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

CCC#6100
(July 26, 1979)

TYPE OF ACTION (circle appropriate)

A. Addition
1. Regular
2. Experimental
3. Other
   (specify)

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
CHEM 151, Elementary Survey of Chemistry

3. CREDITS
   3

4. OLD ALPHA, NUMBER AND TITLE
CHEM 151, Elementary Survey of Chemistry

5. CREDITS
   3

6. NEW DESCRIPTION
   Same

7. PREREQUISITES OR RECOMMENDED
   PREREQUISITEx MATH 24
or equivalent or consent of instructor
   Other (specify)
   Recommended: MATH 25 or equivalent

8. STUDENT CONTACT HOURS PER WEEK
   3 lecture  Lab
   FIRST OFFERING

9. PROPOSED DATE OF FIRST OFFERING
   8/12/79

10. THIS COURSE IS (REQUIRED) (ELECTIVE) FOR THE
    Arts and Sciences (AA degree) 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):
    UHM  
    HCC

13. THIS COURSE IS (ALREADY ARTICULATED) (NEEDS ARTICULATION)
    Provide details of existing or desired articulation (Date, college(s), purposes, pre-major or major, etc.):
    Presently articulated with 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:
   The reason for adding a MATH 24 or equivalent prerequisite to CHEM 151 at WCC is to insure that the students entering the course at least have an awareness that basic algebra techniques are a fundamental aspect to a first course in Chemistry. This is also along the same line of reasoning which requires high school students to take a year of algebra (i.e., MATH 24-25 at WCC) prior to their first experience with Chemistry.

REQUESTED BY
MATH/SCIENCE

David M. Furuta
Department/Division
Chairperson
Date

APPROVED BY

Jean K. Okumura
Curriculum Committee
Date

Charles P. Barten, Faculty Senate Chair
Date

Dean of Instruction
Date

Provost
Date
1. Subject Area (one or more instructors in the area)

   - James R. Strapper
   - Barry W. Kim
   - Dorothy H. Hunt

   signatures

2. Division

   David M. Hunt

   department chairperson

3. Administrative Confirmation of System Requirements

   David M. Hunt for Jeff Hunt

   signature

4. Curriculum Committee Review

   Approved: 3/8/85

   Disapproved: 3/8/85

   Reason:

   Judy K. Okamura

   Curriculum Committee Chairperson
WCC CURRICULUM REVIEW FORM I
FORM FOR COURSE PROPOSALS

A. Information Needed for Processing ALL Course Proposals

Course Title: CHEM 151: Elementary Survey of Chemistry

Transfer X Non-transfer

Submitted David W. Shinn Date 3/5/85

1. Course Objectives:
   1. To provide the student with a dynamic and conceptual view of matter and the environment;
   2. To introduce the student to the logical methods used in chemistry; and,
   3. To present to the student the foundations of chemistry, to be used as preparation for further study or to be taken as an introductory course.

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.

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.

No additional staff, equipment facilities, library/media material, equipment, or other financial support would be required to implement this course modification.
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.

   Basically, the change proposed is to add a MATH 24 or equivalent prerequisite to CHEM 151 at WCC to insure that the students entering the course are mathematically proficient at this level and are aware of the fact that basic algebraic techniques are a fundamental aspect of a first course in Chemistry. Previously, there have been no prerequisites for this course.

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

   No.

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.

   This course is presently articulated with UH Manoa; it is a course for students in the college of Arts and Sciences where it meets Natural Science core requirements and is also required for some degrees. This proposed change should not impact any agreements of articulation with other campuses within the UH System since students should be proficient at the MATH 27 level prior to admission to UHM. (MATH 25 is the prerequisite at HCC, also.)

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

   No.
A. Campus: Windward Community College

B. Catalog description: Elementary Survey of Chemistry; CHEM 151 (3 credits)

Intended to provide the beginning student with a nonrigorous but adequate background in the fundamentals of chemistry. Suitable for students preparing for technical training in the life sciences and for those seeking a practical approach to chemical analysis. Also suitable as preparation for CHEM 171.

C. Normally followed by 152 and 152L and 253 as a two-or three-semester terminal sequence

Is a similar course offered at another campus? No

<table>
<thead>
<tr>
<th>Credit Number</th>
<th>Semester</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>Chem 151</td>
<td>Fall 1977</td>
<td>3</td>
</tr>
</tbody>
</table>

Course is required for AA Degree certificate or degree program

D. Proposed date of first offering: Fall 1977

E. Campus approval:

<table>
<thead>
<tr>
<th>Committee</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curriculum Committee</td>
<td>8/4/77</td>
</tr>
<tr>
<td>Dean of Instruction</td>
<td>8/4/77</td>
</tr>
<tr>
<td>Provost</td>
<td>8/4/77</td>
</tr>
</tbody>
</table>

FOR USE BY THE OFFICE OF THE CHANCELLOR

1. Assign Dept/Div Alpha | Assigned Course Number | Assigned Semester Credit Hours | Assigned Course Title
                        | CHEM                | 151                     | Elementary Survey of Chemistry

2. Request not processed for following reason:

Avoid reference in catalog description to courses not offered at WCC

Date: 8/18/77
WINDWARD COMMUNITY COLLEGE

OUTLINE OF COURSE OBJECTIVES

COURSE NAME: Elementary Survey of Chemistry
COURSE ALPHA: CHEM 151
CREDIT HOURS: 3

CATALOG DESCRIPTION: Intended to provide the beginning student with a nonrigorous but adequate background in the fundamentals of chemistry. Suitable for students preparing for technical training in the life sciences and for those seeking a practical approach to chemical analysis. Also suitable as preparation for CHEM 171. Normally followed by 152 and 152L and 253 as a two- or three- semester terminal sequence.

REQUIREMENTS COURSE SATISFIES:
   AT WCC: Meets AA degree science requirements
   AT UH, MANOA: may meet science requirement

PREREQUISITES: None.

RECOMMENDED SPECIAL PREPARATION: None.

RECOMMENDED BASIC SKILL LEVELS:
   Reading Level of Text: 12th grade
   Credit or registration in MATH 100

ACTIVITIES REQUIRED AT SCHEDULED TIMES OTHER THAN CLASS TIMES: No.

INSTRUCTOR: Pearl Takeuchi
OFFICE: Mahi 107
OFFICE PHONE: 235-0077 ext.
EFFECTIVE DATE: Fall Semester 1977
A. Goals of the Course:

1. To provide the student with a dynamic and conceptual view of matter and the environment.

2. To introduce the student to the logical methods used in chemistry.

3. To present the student the foundations of chemistry to be used as preparation for further study or to be taken as an introductory course.

B. Objectives of the Course:

1. THE STUDENT WILL IDENTIFY AND APPLY THE BASIC CONCEPTS, PRINCIPLES AND THEORIES OF CHEMISTRY BY SUCCESSFULLY COMPLETING THE CHAPTER OBJECTIVES AT THE MINIMUM LEVEL OF ACHIEVEMENT.

See the supplement to the course outline for a complete statement of chapter objectives, specific statement of tasks, and minimal levels of achievement.

In order to evaluate the level of achievement of the objectives, criterion tests will be given at the time of completion of each chapter in the text. There will also be opportunities for any student to retake alternative forms of the criterion tests if necessary. This may be done by individual appointment with the instructor. The student should make every effort to arrange for a conference with the instructor on his/her original criterion test before attempting a retest. If a retest is taken, the higher grade will be recorded.

The supplement to the course outline includes sample test items to indicate to the student exactly how each objective will be evaluated.

2. The student will demonstrate the ability to synthesize and apply basic chemical concepts, principles and theories by achieving a minimum score of 50% on a final examination that includes all of the objectives of the course.

3. The student will demonstrate an understanding of atomic structure and the mole concept by competing and submitting the student guide sheet for five sound film strip kits chosen from the following list. These kits are on reserve in the school library. The minimal level of achievement for this objective requires the completion of two of these study kits. The supplement to the course outline indicates where each kit listed below coincides with the concepts covered in the course.

   a. Solo Learn Kits: Atoms and Molecules
      Introduction to Electronic Structure of Atoms
      Bond Type and Properties of Matter
      Polar Covalence
      Introduction to Mole Concept
b. Chemistry: Dissecting the Atom: What's In an Atom 7 two count
   Understanding what's In an Atom 7 as one
   Where are the Electrons In an Atom?
   Shells, Subshells and Orbitals
   Putting an Electron In Its Place
   The Outer Shell
   Energy Levels and Electron Dot Diagrams

For these film strips write the answers to the questions that are given
in the student guide on a separate sheet of paper.

C. Chemical Symbols, Formulas and Equations: Symbols As a Convenient Shorthand 2 for
   Formula Writing 1
   An Introduction To Balancing Equations
   Balancing Equations-Learning By Practice
   2 count as 1

<table>
<thead>
<tr>
<th>Grade Objective</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>% of semester grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chapter Tasks</td>
<td>90-100</td>
<td>80-89</td>
<td>70-79</td>
<td>50-69</td>
<td>60</td>
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<tr>
<td>Final Exam</td>
<td>90-100</td>
<td>80-89</td>
<td>70-79</td>
<td>50-69</td>
<td>20</td>
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<tr>
<td>Study Kits</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>

1. To receive a passing grade in the course you must meet the
   minimum level of achievement for objectives 1, 2, and 3.

2. In calculating the semester grade, the average of the chapter
tests will represent 60% of the grade; the grade on the final
test will represent 20% of the grade; and the completion of the
study kits will represent 20% of the semester grade.

3. The course grades will be assigned as follows.

   A--weighted average of 90-100% on objectives 1-3
   B--weighted average of 80-89% on objectives 1-3
   C--weighted average of 70-79% on objectives 1-3
   D--weighted average of 50-69% on objectives 1-3

   Cr--credit equivalent to the grade of D or better. Student must
       inform the instructor of the choice of this option
       by the tenth week of the semester.

   W--formal withdrawal from the course
   I--incomplete; student agrees to complete the objectives within
       four weeks after the semester ends

   N--no grade assigned; unsatisfactory completion of objectives
       1, 2, and/or 3 or informal withdrawal from the course
D. **Mode of Instruction:**

The lecture/discussion mode of instruction will be very important in this course. However, there will be a variety audio-visual modes, such as movies, film strips, and film loops, used as well. Some of these may be used by the individual student in the library or the audio-tutorial center. Whenever possible, self paced instructional material will be made available to the student. Special problem solving and tutorial sessions may also be arranged to meet specific student needs.

E. **Textbook:**


F. **Other Information:**

**Course Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Chapter</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Chemical Concepts and Measurements</td>
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<tr>
<td>2</td>
<td>2</td>
<td>Chemical Elements and Compounds</td>
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<tr>
<td>3</td>
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<td>Atomic Structure</td>
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<td>4</td>
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<td>Chemical Bonding</td>
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<td>Chemical Bonding</td>
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<tr>
<td>6</td>
<td>5</td>
<td>Periodic Properties of Elements</td>
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<td>7</td>
<td>6</td>
<td>Nomenclature of Compounds</td>
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<td>8</td>
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<td>Gases</td>
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<td>15</td>
<td>14</td>
<td>Organic Chemistry</td>
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<tr>
<td>16</td>
<td>15</td>
<td>Chemistry of Life: Biochemistry</td>
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<tr>
<td></td>
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<td>Nuclear Energy</td>
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