PHIL 110 – Introduction to Logic  
3 Credits

INSTRUCTOR: Clayton K. Akatsuka, Professor, Mathematics

OFFICE: Mana 112

OFFICE HOURS: MW 8:00 am - 8:30 am, 1:00 pm – 1:45 pm;  
TTh  8:00 am – 8:30 am, 11:00 am – 11:45 am;  
or by appointment.

TELEPHONE: 236-9279

e-mail: akatsuka@hawaii.edu

EFFECTIVE DATE: Spring 2013

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai‘i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O‘ahu’s Ko‘olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

Disabilities Accommodation Statement

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale ‘Akoakoa 213 for more information.

CATALOG DESCRIPTION

A study of the foundations and development of rational thought and communication and their applications. Includes analysis of deductive reasoning, formal and informal fallacies, and the use of symbolic systems.

WCC: FS
STUDENT LEARNING OUTCOMES

At the completion of this course, you should be able to:
1. Recognize fallacies of relevance, presumption, and ambiguity.
2. Employ rules of logic in deductive analysis.
3. Construct truth tables for deductive analysis.
4. Use symbolic systems for deductive analysis.

COURSE CONTENT

Concepts or Topics

• Basic Logical Concepts
  Arguments, Premises, Conclusions
  Deductive and Inductive Arguments
  Validity and Truth

• Analyzing Arguments
  Paraphrasing and Diagramming Arguments
  Recognizing Arguments
  Arguments and Explanations

• Fallacies
  Fallacies of Relevance
  Fallacies of Presumption
  Fallacies of Ambiguity

• Symbolic Logic
  Modern Logic and Its Symbolic Language
  The Symbols for Conjunction, Negation, and Disjunction
  Conditional Statements and Material Implication
  Testing Argument Validity on Truth Tables
  Statement Forms and Material Equivalence

• Methods of Deduction
  Formal Proof of Validity
  The Rules of Inference
  The Rules of Replacement
  Proof of Invalidity

Skills

1. Recognize premises and conclusions.
2. Differentiate inductive from deductive arguments.
3. Recognize invalid deductive arguments.
4. Paraphrase and diagram single arguments.
5. Recognize an argument.
6. Identify and explain fallacies of relevance, presumption, and ambiguity.
7. Construct your own examples of fallacies of relevance, presumption, and ambiguity.
8. Symbolize propositions and arguments.
9. Use truth tables to determine the validity of arguments.
10. Use truth tables to characterize statement forms as tautologies, self-contradictory, or contingent.
11. Construct formal proofs of validity (by using the rules of replacement).
12. Prove invalidity (by the method of assigning truth values).
COURSE TASKS

The mode of instruction is primarily discussion-problem solving where the initial portion of each class period may be utilized to discuss and clarify any questions from the preceding class meeting and/or assignment, and the remaining portion is used to discuss new material. Lectures, directed student explorations, group work, appropriate technologies, and projects will also be used as appropriate.

ASSESSMENT TASKS AND GRADING

The student will demonstrate competency in the objectives by participating in and completing all class activities, by completing and turning in all assignments as requested, by taking unit tests or quizzes and by taking a final exam over concepts and skill covered in the entire course. Class activities, unit tests or quizzes, and the final exam are to be taken in the classroom.

It is the student’s responsibility to obtain and complete all assignments that are given in any class meeting for which the student is unable to attend. Unless permission is granted by the instructor beforehand, assignments and tests must be completed and submitted to the instructor at the specified date and time.

Points will be assigned to each graded assignment, class activity, and exams as follows:

1. **Homework.** Homework sets will be graded on a 0 - 20 point scale. Assignments are due as indicated on the Course Calendar. Late homework may be accepted with grade penalty. All assigned homework are from the text, *The Worksheet*, by R. Loo.

2. **Class Activity.** Class activities are done in class as well as in Study Sessions and/or Supplemental Instruction Sessions only. Class activities will be graded on a 0 - 3 point scale. There is no make-up for a missed class activity. Students must be present to participate.

3. **Study Session and Supplemental Instruction (SI) Sessions.** Study sessions and/or SI sessions will be offered during the semester to reinforce concepts/principles presented in class. Sessions will be held on Fridays from 10:00 am – 11:15 am in Pala 213. SI sessions will be conducted by Supplemental Instruction student leader James Wolcott. Study sessions will be conducted by the instructor prof. Akatsuka.

4. **Unit Exams.** Three unit exams are given in class and will be scored on a 100-point scale.

**Make-up.** Make-up opportunity for an exam will be possible only upon a timely presentation of a serious and justified explanation of the student’s absence from the class exam. The instructor has the right to request documentation of the student’s absence from the class and to determine if the absence from the class test is justified. A make-up exam must be taken within one week of the in-class exam unless otherwise specified by the instructor. **No more than one exam may be taken by a student on a make-up basis.**
Course Grade. A letter grade for the course will be assigned according to the level of achievement (based on the total points earned) as provided in the table below:

<table>
<thead>
<tr>
<th>GRADE</th>
<th>DEFINITION</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>90% - 100% of the total possible points</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89% of the total possible points</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79% of the total possible points</td>
</tr>
<tr>
<td>Cr</td>
<td>70% - 100% of the total possible points</td>
</tr>
<tr>
<td>NC</td>
<td>Less than 70% of the total possible points</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69% of the total possible points</td>
</tr>
<tr>
<td>F</td>
<td>Less than 60% of the total possible points</td>
</tr>
</tbody>
</table>

Note: Students must apply for the Cr/NC grading option at the Admissions Office. Consult the WCC Catalog for deadlines.

Note: W grade is given only when the student officially withdraws from the course at the Admissions Office. Consult the WCC Catalog for deadlines.

LEARNING RESOURCES


*The Worksheet*, 2nd edition,
Loo, R.J.K.

Activities Required at Scheduled Times Other Than Class Times
Homework, Study Session, Supplemental Instruction Session

Additional Information

1. Grading on Homework, Class Activities or exams. To receive full marks for problems done on any graded activity, you must show your work neatly and completely as well as provide clear written explanations when it is asked for. Partial credit may be awarded.

2. Class attendance. It is your responsibility to attend every class meeting. Even if you are absent, you are responsible for those topics and examples covered in class that you missed. Furthermore, you are responsible for obtaining any important announcements and assignments given during the class you missed. If you are absent frequently or for an extended period of time, contact the instructor as soon as possible to discuss your situation. Absences and tardiness to class can have a negative impact on your success in this course. Students who stop attending this class and who do not formally withdraw from the course will receive a failing grade.

3. Class preparation. Students are expected to prepare for each class. This means that students should complete reading and/or writing assignments prior to class.

4. Study Sessions and Supplemental Instruction Sessions. Sessions will be offered during the semester to reinforce concepts and principles presented in class. Class activities conducted in these sessions will be scored on a 0-3 point scale and will count towards your final course grade.

5. Learning assistance. Because the nature of the subject matter, students are advised to seek learning assistance from the instructor as soon as they encounter difficulty with reading and/or writing assignments. Peer tutors are available.