ECO317: Concepts of Fairness in Economics

University of Toronto, Winter 2025

https://q.utoronto.ca/courses/377557

Syllabus version: January 7, 2025

Lectures: Mon 1 – 3 PM, WI 1017
Instructor: Alim Faraji, alim.faraji@mail.utoronto.ca
Office hours: TBD

Tutorials: Thu 1 – 2 PM, SS 1073
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Overview

What the class is about: This is a class on *distributive justice*: how to fairly balance conflicting interests.

This topic broadly encompasses two kinds of questions. There are questions of "micro" fairness, or fair decision-making in specific, everyday situations:

- A group of friends are sharing an apartment with unequal-sized rooms. How should they divide the rent?
- A pharmacy doesn't have enough of a drug to fill all its patients' prescriptions. How should it decide how much each patient gets?

And there are questions of "macro" fairness—what constitutes a fair society or world:

- In measuring the overall well-being of a society, how do we weigh the luxury of the rich—or the affluence of the middle—compared to a small improvement in well-being for the poor?
- How should we trade off the enjoyment of people currently living against the harms that our environmental damage imposes on future generations?

Much of this subject matter lies at the intersection of economic theory and moral philosophy. This class will take the economic perspective, which focuses on developing mathematically precise criteria to capture our notions of fairness. A central tool is the

axiomatic approach: the idea of writing down principles to ensure judgments are made consistently across similar scenarios, and then understanding the logical implications of those principles.

For many of the questions we study—especially the more macro-scale questions—there will often be no one right answer. But we will learn to think about the questions in a systematic way and to recognize inevitable tradeoffs between different principles.

Course objectives: Students will:

- Recognize various kinds of situations that require judgments about distributive justice.
- Be acquainted with classic dilemmas in which different principles of distributive justice conflict.
- Develop the habit of approaching fairness questions by looking for principles to apply across a class of situations.
- Be familiar with the mathematical expression of fairness principles via the axiomatic approach.
- Be familiar with some of the classic solutions that economic theory has proposed for problems of distributive justice, and the arguments that justify them.

Format: This class will take place through both lectures and tutorials.

The essential content of the course will be covered in lectures. Although there will not be graded activities in lecture, you are strongly urged to attend consistently.

Tutorials will be a combination of reviewing background material and homework problems. You are encouraged to attend to strengthen your understanding.

Reading: The main written resource for this class is the notes provided by Gabriel Carroll, who thought this course for the past few years. The notes can be found on the Quercus site at the beginning of the semester. They are meant to correspond closely to the content of the lectures. Reading them will be helpful to solidify your understanding and to fill in details that may be glossed over in lecture.

You will be held responsible for content covered in lectures and in problem sets. The more detailed week-by-week schedule below indicates specific sections for each topic

(again, adjustments may occur later). There are a few sections of the lecture notes that won't be covered in the class. You will not be responsible for the sections that the class skips over. On the other hand, we may cover topics that are not part of the notes. It is your responsibility to follow what is covered in the lectures.

In addition to the lecture notes, you will likely find it useful to have one or more other sources for alternative perspective. There are three suggested textbooks:

- Hervé Moulin, *Fair Division and Collective Welfare*, MIT Press, 2003 (FDCW).

  (Out of print, but available electronically in PDF format via the university library website, `http://library.utoronto.ca` .)

- H. Peyton Young, *Equity in Theory and Practice*, Princeton University Press, 1994 (ETP).

- Hervé Moulin, *Axioms of Cooperative Decision Making*, Cambridge University Press, 1988 (ACDM).

Officially, FDCW is "recommended" and the others are "optional." This means that I expect the most students to choose FDCW, and accordingly, the course roughly follows the notation and vocabulary of FDCW, so that you can follow along in it without too much adjustment back and forth. That said, you may prefer one or another book depending on your taste. FDCW addresses the largest share of the subject matter of the course. ETP offers numerous engaging real-world examples, and you may find the organization clearer. ACDM is more advanced and goes into much more mathematical detail.

Policies and procedures

Health and safety: Although campus life has been solidly in-person for nearly three years now, COVID-19 has not disappeared. You are strongly encouraged to make efforts to protect the health of your fellow students and instructors: Stay up-to-date with your vaccinations. Support your classmates who choose to wear masks. If you are feeling unwell or have recently tested positive, please stay home, and ask a classmate to fill you in on what you may have missed.

Prerequisites and Exclusions: In terms of content, this course assumes that you have taken an intermediate microeconomics class (ECO200, ECO204, or ECO206). It is also

possible that the Department of Economics may impose additional prerequisites. Consult the Arts & Science timetable and the department website for additional information. Prerequisites are enforced by the department, and I do not have power to grant exceptions.

This course was previously offered as ECO351 (Special Topics in Economics: Principles of Fair Decisions). Students who have completed that course cannot also take ECO317.

Assignments and grading: There will be weekly problem sets and two exams:

- **Problem sets: 28%.** There will be 8 of these, assigned weekly. These will be a mix of mathematical problems and open-ended verbal questions. Some problems will be challenging; don't wait until the last day! Problem sets will be coarsely graded. The lowest problem set grade will be dropped, and the other 7 counted for 4% each.
- **Midterm exam: 36%.** The midterm exam will be held on February 24 during class time. It will include material covered up to the "Discrimination and algorithmic fairness" lectures. The content will be similar to the problem set questions. You can bring any printed material with you to the midterm exam.
- **Final exam: 36%.** It includes content from "Voting, social choice" onwards, so the final exam is not cumulative. The content will be similar to the problem set questions. The exam date will be scheduled later. Similar to the midterm exam, the final exam is open book; you may bring any printed material to the exam room.

You are encouraged to collaborate with other students to solve the homework problems, but you must write up your solutions independently.

Missed exams: If you are unable to attend the midterm exam due to a valid reason, its weight will be transferred to the final exam. You must submit the required documentation and email the course instructor no later than the start of the midterm exam, ensuring your documentation is included. Note that if you miss the midterm exam, your final exam will be cumulative. If you miss the final exam, you may submit a petition to defer it.

Late work and extensions: Late problem sets will receive a mark of zero. You are advised to submit problem sets early to avoid unexpected setbacks. (The drop-one problem set policy will also provide some protection.)

If you miss a deadline due to a genuine emergency that calls for an exception, then you should email the instructor and TA by the deadline. You should also supply one of the four forms of documentation approved by A&S (the University's Verification of Illness Form, the Absence Declaration on ACORN, a letter from your College Registrar, or an accommodation letter from Accessibility Services). If you wait until after the assignment is graded to ask for a special exception, you can typically expect your request to be ignored.

Regrade policy: Requests for regrades on problem sets and papers will be honored if (a) made in writing, with a clear and plausible reason specified, and (b) made within two weeks after the assignment has been returned. The relevant assignment will be regraded in its entirety, so the grade may go either up or down. Submitting a regrade request entails an agreement to accept the new grade, whatever it turns out to be. Final exam regrades follow specific procedures that are set by the Office of the Faculty Registrar, including an initial step to schedule a viewing or request a copy of the graded exam.

Academic conduct: Don't plagiarize, and don't cheat.

These seemingly simple rules can be complex in practice. The University's Academic Integrity website at `http://academicintegrity.utoronto.ca` contains many helpful resources. These include the *Code of Behaviour on Academic Matters* which lays out standards for proper academic conduct and describes the procedures to handle cases of suspected misconduct, as well as practical strategies to avoid running into trouble.

Use of generative AI: With the recent rise of powerful generative artificial intelligence (AI) tools, many questions come up about whether they can be used on class assignments. For this class, you are allowed to use generative AI tools to any capacity; you may find them helpful, for example, as aids in organizing ideas or improving the clarity of your writing. However, overreliance on such tools can be dangerous: they can create made-up facts, illogical reasoning, or just sentences full of scholarly-looking words without actual ideas behind them. Ultimately, you are accountable for the work you submit.

Communication policy: Announcements, either concerning course content or administration, will be made via Quercus.

You are encouraged to post questions, either about content or about procedure, on the discussion forum, also on Quercus. This way, other students who might be interested

can see the answers, and everyone can contribute to answering questions.

If you have an issue that is specific to you and does not warrant public discussion, you can raise it by email. I will typically respond within two business days. If you have not heard back from me after 2 business days, please send me a follow-up email. Be sure to use your UofT email address for communication. The message should include your name and should clearly identify you as a student in ECO317.

Diversity: The University of Toronto brings together people from a wide range of backgrounds and cultures. This diversity enriches and strengthens us. Accordingly, it is important for this course—as elsewhere at the University—to maintain an atmosphere that is respectful and welcoming to the participation of all members of the community. Be sensitive to how comments in class discussion might be perceived by others. The University does not condone discrimination or harassment based on personal characteristics. Positive suggestions for how to make the class more inclusive are appreciated.

Accommodation: Students with diverse learning styles and needs are welcome in this course. If you need accommodation for an ongoing health issue or disability, you should register with Accessibility Services, `http://studentlife.utoronto.ca/as` .

Week-by-week schedule

The content of the lectures will aim to follow the schedule below. In practice, there will be some adjustments.

As noted above (see under "Readings"), the main reading source will be lecture notes, and this schedule lists the sections relevant to each topic (marked with $*$). The schedule also lists relevant sections from the suggested textbooks, if any. Note that FDCW also has a short final chapter that concisely summarizes the mathematical definitions and results for each of the other chapters. For the topics not covered in the books, the schedule lists relevant articles, which will be linked from the Quercus website. The articles are classified, like the textbooks, as recommended (Rec) or optional (Opt).

Lectures will not assume that you have done the relevant reading beforehand; some students find it more efficient to read on a topic after lecture rather than before. However, you would be wise not to fall behind by multiple weeks.

- Jan 6: Course intro; claims problems

    - Lecture notes: 0, 1.1–3, 1.5
    - (Rec) FDCW: 2.1–3, 2.5
    - (Opt) ETP: 4.1–3, 4.5–7, 4.10, A.5
    - (Opt) ACDM: 6.1–5 (may be easier after doing the next week's reading first)

- Jan 13: Claims problems (continued); cost-sharing problems
    - Lecture notes: 2.1–2, 2.4
    - (Rec) FDCW: 5 (entire chapter)
    - (Opt) ETP: 5.1–7, A.6
    - (Opt) ACDM: 4.1, 5.1–3

- Jan 20: Cost-sharing problems (continued)

- Jan 27: Fair division
    - Lecture notes: 3 (entire chapter)
    - (Rec) FDCW: 7.4–6
    - (Opt) ETP: 9.1–8, A.8

- Feb 3: Fair division (continued)

- Feb 10: Discrimination and algorithmic fairness
    - Lecture notes: 4.1–5
    - (Opt) Jon Kleinberg, Jens Ludwig, Sendhil Mullainathan, and Cass Sunstein, "Discrimination in the Age of Algorithms," *Journal of Legal Analysis* 10, 2018: 113–174
    - (Opt) Sam Corbett-Davies and Sharad Goel, "The Measure and Mismeasure of Fainess: A Critical Review of Fair Machine Learning," 2018, arXiv preprint

- [Feb 17: Reading week; no classes]

- Feb 24: Midterm Exam

- Mar 3: Voting, social choice

    - Lecture notes: 5.1–5.3
    - (Rec) FDCW: 4.1–2, 4.4, 4.6
    - (Opt) ETP: 2.6, A.3
    - (Opt) ACDM: 9.1, 9.3, 10.2, 11.1–2, 11.6

- Mar 10: Cardinal welfare: utilitarianism, egalitarianism
    - Lecture notes: 6.1–3, 6.5
    - (Rec) FDCW: 3.1–5
    - (Opt) ACDM: 1 (entire chapter), 2.1–5

- Mar 17: Cardinal welfare (continued): inequality

- Mar 24: Population ethics
    - Lecture notes: 7 (entire chapter)
    - (Rec) Hilary Greaves, "Population Axiology," *Philosophy Compass*, 2017 (can skip section 5)
    - (Rec) Yew-Kwang Ng, "What Should We Do about Future Generations?" *Economics and Philosophy* 5, 1989: 235–253 (can read up through Section II; later sections are inessential)
    - (Opt) Charles Blackorby, Walter Bossert, and David Donaldson, "Critical-Level Utilitarianism and the Population-Ethics Dilemma," *Economics and Philosophy* 13, 1997: 197–230

- Mar 31: Compensation and responsibility
    - Lecture notes: 8 (entire chapter)
    - (Rec) John E. Roemer and Alain Trannoy, "Equality of Opportunity: Theory and Measurement," *Journal of Economic Literature* 54(4), 2016: 1288–1332 (read sections 1–4)
    - (Rec) Xavier Ramos and Dirk Van de gaer, "Approaches to Inequality of Opportunity: Principles, Measures, and Evidence," *Journal of Economic Surveys* 30(5), 2016: 855–883 (read sections 1–2)

– (Opt) Marc Fleurbaey, "Three Solutions for the Compensation Problem," *Journal of Economic Theory* 65, 1995: 505–521 (can focus on sections 1–3)

The final exam will be scheduled later. The Office of the Faculty Registrar is in charge of scheduling for all in-person final exams.