

INTRODUCTION TO FORMAL REASONING AND DECISION MAKING (01:730:109:01)
SPRING 2018—RUTGERS UNIVERSITY
Instructor: Nathaniel Flores
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This course satisfies 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.

1. Course Description

This course presents an introduction to fundamental concepts in deductive logic, probabilistic reasoning, and rational decision making. Students will learn to identify the logical structure of everyday arguments and pieces of reasoning and will learn tools that can be used to formally evaluate when argument structures are or are not valid.

Readings for the course will be taken from “Elements of Deductive Inference” by Joseph Bessie and Stuart Glennan and from “An Introduction to Probability and Inductive Logic” by Ian Hacking. The relevant selections from both texts will be made available through the sakai site for the course, though students are also welcome to purchase the texts if they so choose.

2. Course Location and Meeting Times

This course meets from 9:50am to 11:10am on Mondays and Thursdays in Scott Hall Room 206 on the College Avenue Campus.

3. Grading Scale and Scheme

A	B+	B	C+	C	D	F
91-100	88-91	81-88	78-81	70-78	60-70	0-59

Graded assignments for this course will consist of a midterm exam, a final exam, and bi-weekly homework assignments. The final for the course is not cumulative.

Homework 20%
Midterm 40%
Final 40%

Special grading Policy: After the conclusion of regular classes, if students would like to improve their final grade for the course, they will have the option of taking a cumulative final as opposed

to the regular final. A score on the cumulative final that is higher than the current course grade for the student taking the final, will override their current course grade. So for example, if the course grade going into the final for a student was a C, and their grade on the cumulative final is a B+, their final grade for the course would become B+.

4. Course Policies

Attendance

Students are expected to attend all classes. If you expect to miss one or two classes, please use the University absence reporting website <https://sims.rutgers.edu/ssra/> to indicate the date and reason for your absence. An email is automatically sent to me.

Accommodations

Students with disabilities requesting accommodations must follow the procedures outlined at <http://disabilityservices.rutgers.edu/request.html>

Academic Integrity

Students caught plagiarizing on homework assignments or exams will be subject to consequences depending on the severity of the offense. In the worst case, students violating this policy may receive an F for the course and the case may be reported to the Rutgers Office of Student Conduct. Students are advised to familiarize themselves with the current Rutgers policy on academic integrity located at <http://academicintegrity.rutgers.edu/academic-integrity-policy/>.

Email Policies

Students should feel free to email me throughout the course with questions. Barring exceptional circumstances, I reply to emails sent during the week within 24 hours. If a question posed over email concerns an issue that cannot be addressed in a time efficient manner over email, then I may request that the student come to office hours or schedule an appointment to meet.

Office Hours

I will hold office hours in Room 542 at the philosophy department from 3:00pm to 5:00pm on Mondays. The philosophy department is located on the fifth floor of 106 Somerset Street near the New Brunswick train station. Whenever possible, students should use the “sign up” tab on sakai to indicate a time slot when they will be arriving. The purpose of this sign up tab is to avoid situations when multiple students come to office arounds around the same time and need to spend time waiting to speak with me.

Late Work and Extensions

Homework assignments submitted late will lose 1 point for every day that they are late. I understand that students often have busy lives and must juggle many competing commitments and am happy to grant extension requests submitted at least 24 hours in advance of assignment deadlines. If the extension request is for more than an additional day or two, then some explanation should be provided for the request.

5. Course Schedule

1/18	Intro	
1/22	Unit 1: Deductive Logic Arguments and Types of Arguments	Bessie and Glennan 1-24
1/25		
1/29	Translation	Bessie and Glennan 28-65
2/1		
2/5	Semantic Analysis	Bessie and Glennan 3.1, 3.2, 3.4, 3.5
2/8		
2/12	Syntactic Analysis	Bessie and Glennan 155-173
2/15		
2/19	Deduction and Writing	
2/22		
2/26	Review	
3/1		
3/5	Exam 1	
3/8		
3/19	Unit 2: Inductive Logic Probability and Probabilistic Arguments	Hacking 11-36, 127-150
3/22		
3/26	Rules of Probability	Hacking 37-68
3/29		
4/2	Bayes' Rule	Hacking 69-78
4/5		

4/9	Decision Making	Hacking 79-113
4/12		
4/16	Decisions Under Uncertainty	Hacking 114-126
4/19		
4/23	Induction, Decision Theory, and Writing	
4/26		
4/30	Review	

6. Other Rutgers Resources

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.