and the objective(s) of the experiment. This discussion is intended to supplement, rather than replace, the student's preparation prior to coming to class. Post-laboratory tutorial sessions will also be given in order to answer any follow-up questions students may have concerning each experiment.

G. Other Information

1. Class Schedule (see attached)
2. Students may have to purchase handouts and supplies in the bookstore.
3. This course may not be satisfied through the credit by examination option.
4. Students enrolled in PHYS 152L are advised that certain required course activities are inherently dangerous. Students are therefore required to read the inherently dangerous activities outlined below to become aware of the dangers experienced in this course. Students will acknowledge their consideration of these dangers by signing an "Assumption of Risk and Release" Form.

--- Inherently Dangerous Activities in PHYS 151L

a. Students will encounter low doses of radioactive emission from source materials not requiring licensing by the U.S. Nuclear Regulatory Commission.

b. Students will be required to make electrical connections during the course of the semester which could potentially be harmful.

c. Students may come in contact with materials and chemicals from other courses in lab (e.g., Chemistry) and should not move or touch unknown items; exercise reasonable care, etc.

In light of these inherent dangers, the student will be required to wear safety glasses and footwear while in the laboratory environment.