**UNIVERSITY OF HAWAII COMMUNITY COLLEGES**

**EXHIBIT II**

**PROPOSAL TO INITIATE, MODIFY OR DELETE A COURSE**

**CCCM #6100**

(July 26, 1979)

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**TYPE OF ACTION (circle appropriate)**

<table>
<thead>
<tr>
<th>A</th>
<th>Addition</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Deletion</td>
</tr>
</tbody>
</table>

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**

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2. **NEW ALPHA, NUMBER AND TITLE**

AG 045 Irrigation Principles and Design

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4. **OLD ALPHA, NUMBER AND TITLE**

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6. **NEW DESCRIPTION**


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7. **PREREQUISITES OR RECOMMENDED**

Math 24 or Equivalent or consent of instructor

8. **STUDENT CONTACT HOURS PER WEEK**

4 Lecture 3 Lab

9. **PROPOSED DATE OF FIRST OFFERING**

Spring '87

10. **THIS COURSE IS (REQUIRED) (ELECTIVE) FOR THE**

Agriculture PROGRAM

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

12. **SIMILAR COURSES OFFERED ELSEWHERE**

<table>
<thead>
<tr>
<th>College(s):</th>
<th>Alpha, Number, Title:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maui Community College</td>
<td>AG 235 Irrigation Principles and Design</td>
</tr>
</tbody>
</table>

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.).

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

Irrigation is an integral aspect of Agriculture. A survey of people in the industry shows that irrigation knowledge is essential when employing individuals. It is essential for entrepreneurs, and is recommended by the East Oahu Farm Bureau. WCC does not presently offer an irrigation course.

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**REQUESTED BY**

Jean Okamura

Department/Division Chairperson Date

9/30/82

**APPROVED BY**

David W. Shim

Curriculum Committee Date

10/7/82

*Charles K. Sattler* (in behalf of the Faculty Senate) Date

7/26/82

Dean of Instruction Date

12/9/82
WCC FORM FOR NEW COURSE PROPOSALS

Course __AG 045____________ Submitted by D. Ringuette ______________ Date ____________

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

The introduction of Irrigation Principles and Design is in keeping with the EDP of the college. Irrigation has been referred to by community individuals as an essential aspect of agriculture which needs to be addressed. This course will better prepare students for employment in agriculture fields. WCC does not presently offer such a course. See page 53 of EDP.

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.

This course will be taught by the full-time Agriculture Instructor.

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.

MCC AG 235

This course will be more practical and contain less theory. It is strictly a vocational course. The goal of WCC's Agriculture program is vocational training.

4. Is this course experimental and/or unique to Windward Community College? ___yes___ If yes, provide rationale and details of its impact on the College curriculum.

This course will better prepare students for farming and/or employment in the field of agriculture. The course will provide vocational training in agriculture.

5. Is a similar course taught on the upper division level by a 4-year UH college? ___yes___ If yes, explain why this course is appropriate at the lower division or how it differs from its upper division counterpart.

This course will be more practical and contain much less mathematics theory involving fluid flow than AE 435 at UH Manoa.

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).
WINDWARD COMMUNITY COLLEGE

OUTLINE OF COURSE OBJECTIVES

COURSE NAME: Irrigation Principles and Design
COURSE ALPHA: AG 45
CREDIT HOURS 3

CATALOG DESCRIPTION: Fundamentals of irrigation principles, plant, soil, and water relationships, soil moisture sensing devices, delivery systems, set-up of drip, sprinkler, and surface irrigation systems, use of chemigation.

REQUIREMENTS COURSE SATISFIES:
AT WCC: Meet WCC requirements for Agriculture Technology
AT UH MANOA: None

PREREQUISITES: Math 24, or Equivalent, or consent of Instructor

RECOMMENDED BASIC SKILLS LEVELS: None

READING LEVEL OF TEXT(S): 12th

ACTIVITIES REQUIRED AT OTHER THAN REGULARLY SCHEDULED CLASS TIMES: One or two field trips on pre-scheduled Saturdays.

INSTRUCTOR: David Ringuette
OFFICE: Haloa 112
OFFICE PHONE: 235-7496
EFFECTIVE DATE: Spring '87
A. GOALS OF THE COURSE

1. To determine how much water to apply, when to apply water, and when to stop watering for maximum efficiency.

2. To become familiar with the various methods of irrigation and determine which method is best under various circumstances.

3. To basically design irrigation systems.

4. To become familiar with chemigation.

B. OBJECTIVES OF THE COURSE

1. Given the type of soil and climate, the student will be able to determine how much water is required for various crops.

2. The student will be able to describe the various irrigation methods and list the advantages and disadvantages of each.

3. The student will be able to describe how plants, soil, and water are related and how irrigation can increase plant yields.

4. The student will be able to design a basic drip, sprinkler and surface irrigation system.

5. The student will be able to properly use and select chemigation apparatus.

6. The student will be able to demonstrate how delivery systems and politics effect irrigation water usage.

7. The student will be able to describe how salinity effects crop yields and soil structure.

8. The student will be able to properly select irrigation filtering systems.

C. METHOD OF GRADING

1. Exams will be given three times. Each will be worth 100 points. Quizzes will be given ten times. Each will be worth 10 points.

2. Letter grades will be assigned as follows:

   A  90-100%
   B  80- 89%
   C  70- 79%
   D  60- 69%
   F  less than 60%

   of total possible points

Cr/NCr The grade of Cr will be awarded to those who have an average of 70% or higher. See Catalog.
I. Incomplete (see college catalog)

W. Official Withdrawal from the course by completing the appropriate forms, by the catalogs specified time.

3. Students unable to be present in class on the day of the exam are required to notify the instructor as soon as possible. It is the responsibility of the individual student to make up any exams or classes missed. Quizzes cannot be made up.

4. Students absent from class will be held responsible for the material covered in class, and any announcements made in class.

D. MODE OF INSTRUCTION

Lectures, demonstrations, guest speakers, field trips.

E. TEXTBOOKS

<table>
<thead>
<tr>
<th>WEEK</th>
<th>IRRIGATION</th>
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| 1-2  | Soil/Water Relationships  
|      | - moisture measuring devices |
| 3-4  | Plant/Water Relationships |
| 5    | Water use equations |
| 6    | Salinity  
|      | (Exam) |
| 7-8  | Sprinklers  
|      | - Design |
| 9-10 | Drip  
|      | - Design |
| 11   | Surface irrigation  
|      | - Design |
| 12   | Drainage  
|      | (Exam) |
| 13   | Chemigation |
| 14   | Delivery Systems |
| 15   | Hardware |
| 16   | Computer applications  
|      | (Final Exam) |