

Philosophy 109: Intro to Formal Reasoning and Decision Making

Fall 2018

Class Meetings: Tuesday and Friday, 10:55am – 12:15pm
Dr Ruth Adams Building, 110B

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Office hours: 10am-12pm, Thursdays

Overview: Philosophers, along with psychologists, economists, and computer scientists, are interested in studying *rational inferences* and *rational decision-making*. This course focuses on the formal tools that they have used to better understand both of these things. No prerequisites or prior knowledge will be necessary. We will start with propositional logic, which studies the notions of valid sentential inference and entailment (roughly, what follows from what). We will then move to inductive logic, which studies how we should reason under uncertainty, and build up to a formal theory of rational decision making. Finally, we will wrap up by considering various ways of extending basic propositional and inductive logics.

Website: The course website can be found on Sakai (<https://sakai.rutgers.edu/portal>). I will use it to make announcements, distribute handouts and readings and to post homework assignments. It is very important that you are able to access the website. If you are not able to, let me know straightaway.

Reading: All readings will be posted on the Sakai site.

Assessment: Especially when it comes to formal material, practice makes perfect. So there will be regular homework assignments (8 in total). Assignments will be announced in class and posted on Sakai. The grades from your *two weakest assignments* will be dropped. You will submit your completed assignments on Sakai.

There will also be a midterm exam and a final exam at the end of semester. The midterm will examine your grasp on material from the first half of the semester. The final exam will examine your grasp on the whole semester's material and will take place on Dec 21, 2018 from 8:00 AM to 11:00 AM.

The grades will be broken down as follows:

Homework: 50%
Midterm: 20%
Final: 30%

Core Curriculum Goals: QQ or QR: The course meets core curriculum goals QQ (Formulate,

evaluate, and communicate conclusions and inferences from quantitative information) and QR (Apply effective and efficient mathematical or other formal processes to reason and to solve problems).

Class Policies:

Attendance: Attendance is not mandatory. But mastering the material in this course requires you to apply yourself regularly and consistently to the material, so attendance is strongly encouraged. If you will be absent, I expect you to use the university website, <https://sims.rutgers.edu/ssra/>, to report this, indicating the date and reason for your absence.

Late Assignments: Late homework will not be accepted, except in the case of illness, bereavement and other extenuating circumstances. Any extensions must be cleared ahead of time.

Academic Integrity: Violations of academic integrity are a very serious matter and the consequences can be extremely severe. Among the most serious violations are cheating, fabrication, plagiarism, denying others access to information or material, and facilitating violations of academic integrity. (For a more thorough overview of what violations are and what their consequences can be, see <http://academicintegrity.rutgers.edu/academic-integrity-policy/>.)

Plagiarism can occur unintentionally from ignorance; but ignorance is not an excuse. If you are not sure what counts as plagiarism, consult the following tools:

The Camden Plagiarism Tutorial (INTERACTIVE):

<http://library.camden.rutgers.edu/EducationalModules/Plagiarism/>

Consult Don't Plagiarize: Document Your Research! For tips about how to take notes so that you don't plagiarize by accident.

http://www.libraries.rutgers.edu/avoid_plagiarism

Further resources are available at <http://academicintegrity.rutgers.edu/resources-for-students/>.

Laptop Policy: I strongly encourage you all to take notes *by hand*: it's well-documented that taking notes by hand better facilitates learning. But however you decide to take notes, please refrain from texting, surfing the web and other non-class related activities during lectures.

Schedule:

Below you will find the plan for the semester. This is of course subject to revision, depending on how quickly we progress through the material. Any changes to the schedule will added to the syllabus on the course website.

Week 1	Deductive	Intro and soundness and validity
Week 2	Deductive	Sentential form and intro to PL
Week 3	Deductive	Beginning translation and complex sentences
Week 4	Deductive	Translating into truth-functional logic
Week 5	Deductive	Translating into truth-functional logic
Week 6	Deductive	Truth-tables
Week 7	Deductive	Truth-tables
Week 8	Deductive	Truth-tables
Week 9	Inductive	Intro
Week 10	Inductive	Basics of probability
Week 11	Inductive	Dependence and Independence
Week 12	Inductive	Bayes theorem
Week 13	Inductive	Bayes theorem
Week 14	Inductive	Probability review
Week 15	Inductive	Decision theory

Student-Wellness Services:

Just In Case Web App

<http://codu.co/cee05e>

Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ www.rhscaps.rutgers.edu/

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

The Office of Disability Services works with students with a documented disability to determine the eligibility of reasonable accommodations, facilitates and coordinates those accommodations when applicable, and lastly engages with the Rutgers community at large to provide and connect students to appropriate resources.

Scarlet Listeners

(732) 247-5555 / <http://www.scarletlisteners.com/>

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.