UNIVERSITY OF HAWAII COMMUNITY COLLEGES
PROPOSAL TO INITIATE, MODIFY OR DELETE A COURSE

EXHIBIT II
CCCM #6100
(July 26, 1979)

1. TYPE OF ACTION (circle appropriate)
   A. Addition
      1. Regular
      2. Experimental
      3. Other
   B. Deletion

2. NEW ALPHA, NUMBER AND TITLE
   CHEM 161-L General Chemistry Laboratory I

3. CREDITS
   1

4. OLD ALPHA, NUMBER AND TITLE

5. CREDITS

6. NEW DESCRIPTION
   First semester laboratory experiments illustrating fundamental principles of chemistry.

7. PREREQUISITES OR RECOMMENDED PREPARATION
   Credit or registration in Chem 161.

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

9. PROPOSED DATE OF FIRST OFFERING
   Fall 1986

10. THIS COURSE IS (REQUIRED)(ELECTIVE) FOR THE ________ PROGRAM

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

12. SIMILAR COURSES OFFERED ELSEWHERE
    College(s): Numerous
    Alpha, Number, Title: UH Manoa Chem 161-L (Fall 1986)

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.): UH Manoa Chemistry Department is implementing changes in their Freshman Chemistry course numbers in order to offer a two semester lecture-laboratory sequence.

14. REASON FOR INITIATING, MODIFYING OR DELETING COURSE OR OTHER PERTINENT COMMENT:
   The present system of offering a special section of Chem 151-L to Chem 161 students is confusing during enrollment, is inappropriate since Chem 161 is a more rigorous course than Chem 151 and also can lead to difficulties in transferring credit.

REQUESTED BY Math/Science
   Department/Division
   Chairperson
   Date

APPROVED BY
   Curriculum Committee
   Dean of Instruction
   Date
   Date
   Date

WCC 3/85
WCC FORM FOR NEW COURSE PROPOSALS

Course CHEM 161-L Submitted by C. S. Noble Date ________

1. How is this course related to the educational needs and goals of the College/Department/Community as reflected in the EDP?
   This course ensures our program will be compatible with the UH Manoa program. This enhances transferability of the course to a four year institution while preparing the student for technical laboratory work.

2. Provide details of any additional staff, equipment, facilities, library/media material 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?
   None

3. Is a similar course taught elsewhere in the UH system? Yes (Fall 1986)
   If yes, provide details of how this course differs from existing similar courses.
   The course does not significantly differ from existing similar courses.

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 appropriate for transfer to a 4-year UH college, complete and attach WCC Form for Transfer Courses (blue).

WCC
3/85
WCC FORM FOR TRANSFER COURSES

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

Course CHEM 161-L Submitted by C. S. Noble Date

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

This is the first semester laboratory course to accompany the beginning chemistry course that is required for chemistry, biology and engineering majors and for several pre-professional areas.

2. Is this course taught or accepted by major accredited colleges or universities?

Yes

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.
OUTLINE OF COURSE OBJECTIVES

COURSE NAME: General Chemistry Laboratory

COURSE ALPHA: CHEM 161-L

CREDIT HOURS 01

CATALOG DESCRIPTION: Experiments introducing laboratory techniques and illustrating fundamental chemical principles; supplemented by films, demonstrations, and problem sessions. (3 hrs. lab.)

REQUIREMENTS COURSE SATISFIES:

AT WCC: Meets AA degree science lab requirements.

AT UH MANOA: May meet science lab requirement.

PREREQUISITES: Credit or registration in CHEM 161

RECOMMENDED BASIC SKILLS LEVELS: Credit or registration in MATH 130

READING LEVEL OF TEXT(S): 13th grade

ACTIVITIES REQUIRED AT OTHER THAN REGULARLY SCHEDULED CLASS TIMES: None

INSTRUCTOR: Dr. Clyde Noble

OFFICE: Iolani 106

OFFICE HOURS: To be announced at the first lab period

OFFICE PHONE: 235-7320

EFFECTIVE DATE: Fall 1987
A. Goals of the course:

1. To provide the student with an opportunity to participate in the type of experimental processes and activities that are an essential part of the scientific process for the chemist;

2. To enable the student to gain skills in manipulating apparatus, making observations, and writing clear and accurate reports; and,

3. To provide opportunities for the student to observe and experience the relationship between chemical principles and the actual behavior of matter in the physical environment.

B. Objectives of the course:

1. The student will complete a minimum of fourteen experiments, using the appropriate laboratory techniques and procedures. No credit will be awarded to the student for any unexcused absence; on the other hand, if a student has a legitimate reason for missing a laboratory class, special projects or field studies may be substituted for no more than two of the scheduled experiments. These alternatives will be acceptable only if the projects are found to be relevant and of sufficient academic merit after consultation with the instructor. Minimum level of achievement will be established on a Cr/NC basis for this objective.

2. In order to evaluate the student's level of achievement for each experiment, two criteria will be considered: 1) quizzes, and 2) lab reports.

   QUIZZES--Beginning with the 2nd lab period, weekly quizzes will be given at the start of the period. These quizzes are designed primarily to test the student's overall grasp of the previous week's experimental subject matter; however, these quizzes will also be used to test the student's level of preparation for that day's activities in the lab.

   LAB REPORTS--The student will write a report for each of the experiments performed, using the report form that will be presented in class or that which accompanies the purchased laboratory separate. The evaluation of the report will be based on the completeness and accuracy of the information contained in the report.

   Minimum level of achievement: 60% overall

C. Method of Grading:

Letter grades will be assigned as follows:

A--completion of 14 laboratory exercises with an average score on the criteria in objective 2 above of at least 90%
B--completion of 14 laboratory exercises with an average score on the criteria in objective 2 above of 80-89%
C--completion of 14 laboratory exercises with an average score on the criteria in objective 2 above of 70-79%
D--completion of 14 laboratory exercises with an average score on the criteria in objective 2 above of 60-69%
F--less than minimal passing achievement
Cr--See Windward Community College Catalog
NC--
I--
W--
D. Mode of Instruction:

This course will involve individual students performing experiments in the laboratory, with class discussions of the techniques and results of the experiments. There will be individual help for the students wherever this is needed. In addition, demonstrations and films will be used to illustrate certain techniques and/or concepts.

E. Textbook:


F. Other Information:

1. Course schedule------See attached sheet.

2. SAFETY NOTE: Footwear is required in the laboratory at all times. Safety glasses must be worn whenever experiments are being performed.

Be sure that you KNOW the location and procedure for operation of the SAFETY SHOWER and the FIRE EXTINGUISHER.

At all times work carefully and FOLLOW the INSTRUCTIONS given in the lab modules and by the instructor.

In view of the inherently dangerous activities implied here and on a separate safety guidelines sheet which will be distributed on the 1st day of class, each student will be required to sign an "Assumption of Risk and Release" Form.
SCHEDULE FOR CHEM 161-L

<table>
<thead>
<tr>
<th>Date</th>
<th>Experiment</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept 8</td>
<td>#1</td>
<td>35</td>
</tr>
<tr>
<td>15</td>
<td>2</td>
<td>51</td>
</tr>
<tr>
<td>22</td>
<td>3</td>
<td>63</td>
</tr>
<tr>
<td>29</td>
<td>5</td>
<td>81</td>
</tr>
<tr>
<td>Oct 6</td>
<td>6</td>
<td>87</td>
</tr>
<tr>
<td>20</td>
<td>7</td>
<td>97</td>
</tr>
<tr>
<td>27</td>
<td>8</td>
<td>105</td>
</tr>
<tr>
<td>Nov 3</td>
<td>9</td>
<td>115</td>
</tr>
<tr>
<td>10</td>
<td>11</td>
<td>139</td>
</tr>
<tr>
<td>17</td>
<td>12</td>
<td>153</td>
</tr>
<tr>
<td>24</td>
<td>14</td>
<td>177</td>
</tr>
<tr>
<td>Dec 1</td>
<td>15</td>
<td>191</td>
</tr>
<tr>
<td>8</td>
<td>16</td>
<td>205</td>
</tr>
<tr>
<td>15</td>
<td>Check out and Make-up.</td>
<td></td>
</tr>
</tbody>
</table>