Deductive Logic (Phil. 321)  
Oregon State University

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Office Hrs: 2-3 PM Weds. or by app’t.

Required Texts:
Students will also have on-line access to the course outline and schedule, power point slides for each class, as well as their grades, by logging in at http://my.oregonstate.edu

Course Description:
We will treat symbolic deductive logic as a language just like any other, with a new vocabulary, syntax and grammar. The process of translating English into symbolic deductive logic can help us see more clearly when a set of beliefs is internally consistent, and whether an argument supporting a claim is valid and why. The course will have special interest for those students in law, physics, mathematics, engineering, linguistics, philosophy, and computer science, but almost everyone gains something useful by learning logic.

Learning Outcomes:
- Students who successfully complete the course will have a working familiarity with the principles and procedures of deductive logic, symbolised at the level of both sentences and predicates.
- Students will gain familiarity with the following five concepts as expressed in symbolic logic: “logical truth,” “validity,” “soundness,” “consistency,” and “equivalence.”
- As well, students will be able to manipulate the following five connectives in symbolic logic: “and,” “or,” “if,” “not,” and, finally, “if and only if.”

Course Requirements:
- 6 Quizzes, 15% ea., you can drop your lowest score from Quizzes #1-5, although there is not a scheduled final exam, you must count your score for Quiz #6. It is a short, but cumulative quiz. Total points for all 5 quizzes that count: 75.
- 5 Homework assignments worth 5 points, ea. Total points: 25.
- If you miss a quiz or homework then you will need a very good excuse, i.e., your absence must have been beyond your control (e.g., acts of god, or children’s dental emergencies). Otherwise you’ll get a zero on that quiz or assignment.
- These requirements add up to a score out of 100 which will be translated to a letter grade near the end of the quarter. One possible translation scheme, provided as a guideline only, is as follows:

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<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<tbody>
<tr>
<td>A</td>
<td>100 – 91</td>
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<tr>
<td>B</td>
<td>84 – 82</td>
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<td>C</td>
<td>75 - 73</td>
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<td>D</td>
<td>66 - 64</td>
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<td>A-</td>
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<td>B-</td>
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<td>C-</td>
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<td>D-</td>
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<td>B+</td>
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<td>C+</td>
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<td>D+</td>
<td>69 – 67</td>
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<td>F</td>
<td>60 – 0</td>
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</tbody>
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Class Schedule:

- This schedule is subject to change; you are responsible for finding about any changes.
- As a rule, I check email between 10AM and 5PM Mon-Fri., so keep this in mind when trying to contact me.

Week One:
*Course Outline, begin Ch. 1 (1.2 Why study logic? 1.3 Sentences, truth values & arguments); No homework due.
*Discuss Ch. 1 (1.1 background, 1.6 Logical consistency, truth, falsity, & equivalence, 1.4 Deductive validity and soundness, 1.7 Special cases of validity); No homework due.

Week Two:
*Homework due: p. 26, 1 a-g; Review for quiz #1.
*Quiz #1 (on sections 1.1, 1.3, 1.4, 1.5, 1.6, 1.7, glossary).

Week Three:
*Discuss Ch. 2 (2.1 Symbolization: Conjunctions, disjunctions, negations); No homework.
*Ch. 2 (2.4 Syntax; 2.1 Symbolization: Combinations); Homework due: pp. 48-49 1.a,b,c,d,f and 2.a,b,c,f; Review for quiz #2.

Week Four:
*Quiz #2 (on section 2.1 up to pg. 42, plus 2.4); No homework due.
*Ch. 2 (2.1 Symbolization: Conditional, and variants - only if, unless; Biconditional).

Week Five:
*Practice Quiz #3 (sec. 2.1, pp. 43-48); Homework due: pp.49-50, 5a-t.
*Quiz #3 (section 2.1, pp. 43-48); No homework due.

Week Six:
*Ch. 3 (3.1 Truth-value assignments, 3.2 Truth-functional truth, falsity, & indeterminacy, 3.3 Truth-functional equivalence, 3.4 Truth-functional consistency).
*Ch. 3 (3.5 Truth functional entailment, and truth-functional validity); No Homework due.

Week Seven:
*Practice Quiz #4 (sections 3.1-3.5); Homework due: pp. 107-08, 1a–j.
*Quiz #4 (on sections 3.1-3.5); No homework due.

Week Eight:
*Ch. 5 (5.1 The derivation system: conjunctions, conditionals; No homework due. Homework due: Ex.1, pp. 168-169
*Ch. 5 (5.1 Sentential derivations: negations, disjunctions, biconditionals).

Week Nine:
*Ch. 5 (5.2 Applying the derivation rules). Homework due: Exercises p. 175, Ex. 5.1.2. and p. 179-180, Ex. 5.1.4; Practice Quiz #5.
*Quiz #5 (on sections 5.1-5.2); No homework due.

Week Ten:
*Ch. 7 (7.1 The limitations of SL; 7.2 Predicates, individual constants, 7.3 Introduction to PL, 7.4 Quantifiers introduced); Homework due: read section 7.2. Take-home Practice Quiz #6 (sections 7.1-7.4); answers posted on-line.
*Quiz #6 (on sections 7.1-7.4).