

COURSE INFORMATION

Spring 2009: Symbolic Logic
 PHIL 001; Sect.012 [MTWRF 12:45–2:00]: 203 EE WEST

CONTACT INFORMATION

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Texts	
ANGEL	Some reading assignments are available on ANGEL, they are noted during class.
HAUSMAN	<i>Logic and Philosophy: A Modern Introduction</i> (10 th ed.). Thomson Wadsworth. ISBN: 0495128449

Reading List — (5/18 – 6/26)		
18 May	Sentential Logic	Syllabus; Elements of an Argument; Deduction and Introduction; Deductive Argument Forms. HW: Read pp. 1–16; Exercises 1–2 (odd) & 1–3 (odd). Review Introductory Materials & Lesson 1 in ANGEL.
19		Truth and Validity, Soundness, Consistency, Consistency and Validity Compared, Contexts of Discovery and Justification. Symbolizing in Sentential Logic; Atomic & Compound Sentences; Truth-Functions; Conjunctions; Non-Truth Functional Connectives; Variables & Constants; Negations. HW: Review Key Terms (p.16). Read pp.21–41. Exercises 2–1 (1-7, odd), 2-2 (odd), 2-3 (1-7, odd),
20		Parentheses & Brackets; Use & Mention; Disjunctions; “Not Both” & “Neither Nor”; “Material Conditionals”; “Material Biconditionals”; “Only if” & “Unless”; Symbolizing Complex Sentences. HW: Read pp.41–54. Exercises 2-6 (1-7 odd), 2-8 (odd); Review Key Terms (p.52-4)
21		Computing Truth-Values; Logical Form; Tautologies, Contradictions, and Contingent Sentences; Logical Equivalence. HW: Read pp.55-72; Exercises 3-1 (1,3,5,7), 3-2 (1-5 odd), 3-3 (odd), 3-4 (1,3,,11,13), 3-6 (1,3,5,7,9), 3-7 (1,3,5,7)
22		Truth Table Test of Validity; Truth Table Test of Consistency; Validity & Consistency; The Short Truth Table Test for Invalidity & Consistency. HW: Read pp.72-82; Exercises 3-8 (1,3,5,7,13), 3-9 (1,3,5), 3-10 (1,3,5,9), 3-11 (1,3,5)
25	Memorial Day — No Class	
26		Argument Forms; The Method of Proof: Modus Ponens & Modus Tollens; Disjunctive Syllogism & Hypothetical Syllogism; Simplification & Conjunction. HW: Read pp.88-96. Exercises 4-1 (1-9 odd), 4-2 (1-13 odd)
27		Addition & Constructive Dilemma; Principles of Strategy; Double Negation & DeMorgan’s Theorem. HW: Read pp.96-108. Exercises 4-3 (1-13 odd); 4-5 (1-19 odd); 4-6 (1-9 odd)
28		Commutation, Association, Distribution; Contraposition, Implication, & Exportation; Tautology & Equivalence. HW: Read pp.108-113. Exercises 4-7 (1, 3, 9), 4-8 (1-13 odd)
29		More Principles of Strategy; Common Errors in Problem Solving; Key Terms. HW: Read pp.113-124. Exercises 4-9 (1-19 odd), 4-10 (1, 5, 9), 4-11 (1, 3, 5), 4-12 (1,3,9), 4-13 (1,3). For extra credit, try 4-12 (#13) and 4-13 (#13).
1 June		Conditional Proofs; Indirect Proofs; Strategy Hints for Using CP & IP. HW: Read, pp.125-140. Exercises 5-1 (1, 3, 5, 11), 5-3 (1, 3, 5, 9), 5-5 (1,3,5, 9,13)
2		Zero-Premise Deductions; Proving Premises Inconsistent; Adding Valid Argument Forms; Completeness & Soundness of SL; Key Terms. HW: 140-149. Exercises 5-6 (1,3,5), 5-7 (1,3,5)
3		<i>Review Study Guide [see Angel]</i>
4	Test #1	Test #1: Sentential Logic: Language and Proofs — Collect Logic Notebook
5	Predicate Logic	PL Symbolization; Individuals & Properties; Quantifiers & Free Variables; Universal Quantifiers. HW: Read pp.165-174, Exercises 7-1 (odd), 7-2 (odd), 7-3 (1, 3, 5), 7-4 (7, 9)
8		Existential Quantifiers; Square of Opposition; Pitfalls in Symbolization; Expansions,

		Symbolizing “Only”, “None but”, and “Unless”, Review Key Terms HW: Read pp.175-188. Exercises 7-5 (1-9 odd), 7-6 (1-7 odd), 7-7 (1-7 odd), 7-8 (1-7 odd),
9		Interpretations, Invalidity, Expansions to Prove Invalidity; Validity, Consistency, and Inconsistency in PL. HW: Read, pp.189-197. Exercises 8-1 (1-5 odd), 8-2 (1-7 odd), 8-3 (1-7 odd), 8-4 (1-5 odd).
10		Proving Validity; Four Quantifier Rules. HW: 198-205. Exercise 9-1 (1-7 odd)
11		Five Main Restrictions; Precise Formulation & Mastering the Four Quantifier Rules. HW: 206-216. Exercises 9-2 (odd), 9-3 (1-9 odd)
12		Quantifier Negation (QN). HW: Read pp.216-221. Exercises 9-5 (1, 3,5,15). Try #19 for extra credit.
15		<i>Review Study Guide [see Angel]</i>
16	Test #2	Test #2: Predicate Logic: Language and Proofs — Collect Logic Notebook
17	Relational Logic	Relational Predicates; Symbolizations Containing Overlapping Quantifiers; Expansions and Overlapping Quantifiers; Places and Times; HW: Read: 222- 231 Exercises: 10-1 (#1, 3, 5), 10-2 (#1, 3, 5), 10-3 (#1, 3, 5), 10-4 (#1, 3)
18		Symbolizing “Someone,” Somewhere,” “Sometimes”. Invalidity and Consistency in Relational Predicate Logic. HW: Read 231-237. Relational Predicate Logic Proofs. HW: Read pp.237-244. Exercise 10-9 (1-5 odd)
19		Strategy for Relational Predicate Logic Proofs. HW: Read pp.244-247. Exercises 10-10 (1-9 odd), 10-11 (1,3),
22		Theorems and Inconsistency in Predicate Logic HW: Read pp.247-249. Exercises 10-12 (1-5 odd & 11)
23		Identity; Read, pp.283-288. Exercises
24		Definite Descriptions. Properties of Relations. Read pp.289-294. Exercises 13-1 (1-5, odd), 13-2 (1-5, odd), 13-4 (1-5 odd).
25		<i>Review Study Guide [see Angel]</i> — Collect Logic Notebook
26		Review Day — No Class
29	Test #3	Test #3: Final Exam

I. Course Description

Symbolic logic is an introductory, three-credit-hour, course taught frequently in undergraduate philosophy programs. The course teaches the (1) formal structure(s) of propositions and arguments and (2) proof-procedures for logically valid arguments.

II. Grade Evaluation, Scale, Breakdown

- 75% Three Tests (25% each)
- 15% Three Examinations of Logic Notebook (5% each)
- 10% Multiple Online Homework Assignments (assigned in class)
- Grades will be rounded up from the second decimal point, e.g. 90.95 rounds up to 91.0 while 90.94 rounds down to 90.90. In the event that eLION does not allow for a particular grade (e.g. D+), you will simply be given the letter grade (e.g. if you have a D+ then you will get a D).

A: 91–100%;	C+: 79.0–79.9	F: 0–59.9
A–: 90.0–90.9	C: 71.0–77.9	
B+: 89.0–89.9	C–: 70–70.9	
B: 81.0–88.9	D+: 69.0–69.9	
B–: 80–80.9	D: 60.0–68.9	

III. Explanation of Tests, Notebook Examinations, and Online Homework

- Tests (60%)

- There are three tests, all of which will require you to know logical terminology, perform proofs, and will cover the content covered in class, homework, and in handouts available via Angel.
- **Examinations of Notebooks (15%)**
 - You are required to do the exercises specified above in the Reading List. While you are not required to specifically keep a notebook, you are required to keep an organized set of your work. This will be collected at specified times in the semester and reviewed mostly for *completeness*. In order to receive full points, it is not necessary that you (1) did all the exercises correctly, nor (2) that you did 100% of the exercises. A helpful guideline concerning *organization* and *assessment* of these notebooks can be found in the **Introductory Materials** section in ANGEL.
- **Online Homework (10%)**
 - There will be a few homework assignments. These will be basic (mostly conceptual) assessments and will be administered via ANGEL. These will be assigned *during class*. There will be no make-up.

IV. Additional Administrative Information

1. Academic Misconduct

The general principles and policy relating to cheating and plagiarism, which are enforced in this class, can be found in the Penn State policy on academic misconduct. *Academic Integrity*: Academic dishonesty encompasses a wide range of activities, whether intentional or unintentional, that includes, but is not limited to: all forms of fraud, plagiarism, and any failure to cite explicitly all materials and sources used in one's work. Sanctions for these activities include, but are not limited to, failure in a course, removal from the degree program, failure in a course with an explanation in the permanent transcript of the cause for failure, suspension, and expulsion.¹

Other Websites & Resources for Academic Misconduct:

PSU Academic Integrity: www.psu.edu/ufs/policies

PSU ITS: tlt.its.psu.edu/suggestions/cyberplag/cyberplagstudent.html

Plagiarism Tutor: www.libraries.psu.edu/instruction/infolit/andyou/mod9/plagiarism.htm

Turnitin: <http://tlt.its.psu.edu/turnitin>

PSU Teaching & Learning w/ Technology: <http://tlt.its.psu.edu/suggestions/cyberplag/>

2. Disability

If you have a documented disability and wish to receive academic accommodations, please contact the campus disability liaison as soon as possible: (name, office, telephone, email). For additional information, check the university web site: <http://www.equity.psu.edu/ods/>

3. Resources to Help with Research, Writing, Documentation, and Citation

Info Lit. Tutorial: <http://www.libraries.psu.edu/instruction/infolit/andyou/infyou.htm>

University Learning Center: <http://php.scripts.psu.edu/dept/ulc/index.php>

Writing Center: <http://www.psu.edu/dept/cew/writingcenter/UWC/index2.htm>

3. Use of Angel and email communication

Please check regularly the webpage on the [ANGEL](#) website. An online version of this syllabus is available there, and you will be notified of any cancellation of a course meeting there. If you want to email me, please do not email me through Angel. Instead, send pertinent correspondence to dwa132@psu.edu with an appropriate subject line (e.g. P120 Question). Sending an email with an inappropriate subject line may result in your instructor deleting your email because he thinks it is junk. Students are responsible for activity on their computer accounts so only send emails pertinent to the course.

4. Drop procedures

Students planning to drop the course during the semester should discuss their reasons with the instructor before completing the Schedule Adjustment Form (See Office Hours). Those students who simply stop attending class, for whatever reason, without officially withdrawing from the course, will receive the grade of F. If you expect a refund,

¹ Statement on Academic Integrity: <http://www.psu.edu/dept/ufs/policies/47-00.html#49-20> ;

be aware that the date the withdrawal form is processed by Penn State registrar's office determines the amount of refund.

4. *Student Guidance*

If you are in need of psychological counseling, please do not hesitate to contact Penn State's Counseling & Psychological Services (phone: 814-863-0395; website: <http://www.sa.psu.edu/caps/default.shtml>). For any problem related to your studies, university policies and procedures, do not hesitate to seek the help of the Student Affairs Services (website: <http://www.sa.psu.edu/services.shtml>), your Academic Advisor, or arrange a meeting with your instructor who will help you obtain assistance through one of the above, or another, agency.

If you are having trouble completing course work or just having difficulty adapting to University life, do not hesitate to get help. That is what these services (and others) are for, so use them.

5. Classroom Environment

A number of factors figure into creating a healthy classroom environment. In order to facilitate such an environment, I ask you to obey the following: (1) the use of cell phones in any capacity is prohibited (please turn ringers/buzzers off, no text-messaging during class), (2) please do not begin to "pack up" your belongings before your instructor has explicitly dismissed you, (3) please come to class rested, sleeping in class is strictly prohibited, (4) please do not do other work in class. If you are incapable of performing (1)–(4) or are disruptive in class, you will kindly be asked to leave the classroom.

Elements of this syllabus are subject to modification due to unforeseen variables, catastrophic events, or because of other factors. The instructor will announce any of these changes in class.