<table>
<thead>
<tr>
<th>TYPE OF ACTION (circle appropriate)</th>
<th>C. Modification</th>
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<tbody>
<tr>
<td>A. Addition</td>
<td>1. in credits</td>
</tr>
<tr>
<td>1. Regular</td>
<td>2. in title</td>
</tr>
<tr>
<td>2. Experimental</td>
<td>3. in number or alpha</td>
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<td>3. Other (specify)</td>
<td>4. in prerequisites</td>
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<td></td>
<td>5. Other (specify)</td>
</tr>
<tr>
<td>2. NEW ALPHA, NUMBER AND TITLE</td>
<td>3. CREDITS 03</td>
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<td>MICRO 130 GENERAL MICROBIOLOGY</td>
<td>4. OLD ALPHA, NUMBER AND TITLE</td>
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<td>N/A</td>
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<td>NEW DESCRIPTION</td>
<td>6. NEW DESCRIPTION Fundamentals of microbiology; growth and development, and classification of bacteria, viruses, protozoa, fungi and algae; roles of microorganisms in the environment and human affairs: medical microbiology, immunology, and applied microbiology for food, sanitation and public health.</td>
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<td>PREREQUISITES OR RECOMMENDED</td>
<td>7. PREREQUISITES OR RECOMMENDED None</td>
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<td>PREPARATION</td>
<td>8. STUDENT CONTACT HOURS PER WEEK</td>
</tr>
<tr>
<td></td>
<td>3 Lecture 0 Lab</td>
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<tr>
<td></td>
<td>9. PROPOSED DATE OF FIRST OFFERING Spring, 1985</td>
</tr>
<tr>
<td></td>
<td>10. THIS COURSE IS ( ) ELECTIVE FOR THE AA PROGRAM</td>
</tr>
<tr>
<td></td>
<td>11. THIS COURSE ( ) INCREASED ( ) DECREASED ( ) MAKES NO CHANGE IN THE NUMBER OF CREDITS REQUIRED FOR THE PROGRAM.</td>
</tr>
<tr>
<td>SIMILAR COURSES OFFERED ELSEWHERE</td>
<td>12. SIMILAR COURSES OFFERED ELSEWHERE College(s):</td>
</tr>
<tr>
<td></td>
<td>UHM, KCC, HCC, LCC, Kauai CC, Maui CC (All have Micro 130). General Microbiology</td>
</tr>
<tr>
<td></td>
<td>13. THIS COURSE IS ( ) APPROPRIATE FOR ARTICULATION</td>
</tr>
<tr>
<td></td>
<td>PROVIDE DETAILS OF EXISTING OR DESIRED ARTICULATION (Date, college(s), purposes, pre-major or major, etc.): See Attachment 1</td>
</tr>
<tr>
<td></td>
<td>14. REASON FOR INITIATING, MODIFYING OR DELETING COURSE OR OTHER PERTINENT COMMENT: Micro 130 will increase the course offerings for WCC students interested in the nursing and allied health fields, and is also suitable as a science option for the AA degree. The course will increase student accessibility to UHM as it can be used to satisfy the general education core requirements as well as the area requirements in a number of majors (see Attach. 1). It may also be transferred to the various health-related programs at UHM and KCC.</td>
</tr>
</tbody>
</table>

REQUESTED BY Math/Science David M. Smith 10-22-84
Department/Division Chairperson Date

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

(Other required campus signature) Date

Provost Date

1/84
LEVELS OF REVIEW OF COURSE PROPOSALS AT WCC

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

   Karl Takasuha
   10-23-84
   10/23/84

   Garry Sloto
   10/23/84

   2. Division
   David M. Smith
   department chairperson
   10-22-84
   10/22/84

3. Administrative Confirmation of System Requirements

   signature
   25-X-84
   date

4. Curriculum Committee Review

   Approved

   Disapproved

   Reason:

   Jean K.Y. Okunuma
   Curriculum Committee Chairperson
   10-29-84
   date
WCC CURR. FORM 3
TRANSFER COURSE CRITERIA

Course: Micro 130 General Microbiology

New: X  Modified:   

Submitted by: Dorothy H. Niimoto  Date:   

1. RATE OF STUDENT PROGRESS:
   See syllabus

2. BASIC SKILLS NEEDED:
   Reading and comprehension at college level.

3. AMOUNT OF SKILLS AND INDEPENDENT WORK REQUIRED:
   No special technical skills required. Student must be able to read with
   comprehension a college level microbiology textbook and any other assigned
   materials. Textbook reading, note-taking and voluntary research are to be
   conducted independently by the student.

4. REASONING REQUIRED:
   Ability to understand, assimilate and transfer the scientific reasoning involved
   in the establishment of the basic concepts in microbiology.

5. CONCEPTUAL COURSE LEVEL:
   Surveys, relative to microorganisms, the major theories in biology: evolution,
   the cell, genetics, disease and health, and ecology.

6. BACKGROUND KNOWLEDGE PREREQUISITE:
   None

7. MASTERY LEVEL EXPECTED:
   See course objectives

8. COUNTERPART IN 4 YEAR CAMPUS:
   Comparable to Micro 130 at UHM

9. COURSE USE IN MAINLAND ACCREDITED SYSTEMS:
   This is a standard introductory course in general microbiology and should be
   acceptable to mainland accredited systems.
Attachment 1

Micro 130  General Microbiology can be used to satisfy:

UH General Education undergraduate core requirements.

UH College of Arts and Sciences area requirements for the BA degree. Also for the following majors:

    Hawaiian Studies (with lab)*
    Microbiology
    Zoology

College of Engineering: Civil Engineering

College of Health Science and Social Welfare:

    School of Nursing (with lab)*
    Dental Hygiene (with lab)*

College of Tropical Agriculture:

    Horticultural Science
    Home Economics, Secondary School Training

KCC: Required for:

    Respiratory Therapy
    Dental Hygiene (Manoa program)
    Nursing, RN (Manoa program)

*Laboratory component, Micro 140, will not be offered at WCC at the present time.
Course: Micro 130 General Microbiology
Transfer: X Nontransfer: New: X Modified: 

1. COURSE DESCRIPTION:
Fundamentals of microbiology, growth and development, and classification of bacteria, viruses, protozoa, fungi and algae; roles of microorganisms in the environment and human affairs; medical microbiology, immunology, and applied microbiology for food sanitation and public health.

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

3. PREREQUISITIES:
None

4. SPECIFIC COURSE OBJECTIVES:
See course outline

5. TEXTBOOK AND MATERIALS:

6. REFERENCE MATERIAL SAMPLES:
Microbiology in Your Future. American Society for Microbiology
Stevens, G. The Biology of Fungi, Bacteria and Viruses
Sieburth, J.M. Sea Microbes
Immunology. Readings from Scientific American
Asher, I.M. Ed. Inadvertent Modification of the Immune Response
Jones, G.L. & G.A. Hebert, EDS. "Legionnaire" the disease, the bacterium and the methodology
Postgate, J. Nitrogen Fixation

7. AUXILIARY MATERIALS: Examples
Films: The Unseen World
Bacteria
GENERAL OUTLINE FOR PROPOSED COURSE

Course Micro 130

7. AUXILIARY MATERIALS: Examples
   Films: Evolution and the Origin of Life
   The importance of Microorganisms
   In Search of the Secrets of Life
   Virus
   The Germ Theory of Disease
   Cassette/Filmstrip Kits: Viruses: The Mysterious Enemy
   Lab Aids: Isolation of Bacteria
   Effects of Antibiotics Upon Bacteria
   Study of Insect Vectors

8. METHODS OF INSTRUCTION:

   See Course Outline

9. EVALUATION:

   See Course Outline

10. OTHER

11. SYLLABUS: CONTENT AND TIME SCHEDULE:

   Attached
## COURSE SYLLABUS

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to course; Introduction to microbiology</td>
</tr>
<tr>
<td>2</td>
<td>Procaryotic and eucaryotic cells; Cell structure</td>
</tr>
<tr>
<td>3</td>
<td>Microbial physiology; Bacterial environments, nutrition and growth</td>
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<tr>
<td>4</td>
<td>Macromolecules; Proteins, nucleic acids, their roles in metabolism</td>
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<td></td>
<td>EXAMINATION #1</td>
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<tr>
<td>5</td>
<td>The chemistry of life; The energy of life</td>
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<td>6</td>
<td>Photosynthesis, respiration; Respiratory types</td>
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<td>7</td>
<td>Microbial genetics; Microbial modifications, recombinant DNA technology</td>
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<td>EXAMINATION #2</td>
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<tr>
<td>8</td>
<td>The algae</td>
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<tr>
<td>9</td>
<td>The fungi; Medical mycology</td>
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<tr>
<td>10</td>
<td>The Protozoa; Medical protozoology</td>
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<tr>
<td>11</td>
<td>Medical bacteriology</td>
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<tr>
<td>12</td>
<td>Viruses and viral diseases</td>
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<tr>
<td></td>
<td>EXAMINATION #3</td>
</tr>
<tr>
<td>13</td>
<td>Mechanisms of pathogenicity; Host-parasite relationships</td>
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<tr>
<td>14</td>
<td>Immunology; Humoral and cellular immunity</td>
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<tr>
<td>15</td>
<td>Allergies and hypersensitivities, autoimmunity and gnotobiology</td>
</tr>
<tr>
<td>16</td>
<td>Ecological role of microbes; Aspects of applied microbiology</td>
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<tr>
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<td>EXAMINATION</td>
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### Grades

<table>
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<td>#2</td>
<td>100</td>
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<td>#3</td>
<td>100</td>
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<tr>
<td>Final Exam</td>
<td>150</td>
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<tr>
<td>Total</td>
<td>450</td>
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</table>
Letter Grades:  
A = 405 or more points  
B = 360 - 404  
C = 315 - 359  
D = 270 - 314  
F = Less than 270 points  

Exam Make-up: Permitted only when there is legitimate excuse, as determined by the instructor, for missing the scheduled exam. If an exam date is changed, it will be announced ahead of time. The student is responsible for knowing of the change.  


I (Incomplete): Permitted only under extenuating circumstances. The student must consult with the instructor for an I.  

Extra Credit: One independently researched project may be submitted for extra credit of up to 30 points. Requires prior consultation with, and consent of instructor.  

Project approval deadline:  
Report due by:  

WINDWARD COMMUNITY COLLEGE

OUTLINE OF COURSE OBJECTIVES

COURSE NAME: General Microbiology
COURSE NUMBER: Micro 130
CREDIT HOUR: 03

CATALOG DESCRIPTION: Fundamentals of microbiology; growth and development, and classification of bacteria, viruses, protozoa, fungi and algae; roles of microorganisms in the environment and human affairs: medical microbiology, immunology, and applied microbiology for food sanitation and public health.

REQUIREMENTS COURSE SATISFIES:

AT WCC: Natural science requirement for the AA degree.
AT UH MANOA: See attachment

PREREQUISITES: None

RECOMMENDED SPECIAL PREPARATION:

RECOMMENDED BASIC SKILLS LEVELS:

Reading Level of Text(s): College level
Other:

ACTIVITIES REQUIRED AT SCHEDULED TIMES OTHER THAN CLASS TIMES: None

INSTRUCTOR: Dorothy H. Niimoto
OFFICE: Iolani 106
TELEPHONE: 235-7319
EFFECTIVE DATE: January, 1985
OUTLINE OF COURSE OBJECTIVES

I. Goals: The major goals of the course are to

A. introduce students to the world of microorganisms and to increase their understanding of the basic nature of these organisms.

B. provide the student with a general understanding and appreciation of the wide range of activities in which microbes are involved in the biosphere.

C. enhance student understanding of the interactions and mutual impacts between the microbial world and human life.

D. increase the awareness of students to the extremely important role microbes play in both the inorganic and organic spheres and how they link the two.

II. Objectives: At the end of the course the student is expected to be able to describe and discuss

A. the main characteristics and distinguishing features of algae, bacteria, fungi, protozoa and viruses.

B. microbial metabolism and physiology.

C. the nutritional and environmental requirements of microorganisms.

D. microbial genetics, mechanisms for change and the genetic engineering of microbes.

E. microbial activity relative to materials decomposition, food spoilage, nutrient recycling, etc.

F. aspects of medical microbiology such as pathogenicity, immunity, allergies, antibiotics, etc.

G. common industrial microbial applications, such as in the production of alcoholic beverages, bread, cheese, etc.

H. The student is also expected to know and correctly use common microbiological terms.

III. Instructional Method

Lectures, discussions and demonstrations supplemented by assigned readings and audio-visual materials. Some simple, student-conducted experiments that demonstrate certain principles in microbiology.

IV. Evaluation

Competence will be demonstrated by satisfactory performance on in-class examinations covering the topics discussed, in-class activities, assigned readings, and by the satisfactory completion of any optional, independently researched projects contracted by the student.
V. Grading

Points will be assigned for each examination and any required reports. Letter grades are given at the end of the course and are assigned on a fixed scale based on the total possible points that may be earned.

\[
\begin{align*}
A &= 90 - 100\% \text{ of total possible points} \\
B &= 80 - 89\% \\
C &= 70 - 79\% \\
D &= 60 - 69\% \\
F &= \text{less than 60}\% \\
\end{align*}
\]

Cr Achievement of objectives of course at C level or higher. The Cr/NC option must be declared by the 10th week of classes. Requires written consent of the instructor.

NC No credit given; achievement of objectives at less than C level.

I Incomplete. This is a temporary designation 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, and prior to the end of the 10th week of the course.

VI. Student Responsibility

1. Students are expected to attend all lectures, participate in all required activities and complete all course assignments.

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

VII. Other Information

This course meets the science requirement for the AA degree at WCC, and may meet UH Manoa Natural Science requirements.
C. Information Needed to Process New Course Proposals

1. Course relation to EDP of the College:
   The introduction of Microbiology into the Science curriculum is in keeping with
   the EDP of the College. WCC's program in the biological sciences offers a number
   of courses that deal primarily with the macro-biological world in each of the
   basic disciplines. Conspicuously lacking are courses dealing with the very impor­
   tant microbiological world. Thus, it was proposed, in the 1979 EDP, that
   Microbiology be added to the science program. Micro 130 was selected as the
   initial offering on the basis of its introductory nature, wide application in
   costs in that no laboratory is required.

2. Program course in (Please give some information concerning the status of
   the program and the relation of the course to the program):
   At WCC, Micro 130 will meet the Natural Science requirement for the AA degree.
   For other programs elsewhere in the UH system, please refer to Attachment 1.

3. Independent work by students:
   Reading textbook and any other assigned materials, studying lecture notes and
   participating in optional learning activities such as voluntary independent
   research.

4. Rationale for articulation with UHM General Education Core--attach
   Windward Community College Form 3 for transfer course criteria, if
   appropriate:
   Micro 130, as taught at WCC, is similar in content to UHM's Micro 130 and
   is suitable for articulation. A completed WCC Form 3 is attached.

5. If similar to an upper division course, explain community college
   application:
   Not similar to upper division course.

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, con­
   tent, and time schedule of the proposed course.
   WCC Form 2, Student Course Outline and Syllabus are attached.
A. Information Needed for Processing ALL Course Proposals

Course Title: MICRO 130 GENERAL MICROBIOLOGY

Transfer X Non-transfer

Submitted Date

1. Course Objectives:
   See course outline (attached)

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 is required. The course can be taught by instructors presently at WCC.

   Equipment: table-top autoclave; use shared with AG/BOT classes (to be acquired through previously budgeted AG funds)
   incubator; approved for 1984-85 for AG/BOT budget
   oil immersion objective; approved for 1984-85 AG/BOT budget

   Sub Total

   Supplies: approved for 1984-85; for prepared microscope slides, demonstration lab kits, projection slides, transparencies and other educational support materials; $200-$300 estimated yearly additional expenses to replace depleted supplies and acquire additional materials estimated equipment maintenance

   Sub Total

   Library media materials: A few books and film kits are already available but need to be supplemented. Initial cost for additional reference and AV materials estimated at $500-$700, declining to $200-$300 per year for new materials and updating.
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.

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

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.

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