Course Syllabus

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**Brief Description:** Alternative logics have multiple motivations. Just as predicate logic extends sentential logic to include *all* and *some*, so one may desire further extensions to, say, *necessity* and *possibility*. Further, there may seem to be fundamental difficulties for the classical approach. So, perhaps you were initially shocked (!) to discover that in classical logic anything follows from a contradiction. In this course, we consider logics alternative to the classical approach, with attention to issues of both sorts. Systems to be considered combine, in different ways, semantics based on *possible worlds*, and semantics allowing truth values beyond T and F (e.g., *neither* and even *both*); these include modal logics, conditional logics, and relevant logics. In one way or another, each has important philosophical applications, and each is itself a subject of philosophical debate.

**Course Expectations:** The primary treatment of the logics is sentential, so the only prerequisite is Phil 200 (or comparable background). In a class like this, nothing is more important than regular class attendance, class participation, and faithful, on-time completion of assignments. We need also to respect one another by observing basic rules of course etiquette: Apart from special arrangements, arrive on time, do not leave early, or come and go during class. If you are in the room, be engaged in class activities (not surfing the web, playing with your phone, reading for other classes, or the like). Apart from special arrangement, phones should remain *off* or completely silenced (not on vibrate) during class; do not answer a ring; if your phone does ring, the “penalty” is to bring cookies for all at the next class meeting.

**Text:** The main text is Graham Priest, *An Introduction to Non-Classical Logic: From If to Is*, 2nd ed. available in the bookstore. We will also make use of some materials available on the web, including *Sentential Logic* (SL), “More Natural Derivations for Priest” (MNDP), and “Making Sense of Relevant Semantics” (MSRS).

**Grading:** Grading is based on homework (20%), two midterm exams (20% each), and a final (40%). There are some opportunities to obtain extra credit.
(a) Homework will be regularly assigned in class and due at the beginning of the following period. Assignments will be marked on a 2-point scale according to the following criteria: 2 homework is complete; 1 at least half complete; 0 less than half complete. There is no makeup for this component of the grade apart from compelling, continuing reasons. Thus homework samples regular effort and attendance. However, the homework score is calculated by dividing points earned by two less than points possible; the effect is to “forgive” one missing assignment or, if all assignments are worked, to treat the points as extra credit. You will find the assignment schedules linked on the courses section of my webpage listed under our course at http://rocket.csusb.edu/~troy/courses.htm.

(b) The two midterms are take-home exams. Apart from prior arrangement, late midterm exams cannot be accepted. The final is a comprehensive. It also is (probably) a take-home exam. It will be due (maybe given) at the regular exam period (F 6/17, 10:00).

(c) Extra credit assignments will sometimes be assigned along with homework. Assignments are designed to go with corresponding homework, but will count as on time up to the following exam. Clearly indicate assignment numbers! These are worth 5% of the total grade (making regular homework far more important than these problems).

Grading notes: You may choose any method for getting homework done (short of xeroxing or printing out answers, or the work of another student). In this class, there is nothing unethical if you work together with other students, or even if you copy off the board when problems are worked in class (but not all problems will be worked in class).

The above homework policy DOES NOT apply to the take-home exams. These are open-book, but are to be worked on your own – without the assistance of other students, lab assistants, the instructor, etc. Academic honesty is always essential. Plagiarism will result in an automatic F for the assignment, and up to an F for the course with University discipline. Because the issue is so important, be sure you know what plagiarism is! If you have any questions or concerns, feel free to talk things over with me. See also “What is Plagiarism?” linked from my website http://rocket.csusb.edu/~troy/courses.htm along with http://bulletin.csusb.edu/academic-regulations/ (search for ‘plagiarism’).

All grading is numerical. Grades are not curved. Given your weighted score, you may expect to receive at least the grade associated with the usual scale: ≥ 90% for an ‘A’, ≥ 80% for a ‘B’, and so forth.

Order of Instruction (tentative):

I. Classical logic / Necessary background
   Priest, chapter 1
   SL chapter 7, MNDP section 1
<table>
<thead>
<tr>
<th>II. Normal Modal Logics</th>
<th>Priest, chapters 2, 3, MNDP section 2</th>
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<tbody>
<tr>
<td><strong>midterm exam</strong></td>
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<tr>
<td>III. Conditional Logics</td>
<td>Priest, chapter 5, MNDP section 4</td>
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<tr>
<td>IV. Many-Valued Logics</td>
<td>Priest, chapters 7, 8, MNDP section 6</td>
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<tr>
<td><strong>midterm exam</strong></td>
<td></td>
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<tr>
<td>V. Relevant Logics</td>
<td>Priest, chapter 10, MNDP sections 8, 9, MSRS</td>
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<tr>
<td><strong>final exam</strong></td>
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In addition, we will wave at non-normal modal logics, intuitionistic logics, and fuzzy logics as we pass them by. Depending on time and interest, we may be able to develop some of these in more detail, and we may have to delete the section on conditional logics. Some of these might constitute good topics for another course or independent study!

**Details:** The CSU faculty union is in the midst of a contract dispute with administration. It is possible that faculty will be on strike April 13-15 and 18-19. Prof Roy will be out on any strike days.

There are no adds after the census date. If you are in need of an accommodation for a disability in order to participate in this class, please let Prof Roy know as soon as possible and also contact Services to Students with Disabilities (UH 183, 537-5238). If you require assistance in the event of an emergency, you are advised to establish a buddy and alternate buddy from our class; individuals with disabilities should prepare for an emergency ahead of time with their ‘buddies’ and the instructor.

Everyone should receive messages from their CSUSB e-mail. If this is not your regular address, you can set it to forward messages to your regular address.

**The Payoff:** Anyone in this class already has some commitment to symbolic logic – to its methods, its value as a mental discipline. This course contributes to the philosophy major and the logic minor. Naturally I hope you will find the systems we study fascinating for their own sake. In addition, however, by the end of this course you will be good at reasoning from definitions (as in chapter 7 of SL, and applied in different versions of Phil 400). And the systems we shall study are required for the extension of formal methods to (important) reasoning beyond the reach of classical logic.